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709002

Solvent Savers Superfund Site

Chenango County, New York

EPA
Region 2

May 2002

MARK YOUR CALENDAR

XX XX, 2002 - XX XX, 2002: Public comment period on the Proposed Plan and Explanation of Significant Differences.

XX XX, 2002 at 7:00 p.m.: Public meeting at the Lincklaen Town Hall, Lincklaen, NY.

COMMUNITY ROLE IN SELECTION PROCESS

EPA and NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, the RI/FS report, ROD, *Focused Feasibility Study for PCB-Impacted Vadose Zone Soil, Focused Feasibility Study for VOC-Impacted Vadose Zone Soils*, and this document have been made available to the public for a public comment period which begins on XX XX, 2002 and concludes on XX XX, 2002.

A public meeting will be held at XX on XX XX, 2002 at 7:00 P.M. to discuss the changes to the soil remedies, to elaborate further on the reasons for recommending the changes, and to receive public comments.

Comments received at the public meeting, as well as written comments, will be documented in the Responsiveness Summary section of a new ROD.

PURPOSE OF THIS PROPOSED PLAN AND EXPLANATION OF SIGNIFICANT DIFFERENCES

This document, which describes proposed changes to the soil remedies selected in the Environmental Protection Agency's (EPA's) September 28, 1990 Record of Decision (ROD) for the Solvent Savers Superfund site, was developed by EPA in consultation with the New York State Department of Environmental Conservation (NYSDEC).

In accordance with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, 42 U.S.C. §9601 *et seq.* (CERCLA) and Section 300.435(c)(2)(i) of the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300 (NCP), if after the selection of a remedial action plan, a component of the action differs in any significant respect from the original action, an explanation of the significant differences and the reasons such changes were made must be published.

EPA is issuing this document as part of its public participation responsibilities under Section 117(a) of CERCLA and Section 300.430(f)(2) of the NCP.

EPA proposes to change the remedy for the volatile organic compound (VOC)-contaminated soils from excavation, on-site low temperature thermal extraction (LTTE),and backfilling to in-situ soil vapor extraction (SVE) and to change the soil remedy for the polychlorinated biphenyl (PCB)-contaminated soils from excavation and off-site incineration to excavation and off-site treatment/disposal.

EPA and NYSDEC encourage the public to review the *Focused Feasibility Study for PCB-Impacted Vadose Zone Soil* and the *Focused Feasibility Study for VOC-Impacted Vadose Zone Soils* to gain a more comprehensive understanding of the proposed changes to the soil remedies. In addition, the 1990 remedial investigation and feasibility study (RI/FS) report, which describes the nature and extent of the contamination at and emanating from the site, the risks associated with the site, and identifies and evaluates various remedial alternatives, and the 1990 ROD should be consulted for background information.

This document is being provided as a supplement to the above-noted documents, to inform the public of the proposed changes to the soil remedies, and to solicit public comments pertaining to the proposed changes.

Changes to the proposed modifications to the soil remedies may be made if public comments or additional data indicate that such changes will result in a more appropriate remedial action. The final decision regarding the modifications to the soil remedies will be made after EPA has taken into consideration all public comments. We are soliciting public comment on all of the alternatives considered in this document because EPA may select remedies other than the proposed remedies.

The administrative record file, which contains this document, as well as all other information upon which the selection of the modified soil response actions will be based, is available at the following locations:

Ponds Store
Star Route
DeRuyter, NY 13052

USEPA-Region II
Superfund Records Center
290 Broadway, 18th Floor
New York, NY 10007-1866
(212) 637-4308

Hours: Monday-Friday, 9:00 a.m. - 5:00 p.m.

Written comments on this document should be addressed to:

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SCOPE AND ROLE OF ACTION

The primary objectives of this action are to control the sources of soil contamination at the site, to minimize the migration of contaminants, and to minimize any potential future health and environmental impacts.

SITE BACKGROUND

Site Description

The site, located on Union Valley Road, covers approximately 13 acres in the Town of Lincklaen (see Figure 1). The site is enclosed by an 8-foot high chain-link fence. The closest residence to the site is located approximately 500 feet to the north[1]. Public water supplies do not exist in the general area; therefore, the residents rely on private wells. The Town of Lincklaen has a population of approximately 500 people. Fifteen dairy farms are located in the Town. Pastures for dairy cows are located 2 miles from the site along a portion of Mud Creek, which is downstream of the site. Mud Creek is classified as a trout stream by the State and is used for recreational activities and livestock watering. In addition, alfalfa, corn, and other crops for human and livestock consumption are grown in the area.

Site History

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1 The former Lindsey residence (which was located on-site) was demolished in 1994. The former Parkin and Springer residences, located west and north of the site along Union Valley Road, were demolished in 1996 and 1997, respectively.

Industrial solvents and other wastes were brought to Solvent Savers Inc., a chemical waste recovery facility, for reprocessing or disposal from about 1967 to 1974. Operations included distillation to recover solvents for reuse, drum reconditioning, and burial of liquids, solids, sludges, and drums in several on-site areas. The quantities and types of wastes disposed at the site and their locations are not fully known.

In 1981, NYSDEC conducted an initial site characterization, which included sampling of the on-site surface soils, water in Mud Creek, and three private wells in the immediate vicinity of the site. Sample analysis indicated that the ground water, surface water, sediments, and soil are contaminated with VOCs, including, primarily, tetrachloroethene, trichloroethylene, and 1,1,1-trichloroethane. The soil and ground water contain inorganics, including arsenic, barium, cadmium, chromium, and lead. The soil is also contaminated with PCBs. Based upon these findings and a subsequent investigation by EPA in 1982, the site was placed on the National Priorities List of uncontrolled hazardous waste sites in 1983.

In 1984, several of the potentially responsible parties (PRPs) entered into a Consent Agreement with the New York State Department of Law (NYSDOL), which among other items, provided for the performance of an RI/FS.

In 1985, the PRPs' consultant submitted an RI/FS report to the NYSDOL, NYSDEC, and EPA. The agencies found that the information as presented in the report was inadequate to characterize the nature and extent of contamination at the site, and determined that a supplemental RI/FS was required to formulate a cleanup strategy. After negotiations with the PRPs, an agreement on the additional work could not be reached. This prompted EPA to initiate a supplemental RI/FS.

In 1989, during the supplemental RI/FS field work, 127 drums were excavated and were overpacked (placed in leakproof outer drums). In December 1990, pursuant to an administrative order issued by EPA, the PRPs removed the overpacked drums for off-site treatment/disposal at an EPA-approved facility. The PRPs also excavated 33 drums and drum parts buried on-site, which were removed for off-site treatment/disposal in September 1991. Approximately 200 cubic yards of contaminated soil, which was excavated in conjunction with the exhumation of the drums and drum parts, was removed for off-site treatment/disposal by the PRPs in November-December 2000.

In 1990, following the completion of the supplemental RI/FS, a ROD was signed, selecting a remedy for the site. The selected remedy calls for: 1) chemical precipitation, air stripping, and carbon adsorption for the cleanup of the contaminated ground water; 2) excavation of the contaminated soil; 3) treatment of PCB-contaminated soil via off-site incineration; and 4) treatment of the VOC-contaminated soils with LTTE[2]. The ROD also called for the performance of treatability studies to determine whether the VOC-contaminated soils could be treated using SVE[3]. If such treatability studies showed that SVE would be an effective means of treatment, then the remedy would be so changed.

Since negotiations with the PRPs related to the design and construction of the selected remedy did not result in a settlement, in May 1991, EPA issued a unilateral administrative order to the PRPs, requiring them to undertake design and cleanup activities.

The PRPs initiated the preparation of a work plan for the performance of design and treatability study activities related to the remedy in late 1991; however, numerous revisions to the document were necessary before field sampling and treatability study work could commence. Following the completion of field sampling, a full-scale SVE pilot-scale treatability system was designed; it was constructed in 1994-95. Since that time, the system has been expanded and modified several times such that it now encompasses all of the unsaturated (above the water table), VOC-contaminated soil. The data that has been generated has indicated that the system has removed the VOCs from the soil in most areas[4].

In 1992, the PRPs executed a deed restriction agreement on the site with the property owner. The deed restriction agreement prohibits any commercial, residential, or recreational development on the site, prohibits any commercial, residential, or recreational use of the site, and prohibits any use of groundwater beneath the site.

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2 LTTE involves the feeding of excavated soil into a mobile treatment unit where hot air volatilizes the VOCs. The VOCs that are extracted from the soil are then either condensed, transferred to another medium (such as activated carbon), or thermally treated to ensure their complete destruction. The off-gases are filtered through a carbon vessel. Following treatment, the soils are then used as backfill material for the excavated area.

3 SVE involves drawing air through a series of wells to volatilize the solvents contaminating the unsaturated (above the water table) soils. The extracted vapors are then treated in an activated carbon unit and monitored before being vented to the atmosphere. In-situ SVE leaves the soils in place while they are being remediated.

4 The VOCs in the soil are being treated to meet NYSDEC's soil cleanup objectives identified in the Technical and Administrative Guidance Memorandum No. 98-HWR-4046, January 24, 1994 (TAGM). For constituents where TAGM clean up objectives do not exist (*e.g.*, 1,1,2-trichloroethane), preliminary clean up levels derived using a fate and transport model in the ROD will be used. To date, the SVE system has removed an estimated 15,000 pounds of VOCs from the site's soils.

It is anticipated that additional field work related to the ground water remediation will be performed in late Spring 2002. This effort will allow the subsequent completion of the design related to the ground water.

The design related to the PCB-contaminated soils will be finalized once the modified remedy and the new cleanup levels are put into effect with the signing of an amended ROD and soil samples defining the boundaries of the soil

WHAT IS RISK AND HOW IS IT CALCULATED?

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

Hazard Identification: In this step, the contaminants of concern (COC) at the site in various media (*i.e.*, soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

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

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

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

excavation are collected[5]. It is anticipated that construction will commence in the Fall of 2002.

EXTENT OF PCB AND VOC SOIL CONTAMINATION

Based upon the results of 385 surface and subsurface soil samples, it was determined that PCB-contaminated soils extend over an approximately 27,000-square foot area to a maximum depth of 29 feet below the ground surface, ranging in concentration from nondetectable to 15,290 milligrams per kilogram (mg/kg).

Based upon the results of 468 surface and subsurface soil samples collected before the SVE system was installed, it was determined that VOC-contaminated soils extended over a 145,000-square foot area to a maximum depth of 42 feet below the ground surface. The maximum detections were 13 mg/kg, 530 mg/kg, 400 mg/kg, 4,000 mg/kg, 3.5 mg/kg, 6,100 mg/kg, and 350 mg/kg for 1,2-dichloroethene, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, and xylene, respectively.

Based upon historic ground water elevations, the ground water table beneath much of the site seasonally fluctuates anywhere from three to eight feet. The area in which these seasonal fluctuations occur is referred to as the "fluctuating water table zone." There are PCB hot spots in the fluctuating water table zone which represent a "principal threat waste" (*i.e.*, greater than 100 mg/kg PCB). The typically immobile PCBs in these areas are believed to be mobile due to the presence of VOCs and the movement of water table and would, therefore, be a continuing source of ground water contamination and a potential ecological threat (the contaminated ground water may be discharging to Mud Creek). In addition, non-aqueous phase liquid, a principal threat waste, is present in the fluctuating water table zone and below the water table.

SUMMARY OF SITE RISKS RELATED TO PCBS

A baseline risk assessment was conducted to estimate the risks associated with current and future site conditions. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects caused by hazardous substance exposure in the absence of any actions to control or mitigate these under current and future land uses.

The human health and ecological risk estimates summarized below are based on current reasonable maximum exposure scenarios and were developed by taking into account various conservative estimates about the frequency and duration of an individual's exposure to PCB-contaminated soils, as well as the toxicity of this contaminant.

5 Since the PCBs can be mobile due to the presence of VOCs, final soil samples cannot be collected until the treatment of the VOCs via SVE has been completed.

WHAT IS A "PRINCIPAL THREAT?"

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430 (a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for the migration of contamination to ground water, surface water, or air, or acts as a source for direct exposure. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of alternatives, using the remedy selection criteria which are described below. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

Human Health Risk Assessment

The site is located in a primarily residential/agricultural area. Consequently, possible future uses of the site include development for residential purposes and/or agricultural uses. Residents could potentially be exposed to contaminants present in surface and subsurface soil through absorption and incidental ingestion resulting from activities such as gardening or playing. It was assumed that subsurface soils might be redistributed to the surface during grading or other soil-disturbing activities.

The results of the risk assessment indicate that the estimated excess cancer risk for direct contact with PCB-contaminated surface soils by trespassing children under current conditions is 3.9×10^{-2}. This value is outside of the acceptable excess cancer risk range of 10^{-4} to 10^{-6}. The HI value for noncarcinogenic effects is 360, which exceeds the threshold level of one.

The estimated excess cancer risk for on-site residents under the hypothetical future residential exposure to surface soils is 6×10^{-2}, which is outside of the acceptable excess cancer risk range. The HI value for noncarcinogenic effects related to residential exposure to surface soil is 190, which exceeds the threshold level of one.

The estimated excess cancer risk for on-site residents under the hypothetical future residential exposure to subsurface soils is 2.0×10^{-2}, which is outside of the acceptable excess cancer risk range. The HI value for noncarcinogenic effects related to residential exposure to subsurface soils is 62, which exceeds the threshold level of one.

Ecological Risk Assessment

PCBs are present in the soil at concentrations which present a potential ecological risk and are, therefore, likely to have an adverse effect on wildlife utilizing the site and its vicinity. If the site is unremediated, the effects could be more pronounced over time as a result of increasing concentrations in the media of concern and bioaccumulation through the food chain.

Summary of Human Health and Ecological Risks

The results of the risk assessment indicate that exposure to PCB-contaminated surface soils by trespassing children under current conditions and hypothetical future residents pose an unacceptable excess cancer and non-cancer risk. The site also poses an unacceptable ecological risk.

BASIS FOR CHANGING THE PCB-CONTAMINATED SOILS REMEDY

When the ROD was signed, on the basis of EPA's PCB policy (OSWER Directive 9355.4-01), a 1 mg/kg PCB action level was selected for the site[6]. The estimated volume of soil exceeding this action level was 1,000 cubic yards (yd^3). Based upon the results of pre-design soil samples collected for PCB analyses, the volume of PCB-contaminated soils increased to approximately 5,000 yd^3 (employing NYSDEC's TAGM objectives of 1 mg/kg PCB at the surface and 10 mg/kg PCB in the subsurface[7]), representing an approximately 500% increase over the volume of PCB-contaminated soil described in the ROD.

Much of the PCB-contaminated soil is also contaminated with VOCs. The supplemental FS report evaluated off-site disposal of the excavated VOC- and PCB-contaminated soils. This alternative was ruled out, however, because, in order to comply with Resource Conservation and Recovery Act (RCRA) land disposal requirements, the soils would have had to been treated to remove the high levels of spent solvents before disposal in a RCRA- and/or Toxic Substances Control Act (TSCA)-compliant landfill, and the cost of implementing this remedy was an order of magnitude higher than the other source control alternatives. However, because of the significant increase in the volume of the PCB-contaminated soils and the fact that the VOCs have, for the most part, been removed from the PCB-contaminated soils by the SVE system, off-site treatment/disposal has now become a more attractive alternative. Therefore, the remedy for the PCB-contaminated soil was reassessed.

6 OSWER Directive 9355.4-01 recommended a 1 mg/kg action level as a starting point for PCB clean ups in residential areas; the site is located in a rural agricultural area, with homes situated in close proximity to the site.

7 At the time of the ROD, NYSDEC's soil cleanup objectives for PCBs were not yet determined. A subsurface soil cleanup level change to 10 mg/kg consistent with the TAGM objectives would remain protective. EPA believes that this clean up level will be protective, since the existing deed restrictions will minimize the risk of exposure in the event of future subsurface soil disturbance.

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 which 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 §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, which 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).

Three alternatives to address the PCB-contaminated soil are discussed below. Detailed descriptions of these alternatives can be found in the *Focused Feasibility Study for PCB-Impacted Vadose Zone Soil.*

The construction time for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy, negotiate the performance of the remedy with the responsible parties, or procure contracts for design and construction. Since there are no annual costs associated with the alternatives that were evaluated, only capital costs are presented.

The PCB remedial alternatives are:

Alternative 1: No Further Action

Capital Cost:	$0
Construction Time:	0 months

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no further action remedial alternative does not include any physical remedial measures to address the PCB- contaminated soils.

Because this alternative would result in leaving in place approximately 5,000 cubic yards of PCB-contaminated soils, CERCLA requires that the site be reviewed at least once every five years. If justified by this assessment, remedial actions may be implemented in the future to remove or treat the waste.

Alternative 2: Excavation of PCB-Contaminated Soils, Off-Site Incineration

Capital Cost: $8,100,000

Construction Time: 6 months

Under this alternative, approximately 5,000 cubic yards PCB-contaminated soil exceeding NYSDEC TAGM objectives for PCBs (1 mg/kg PCB at the surface and 10 mg/kg in the subsurface) would be excavated to the water table. PCB-contaminated soils below the water table which are considered principal threat waste (*i.e.,* greater than 100 mg/kg) would be excavated to the maximum extent practicable. The actual extent of the excavation and the volume of the excavated material would be based on post-excavation confirmatory sampling. Shoring of the excavation and extraction and treatment of any water that enters the trench would be necessary.

The excavated areas would be backfilled with clean fill and revegetated.

All excavated material would be characterized and transported for incineration/disposal at an off-site RCRA- and TSCA-compliant facility.

Because this alternative would result in leaving in place PCB-contaminated soils below the water table, CERCLA requires that the site be reviewed at least once every five years. If justified by this assessment, remedial actions may be implemented in the future to remove or treat the waste.

Alternative 3: Excavation of PCB-Contaminated Soils and Off-Site Treatment/Disposal

Capital Cost: $3,300,000

Construction Time: 6 months

This alternative is the same as Alternative 2, except that instead of off-site incineration, all excavated PCB-contaminated soils would be transported for treatment/disposal at an off-site RCRA- and TSCA-compliant facility.

To facilitate the off-site treatment/disposal of the PCB-contaminated soils, contingent upon the results of treatability studies, some of the excavated soils might be subjected to on-site pretreatment for VOCs. All of the principal threat waste soils would require off-site treatment.

Because this alternative would result in leaving in place PCB-contaminated soils below the water table, CERCLA requires that the site be reviewed at least once every five years. If justified by this assessment, remedial actions may be implemented in the future to remove or treat the waste.

EVALUATION OF ALTERNATIVES

In selecting a remedy for a site, EPA considers the factors set forth in CERCLA §121, 42 U.S.C. §9621, by conducting a detailed analysis of the viable remedial alternatives pursuant to the NCP, 40 CFR §300.430(e)(9) and OSWER Directive 9355.3-01. The detailed analysis consists of an assessment of the individual alternatives against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

- Overall protection of human health and the environment addresses whether or not 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 institutional controls.
- Compliance with applicable or relevant and appropriate requirements addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and regulations or provide grounds for invoking a waiver.

- Long-term effectiveness and permanence refer 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, a remedy may employ.

- Short-term effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and 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 option.

- Cost typically includes estimated capital and operation and maintenance costs, and net present-worth costs. However, since there are no annual costs associated with the alternatives that were evaluated, only capital costs are presented.

- State acceptance indicates whether, based on its review of the RI/FS reports and the document, the State concurs with, opposes, or has no comment on the preferred remedy 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 document and the RI/FS reports.

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

- Overall Protection of Human Health and the Environment

Alternative 1 (no further action) would be the least protective of human health and the environment, since it would not actively address the PCB-contaminated soils. The existing deed restrictions, SVE soil cover[8], and perimeter fence would, however, provide some degree of protection of human health under current conditions. No further action would not be protective of human health if the property were used in the future in accordance with the reasonably-anticipated future residential/agricultural land use.

Alternative 2 (off-site incineration), the remedy selected in the ROD, and Alternative 3 (off-site treatment/disposal) would be protective of human health and the environment, since each alternative relies upon a strategy capable of removing the contaminated soils from the site.

- Compliance with ARARs

There are currently no federal or state promulgated standards for contaminant levels in soils, only New York State soil cleanup objectives as specified in the TAGM.

Since the PCB-contaminated soils would not be addressed under Alternative 1 (no further action), this alternative would not comply with the soil cleanup objectives. Alternative 2 (off-site incineration), the remedy selected in the ROD, and Alternative 3 (off-site treatment/disposal) would, on the other hand, attain the soil cleanup objectives specified in TAGM.

Alternatives 2 and 3 would be subject to New York State and federal regulations related to the transportation and off-site treatment/disposal of wastes. Alternatives 2 and 3 would involve the excavation of PCB-contaminated soils, some of them potentially contaminated with VOCs, therefore, requiring compliance with fugitive dust and VOC emission regulations.

- Long-Term Effectiveness and Permanence

Alternative 1 (no further action) would involve no active remedial measures and, therefore, would not be effective in eliminating the potential for contaminants to continue to migrate in soil and ground water. Alternative 2 (off-site incineration), the remedy selected in the ROD, and Alternative 3 (off-site treatment/disposal) would be effective in the long term and would provide permanent remediation by removing the wastes from the site and treating/disposing them off-site.

8 SVE involves drawing air through the contaminated soil to volatilize the VOCs. To minimize air losses through the ground surface, it includes a 2-foot thick clean soil layer and polyethylene sheeting.

•Reduction in Toxicity, Mobility, or Volume Through Treatment

Alternative 1 (no further action) would provide no reduction in toxicity, mobility, or volume. Under Alternative 2 (off-site incineration), the remedy selected in the ROD, and Alternative 3 (off-site treatment/disposal), the toxicity, mobility, and volume of the contaminants would be reduced by removing the PCB-contaminated soil from the site for treatment and treatment/disposal, respectively.

•Short-Term Effectiveness

Alternative 1 (no further action) does not include any physical construction measures and, therefore, would not present any potential adverse impacts to on-site workers or the community as a result of its implementation. Alternative 2 (off-site incineration), the remedy selected in the ROD, and Alternative 3 (off-site treatment/disposal) could result in some adverse impacts to on-site workers through dermal contact and inhalation related to the excavation and post-excavation sampling activities. The risks to on-site workers under these alternatives could, however, be mitigated by utilizing proper protective equipment.

Alternatives 2 and 3 would increase vehicle traffic and impact the local roadway system, and could subject nearby residents to increased noise levels. Alternatives 2 and 3 would require the off-site transport of PCB-contaminated soils, which may pose the potential for traffic accidents, which could result in releases of hazardous substances.

Under Alternatives 2 and 3, disturbance of the land during excavation activities could affect the surface water hydrology of the site. There is a potential for increased stormwater runoff and erosion during excavation and construction activities that would have to be properly managed to prevent or minimize any adverse impacts. For these alternatives, appropriate measures would have to be taken during excavation activities to prevent transport of fugitive dust and exposure of workers and downgradient receptors to volatile organic compounds and PCBs.

Since no further actions would be performed under Alternative 1, there would be no implementation time. It is estimated that Alternatives 2 and 3 would require 3 to 6 months to excavate and transport the PCB-contaminated soils to an EPA-approved treatment/disposal facility.

•Implementability

Alternative 1 (no further action) would be easy to implement, as there are no activities to undertake. Alternative 2 (off-site incineration), the remedy selected in the ROD, and Alternative 3 (off-site treatment/disposal) would employ technologies known to be reliable and can be readily implemented. In addition, equipment, services, and materials needed for these alternatives are readily available, and the actions under these alternatives would be administratively feasible. Sufficient facilities are available for the treatment/disposal of the excavated soils under Alternatives 2 and 3.

Under Alternatives 2 and 3, monitoring the effectiveness of the excavation could be easily accomplished through post-excavation soil sampling and analysis.

• Cost

Since there are no annual costs associated with the alternatives that were evaluated, only capital costs were determined for each of the alternatives. The estimated capital costs for each of the alternatives (there are no operation and maintenance costs) are presented below.

Alt.	Capital Cost
1	$0
2	$8,100,000
3	$3,300,000

As can be seen by the cost estimates, Alternative 1 (no further action) is the least costly alternative at $0. Alternative 2 (off-site incineration), the remedy selected in the ROD, is the most costly alternative at approximately $8,100,000. The estimated capital cost for Alternative 3 (off-site treatment/disposal) is $3,300,000.

• State Acceptance

NYSDEC concurs with the modified remedy for the PCB-contaminated soils.

• Community Acceptance

Community acceptance of the preferred remedy will be assessed in the amended ROD following review of the public comments received on *Focused Feasibility Study for PCB-Impacted Vadose Zone Soil* and this document.

MODIFIED REMEDY FOR PCB-CONTAMINATED SOILS

Based upon an evaluation of the various alternatives, EPA and NYSDEC recommend Alternative 3, excavation of contaminated soils and off-site treatment/disposal, for the remedy for the PCB-contaminated soils. Under this alternative, approximately 5,000 cubic yards PCB-contaminated soil exceeding NYSDEC TAGM objectives for PCBs (1 mg/kg PCB at the surface and 10 mg/kg in the subsurface) would be excavated down to the water table. PCB-contaminated soils below the water table which are considered principal threat waste (*i.e.,* greater than 100 mg/kg) would be excavated to the maximum extent practicable.

All of the principal threat waste soils would require off-site treatment. To facilitate the off-site treatment/disposal of the PCB-contaminated soils in areas where VOC concentrations are above the soil cleanup objectives, contingent upon the results of treatability studies, some of the excavated soils might be subject to on-site pretreatment for VOCs.

Because this alternative would result in leaving in place PCB-contaminated soils below the water table, CERCLA requires that the site be reviewed at least once every five years. If justified by this assessment, remedial actions may be implemented in the future to remove or treat the waste.

While Alternative 2 (off-site incineration) would be just as protective of public health and the environment, would achieve the remedial action objectives, and would be able to achieve ARARs as quickly as Alternative 3 (off-site treatment/disposal), Alternative 2 is substantially more expensive than Alternative 3.

EPA and NYSDEC believe that the modified remedy for the PCB-contaminated soils will be protective of human health and the environment, will comply with ARARs, will be cost-effective, and will utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The modified remedy will also meet the statutory preference for the use of treatment as a principal element.

DESCRIPTION OF SIGNIFICANT DIFFERENCES RELATED TO THE REMEDY FOR THE VOC-CONTAMINATED SOIL AND THE REASONS FOR THOSE DIFFERENCES

The 1990 ROD called for, among other things, the treatment of the VOC-contaminated soils with LTTE. The ROD also called for the performance of treatability studies to determine whether the VOC-contaminated soils could be treated using SVE. If such treatability studies showed that SVE would be an effective means of treatment, then the remedy would be so changed.

Following the completion of field sampling to better define the extent of the soil contamination, a pilot-scale SVE treatment system was designed and constructed to treat a portion of the VOC-contaminated soil. Since the completion of its construction in 1995, the system has been expanded and modified several times such that it now encompasses all of the unsaturated (above the water table) VOC-contaminated soil.

The data that has been generated has indicated that the system is removing the VOCs from the unsaturated soils in most areas. Since the SVE treatability studies have shown that this technology will be an effective means of treating the VOC-contaminated unsaturated soils to TAGM objectives, the remedy will be so modified.

There are several unsaturated areas where it does not appear that the SVE system will treat the soils to TAGM objectives for VOCs in a reasonable time frame. Any VOC-contaminated soils in these areas that cannot be addressed by SVE will be excavated and treated/disposed of in conjunction with the PCB-contaminated soils.

Since SVE can only effectively remove VOCs from unsaturated soils, it is likely that SVE will not result in all of the soils within the fluctuating water table zone achieving soil clean up objectives in a reasonable time frame. To enhance the removal of VOCs in Area A (see figure) fluctuating water table zone soils (where overlying PCB-contaminated soils will be excavated) and VOCs below the water table in Area A, contingent upon the results of treatability studies, following the excavation of the PCB-contaminated soils, in-situ chemical treatment would be applied in this area. Any remaining VOC-contaminated soils in this area and other site fluctuating water table zone areas will be addressed by ground water extraction and treatment.

The estimated cost of SVE is $4,200,000[9], which is significantly less than the estimated $36,900,000 to implement LTTE, the remedy selected in the ROD.

STATE AGENCY COMMENTS

NYSDEC supports the change to the remedy for the VOC-contaminated soils.

AFFIRMATION OF STATUTORY DETERMINATIONS

EPA and NYSDEC believe that the modified remedy for the VOC-contaminated soils is as protective as the ROD remedy with respect to human health and the environment, increases the cost-effectiveness of the action, and complies with federal and state requirements that are applicable or relevant and appropriate to this remedial action. In addition, the remedy continues to utilize permanent solutions and alternative treatment technologies to the maximum extent practicable for this site.

The change to the remedy for the VOC-contaminated soils is not considered by EPA or NYSDEC to be a fundamental alteration of the remedy selected in the ROD. The remedy modification maintains the protectiveness of the remedy with respect to human health and the environment, increases the cost-effectiveness of the action, and complies with federal and state requirements that were identified in the ROD.

9 The estimated costs for SVE also include the costs for excavation and off-site treatment/disposal of the VOC-contaminated soils from the unsaturated areas where they cannot be effectively removed via SVE.