Superfund Program ◘ June 2002

Proposed Plan

Beede Waste Oil Superfund Site
Plaistow NH

After careful study of the impacts of contamination remaining at the Beede Waste Oil Site, EPA and NH DES propose the following cleanup plan:

Contaminated soil which is less than 10 feet below the ground surface and poses the greatest risk of exposure will be excavated and shipped off-site for treatment and/or disposal. This includes:

√ Most of the shallow soil (less than two feet deep) in the former operations area.
√ The contaminated soil piles and landfill.
√ Contaminated sediments from the former oil breakout area.

Following excavation:
√ The Site will be backfilled and graded with clean fill (as necessary), and a vegetative cover will be established.
√ Wetlands and flood storage capacity will be restored in the landfill and sediment excavation areas.

Contamination which is greater than 10 feet below the ground surface will be treated in-situ using Soil Vapor Extraction (SVE), possibly thermally-enhanced, to address volatile organic compounds (VOCs) which are a continuing source of groundwater contamination.

Contaminated groundwater will be extracted from seven wells and treated on site to restore it to drinking water standards.

A closer look at EPA's preferred alternative can be found on page 4.

Come to a Public Meeting to Learn More

Find out about the proposed cleanup plan at a public meeting scheduled for June 26th in Plaistow NH. At the meeting, EPA and NH DES will summarize the cleanup proposal and will be available to respond to your questions and concerns about the cleanup. Liability issues will be discussed at a separate meeting in July.

Your Opinion Counts!

EPA is accepting public comment on this cleanup proposal from June 19 to August 18, 2002. If you have comments regarding EPA's proposed cleanup plan for the Beede Site, we want to hear from you before making a final decision. In addition, EPA is also soliciting specific comment on a finding of no practical alternative to wetland and floodplain impacts. This finding is described further on page 6.

Public Information Meeting for the Proposed Cleanup Plan
Wednesday, June 26, 2002 at 7:00 p.m.

Public Hearing for the Proposed Cleanup Plan
Wednesday, July 17, 2002 at 7:00 p.m.

both events will be held at the:
Vic Geary Center
Greenough Rd., Plaistow, NH

To provide formal comment, you may offer oral comments during the public hearing or **send written comments** postmarked no later than **August 18, 2002** to:

Jim DiLorenzo
U.S. EPA
Suite 1100 (HBO)
1 Congress St.
Boston MA 02114

E-mail: dilorenzo.jim@epa.gov

For more information about the proposed plan, meetings, or should you have specific needs or questions about the facility and it's accessibility, please contact EPA Community Involvement Coordinator Angela Bonarrigo (toll free): 888-372-7341 x 81034.

In accordance with the Comprehensive Environmental Response, Compensation and Liability Act, (Section 117) the law that established the Superfund program, this document summarizes EPA's cleanup proposal. For detailed information on the options evaluated for use at the site, see the Feasibility Study available for review on-line at ***www.epa.gov/region01/superfund/sites/beede*** *or at the information repositories at the Plaistow Town Library and at EPA's 1 Congress Street Office in Boston.*

Site History

The following is a brief summary of the regulatory history of the site.

1926 - 1962: Robert Beede operates a waste oil disposal / recycling facility.

1962 - 1992: Cash Energy and subsidiaries store and distribute fuel oil, recycled used oil and antifreeze, and (starting in the late 1980's) conduct cold-patch asphalt batching using oil-contaminated soil.

1980 - 1983: Beede Waste Oil enters into a Consent Decree with NHDES, under which Beede Waste Oil removes hazardous substances from three underground storage tanks.

1991: The state attempts to compel the company to correct permit violations.

1992: Rockingham County Superior court issues injunction requiring owners to conduct a site investigation, remove oil from surface water and groundwater, and cover contaminated soil piles.

1992 - 1994: Beede Waste Oil / Cash Energy stops taking in contaminated soil and waste oil. Tri-State Resources operates a virgin fuel oil storage and distribution business.

1993: NH DES begins court-mandated clean-up activities when site owner does not.

1994: All business operations cease.

1996: The site is placed on EPA's Superfund List.

1996 - 1997: EPA & NH DES remove of thousands of gallons of contaminated waste oil, sludge, and antifreeze. Approximately 100 tanks and 800 drums (over 1 million gallons) are removed.

1997 - 2001: EPA & NH DES complete Remedial Investigation and Feasibility Study that fully assesses site contamination, possible related risks, and evaluates cleanup options.

2000 - current: EPA constructs and operates a vacuum-enhanced extraction system to remove contaminated floating oil.

Why is Cleanup Needed?

The Beede Waste Oil Site occupies approximately 40.6 acres at 7 Kelley Road in the Town of Plaistow, New Hampshire. The site is located in a largely residential area and the abutting properties are mainly homes. The area is currently zoned for medium density residential use. Waste handling operations reportedly started in 1926 and ended in 1994 when all business operations at the property ceased. Approximately 800 drums, 100 above ground storage tanks, truck trailer tanks, and19 underground storage tanks were located on the site and had a combined storage capacity of about 3 million gallons.

Between July 1996 and November 1997, EPA and NH DES removed all known stored liquids and tanks from the site. This included: approximately 110,000 gallons of oil/hazardous liquid, 200 tons of hazardous sludge, 725,000 gallons of wastewater, 900 drums, approximately 160,000 gallons of used oil, 100,000 gallons of non-hazardous sludge, and 850 tons of scrap steel.

In February 2000, EPA completed construction of a vacuum-enhanced extraction system to remove contaminated oil floating on the groundwater. A 120 foot long oil interceptor trench was also installed along Kelley Brook to eliminate ongoing seepage of oil into the brook. As of April 2002, the extraction system had recovered more than 65,000 gallons of contaminated oil for off-site disposal.

Even though these actions have removed a sizeable amount

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of contamination from the site, significant contamination remains in soil, groundwater, surface water and sediment, as described below.

Seventeen soil piles totaling approximately 16,000 yd^3 of contaminated soil and a landfill containing approximately 11,000 yd^3 of material remain on the site. Test pits indicate that the landfill primarily contains solid waste, however fifteen drums of liquid hazardous waste were removed by the property owner sometime in early 1992.

A wide range of contaminants have been detected at the site, most notably Volatile Organic Compounds (VOCs), polychlorinated biphenyls (PCBs), petroleum hydrocarbons (PHCs), metals (lead in particular), and polynuclear aromatic hydrocarbons (PAHs). The primary findings of the Remedial Investigation field activities are listed below:

- Shallow soil contamination (0 to 2 feet below ground surface) exists throughout much of the former operations area. Contaminants include PCBs, PHCs and lead.

- Deeper soil contamination (greater than 2 feet below ground surface) is present in discrete areas and is generally associated with the former waste oil lagoon, underground storage tank and adjacent above ground storage tank area, as well as surface water runoff pits 1 and 2. Contaminants include VOCs, PHCs, and to a lesser extent, PCBs and lead.

- Samples collected from the 17 soil piles indicate that the principal contaminants are PCBs and several metals including lead, mercury and zinc.

- A broad zone of groundwater contamination extends over 2,000 feet from the former operations area onto abutting properties to the north and northeast. Contaminants are primarily VOCs.

Contaminants, including VOCs, PAHs, PCBs and metals have been detected in surface water and sediment from Kelly Brook and associated wetlands. Elevated concentrations of these contaminants are limited to two primary areas along Kelley Brook near the former oil seepage area and in a bend farther downstream.

Contaminated oil floating on the groundwater table is currently being removed however, a zone of VOCs associated with this oil remains trapped in the deep soil and will require treatment.

Exposure pathways (or routes of exposure) evaluated include: dermal contact with soil, groundwater, surface water and/or sediment; ingestion of soil, groundwater, surface water, sediment and/or home garden produce that takes up soil contaminants; inhalation of vapors; and fish consumption.

The risks to current residents adjacent to the property are due primarily to exposure to contaminants via groundwater. NHDES is providing wellhead treatment as needed and residential groundwater quality monitoring. The risks to individuals on the property is from exposure to soil contaminated with primarily lead and PCBs.

In Kelly Brook, there is a human health risk associated with exposure to manganese in sediment; PCBs and arsenic in fish and sediment, as well as heavy PAH contamination in surface water. Ecological risks were also assessed. The proposed cleanup will mitigate any such risks which were found to be relatively minor.

Actual or threatened releases of hazardous substances from this Site, if not addressed by the preferred alternative or other active measures considered, present current or potential threats to public health, welfare, and the environment.

Cleanup Objectives

The remedial action objectives for this proposed cleanup plan are to:

■ Prevent human exposure to contamination through ingestion, inhalation and/or dermal contact with contaminated soils, groundwater and sediments that would result in unacceptable levels of risk.

■ Limit leaching of contaminants (VOCs) from soils that would result in contaminant concentrations in groundwater above drinking water standards.

■ Limit the migration of contaminants in groundwater beyond the current groundwater plume and ultimately achieve drinking water quality standards throughout the site.

■ Limit and ultimately eliminate the discharge of contaminated groundwater to Kelley Brook.

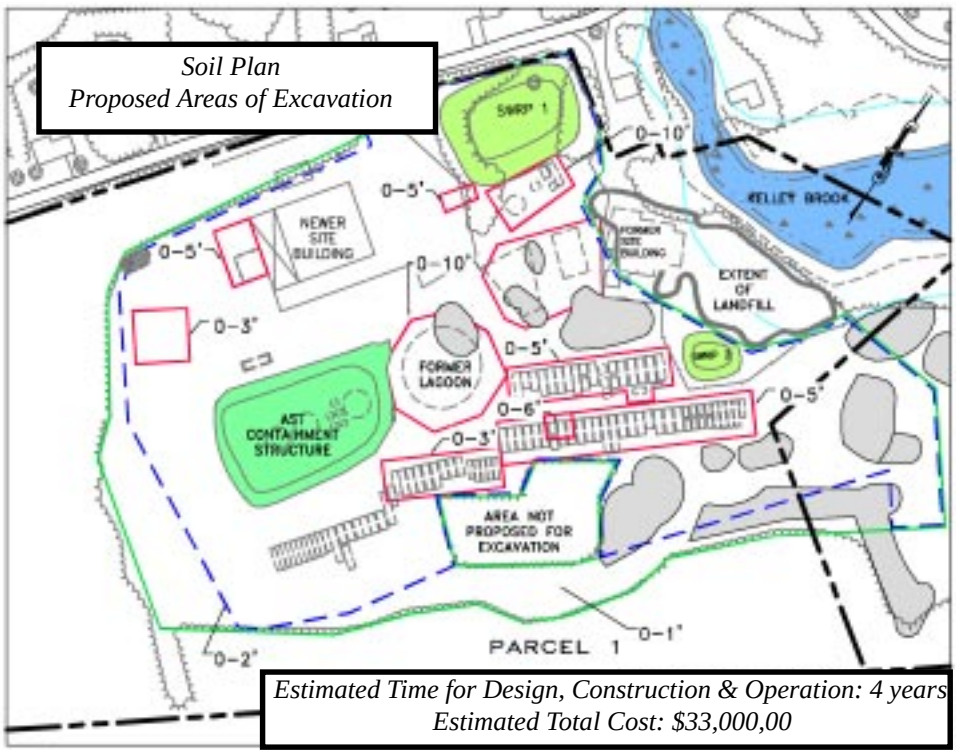
These actions will permanently reduce the toxicity, mobility and volume of the materials on site, which currently represent an ongoing source of contamination.

A Closer Look At EPA's Proposal. . .

EPA proposes to address contamination at the site by combining source control alternative SC-5 and management of migration alternative MOM-3.

Source Control Alternative SC-5: Contaminated soil which can be readily excavated, and which poses a relatively greater risk of potential direct exposure, will be excavated and shipped off-site to a permitted facility for appropriate treatment and/or disposal. This includes the soil piles, surface and shallow soil, and subsurface soil (i.e., 0 to 10 feet below ground surface), the landfill, and contaminated sediments from the former oil breakout area. The excavated material, totaling just under 80,000 cubic yards, will take a minimum of 4 months to remove.

Following excavation, the site will be backfilled/graded with clean fill (as necessary) and a vegetative cover will be planted. Wetlands and flood storage capacity will be restored in the landfill and sediment excavation areas. Deep soil (greater than 10 feet below the ground surface) will be treated in-place using Soil Vapor Extraction (SVE), possibly thermally-enhanced, to address VOCs which are a continuing source of groundwater contamination. It is not necessary to treat other contaminants located more than 10 feet below the ground surface since they are inaccessible and not impacting groundwater quality. A field-scale pilot study is recommended to fully evaluate the need for thermal enhancement, however the application of thermal enhancement is included in the cost estimate. Natural attenuation is proposed for the solvent distillation unit area soils below a depth of 2 feet and for the deep soil (greater than a 10 foot depth) in the Surface Water Retention Pit (SWRP) 1 area. Contaminated soils in these areas, which are acting as sources of groundwater contamination, have demonstrably weakened and do not appear likely to adversely impact the groundwater nor pose an unacceptable level of risk from direct contact. Surface water, sediments, and wetlands will be monitored and fishing restrictions continued. Site conditions and risks will be reviewed at five year intervals.



Soil Plan
Proposed Areas of Excavation

Estimated Time for Design, Construction & Operation: 4 years
Estimated Total Cost: $33,000,00

Groundwater Alternative MOM-3: Groundwater will be extracted from the shallow aquifer, treated and then discharged on-site. The assumed design capacity for MOM-3 is 200 gallons per minute. The sustained pumping rate is expected to be about 85 gallons per minute. The groundwater extraction system is assumed to include seven wells. Five 'near source' wells will be installed downgradient of the sources near the Parcel 1-2 boundary. Near source wells are designed to capture contaminant plumes while still close to their sources and relatively shallow. An additional two 'near receptor' wells will be installed near the southeast boundary of Parcel 2 in order to capture groundwater upgradient of affected residential wells southeast of parcel 2 and to decrease the time these wells remain contaminated. Selected groundwater plumes, including the solvent distillation unit plume, the SWRP 1 plume and a portion of the UST/AST/SWRP 2 plume discharging to Kelley Brook, will be monitored for natural attenuation.

Collected groundwater will be treated to remove metals and VOC contaminants. Metals are removed first to avoid interference with the subsequent treatment steps. The resulting metals and sludge will be shipped off-site for disposal at a permitted facility. Water remaining from the metals removal will be cycled back through the on-site groundwater treatment system.

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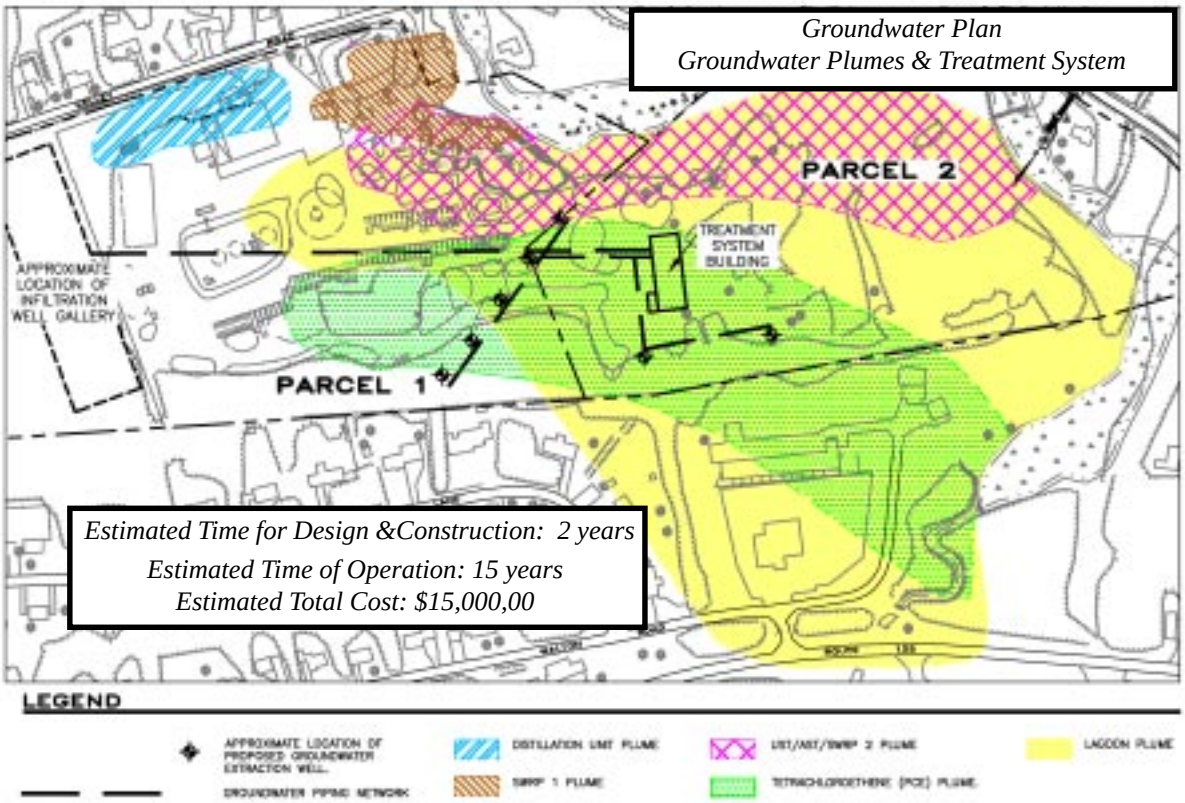
After the metals are removed, the groundwater will be treated with air stripping to remove the VOCs. Air is blown through the groundwater in order to transfer the VOCs from water to air. The air stream then passes through a vapor-phase activated carbon filter to remove contaminants before the air (or steam) is released to the atmosphere. The water will pass through liquid-phase activated carbon filters that will remove any residual VOCs (and other organics). The treated water will then be recharged to the shallow subsurface groundwater upgradient of contaminant source areas via a subsurface infiltration system consisting of approximately forty, one foot diameter, vertical infiltration wells. Alternatively, treated groundwater may be discharged directly to Kelley Brook. Selection of either subsurface or surface discharge will occur in the final design and depend on the surface discharge limits as compared to the treatment system effluent concentrations.



The time estimated for MOM-3 to attain groundwater cleanup goals for targeted contaminated groundwater plumes Site-wide is assumed to be 15 years, and approximately 5 years for groundwater in the vicinity of impacted residential wells. Pump tests of the aquifer's hydraulic conductivity (extraction and infiltration rates) are recommended during remedial design to identify the optimum pumping rates. One of the principal assumptions in groundwater cleanup time estimates is that the start-up of the groundwater extraction system is after the source areas are completely removed. Therefore, the estimated time-frame for groundwater cleanup is 15 years after the source control actions are completed.

Cleanup Levels:

EPA has established cleanup levels for the site which are protective of human health and the environment. The selected remedy must reduce contaminant concentrations to or below these levels. Over one hundred contaminants have been detected in the groundwater, soil, sediment and surface water at the Site. Some contaminants are relatively small contributors to risks at the Site and are usually co-located with other contaminants of concern. Addressing the contaminants of concern will likely address these smaller contributors, therefore, levels were established for about 30 contaminants of concern which represent the greatest risks to human health and the environment.

The targeted cleanup levels for soil are 0.5 parts per million (ppm) for total PCBs, 1,000 ppm for total PHCs and 400 ppm for lead.

The targeted cleanup levels for groundwater are drinking water standards.

The soil cleanup focuses primarily on removing PCBs, PHCs and lead. The groundwater cleanup focuses on removing VOCs. Excavating sediments in the oil discharge area will reduce the human health risk associated with recreational and fishing activities, and attain sediment concentrations that are consistent with those measured in upstream and downstream sampling locations. Cleanup goals were not established for surface water which is expected to improve once contaminated sediments are removed from the former oil discharge area and the contaminated groundwater plume is addressed.

Four Kinds of Cleanup

EPA looked at numerous technical approaches to determine the best way to reduce the risks at the Beede site. EPA then narrowed the possibilities to approaches that would protect human health and the environment. Although reducing risks often involves combinations of highly technical processes, there are really only four basic options.

Take limited or no action: Leave the site as it is, or just restrict access and monitor it.

Contain contamination: Leave contamination where it is and cover or contain it in some way to prevent exposure to, or spread of, contaminants. This method reduces risks from exposure to contamination, but does not destroy or reduce it.

Move contamination off site: Remove contaminated material (soil, groundwater etc.) and dispose of it or treat it elsewhere.

Treat contamination on site: Use a chemical or physical process on the site to destroy or remove the contaminants. Treated material can be left on site. Contaminants captured by the treatment process are disposed in an off-site hazardous waste facility.

EPA's proposed cleanup alternative for Beede incorporates all 4 options to reduce risks and protect human health and the environment. Specifically, the proposed plan will:

Take limited action by establishing institutional controls to restrict access to contaminated groundwater until drinking water standards are reached and by monitoring surface water.

Contain contamination in soils deeper than 10 feet in the SWRP 1 area and deeper than 2 feet in the solvent distillation area by by excavation of shallow contaminated soil and backfilling with clean materials.

Move contamination off-site for treatment or disposal of soil to a depth of 10 feet.

Treat contamination on-site through a groundwater extraction and treatment system and a soil vapor extraction system to remove VOCs only from soil deeper than 10 feet.

Impacts to the Floodplains & Wetlands

Section 404 of the Clean Water Act and Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) require a determination that federal actions involving dredging and filling activities or activities in floodplains or wetlands have the least adverse effects on the environment compared to other alternatives and that mitigation be carried out to the extent practicable. EPA has determined that there is no practicable alternative to the preferred alternative which would have less adverse impact on the floodplain or wetland. Each active alternative evaluated had some adverse impact on the floodplain and wetland through required excavation in these areas. Further, these areas have already been adversely impacted through prior activities at the site. Mitigation activities, such as erosion control, will be performed to minimize necessary impacts and the floodplain and wetland will be restored to the extent practicable.

Potential Impacts To The Community

The preferred alternative as described above could potentially have the following impacts on the community:

Air Quality:
Significant excavation will be required to remove about 80,000 cubic yards of soil. The soil does not contain a high level of volatile organic compounds, however air monitoring will be performed to protect workers and ensure that the surrounding neighborhood air quality is not impacted. Dust suppression methods will be employed as necessary.

Truck Traffic:
Significant truck traffic, possibly as many as 50 round-trips per work day, will be required throughout a minimum four month period. EPA will work with the community to determine the best route for minimizing traffic concerns and will notify the community before this activity begins.

Shallow Supply Wells:
Six shallow water supply wells in the immediate vicinity of the site, which are considered at risk of 'going dry' due to lowering of the groundwater table will be replaced with bedrock supply wells prior to the start-up of the groundwater extraction system. **Affected property owners will be notified during this comment period.**

Other Cleanup Alternatives Considered for the Beede Waste Oil Site

The Feasibility Study reviews all of the options EPA considered for cleanup, as well as those included in EPA's proposed cleanup plan. The options, referred to as "cleanup alternatives," are different combinations of plans to restrict access to, contain, move, or treat contamination to protect public health and the environment.

EPA developed five Source Control alternatives to address soil contamination (the source of contamination at the site), and three Management of Migration alternatives to address groundwater contamination (which allows contamination to spread away from the site).

During the comment period, EPA welcomes comments on the proposed cleanup plan as well as the other alternatives. Cleanup altermatives range from no action, in which no remedial physical actions are taken (other than minimal site monitoring and required maintenance of residential water treatment systems), to active treatment of soil and groundwater. The alternatives are summarized below. Please consult the Feasibility Study for more detailed information.

Common Actions. Many of the alternatives include common actions. Any source control alternative (except no action) will require that the ongoing non-time critical removal action be completed and the extraction wells be decommissioned. Any active source control alternative will address contaminated soil and sediment that is partially located in a wetland and floodplain area. Work performed in the wetland and floodplain will be consistent with appropriate wetland and floodplain regulations.

Any management of migration alternative (except no action) will require that monitoring of residential water supplies continue, that maintenance of existing water supply treatment systems continue and that new water supply treatment systems or wells be installed. Furthermore, institutional controls (e.g., deed restrictions) will be created to ensure that groundwater is not used for drinking water purposes until the water quality is restored to drinking water standards.

Soil Cleanup Alternatives:

Limited or No Action

Alternative SC-1*: No Action*
Leave the sie as it is. Contaminants would remain and continue to move from the site.
Estimated Time for Design and Construction: not applicable
Estimated Period for Operation: 100 years
Estimated Total Cost: $160,000

Alternative SC-2: *Limited Action*
Establish Site access restrictions/containment to reduce potential exposure to Site contaminants and/or reduce the mobility of contaminants. No active remediation. The existing fence would be extended along Kelly Brook to enclose Parcels 1 and 2 and would be subject to periodic maintenance; existing soil pile tarpaulins would be repaired and maintained; surface waters and sediments would be periodically monitored; Activity and Uses Restrictions (AURs) would be established, such as property deed restrictions which limit future Site use, and fishing restrictions in Kelley Brook.
Estimated Time for Design and Construction: 4 months
Estimated Period for Operation: 100 years
Estimated Total Cost: $2,000,000

Contain Contaminants

Alternative SC-3: *Hot Spot Removal, Capping and In-Situ Treatment*
Institutional/access controls, containment, and active soil/sediment remediation. Institutional/access controls include Site fencing and establishment of AURs generally similar to those included in SC-2. Future use of the former operations areas of the Site would be limited to non-residential use, including restrictions on soil excavation. Containment measures include covering surficial soils and re-graded soil piles with a 2-foot thick soil (permeable) cover. A hazardous waste cap constructed in accordance with the Resource Conservation and Recovery Act (RCRA) landfill capping standards would cover the on-site landfill. Surficial/shallow soil "hot spots" and sediments in Kelley Brook would be excavated and sent off-site for treatment / disposal. Wetlands would be restored in the landfill and sediment excavation areas. Deep soil (i.e., greater than 10 feet bgs) would be treated in-situ using thermally-enhanced soil vapor extraction (SVE) to address VOCs

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Other Cleanup Alternatives Considered for the Beede Waste Oil Site

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which are a continuing source of groundwater contamination. Natural attenuation for the solvent distillation unit area soils below a depth of 2 feet and for the deep (greater than a 10 foot depth) in the SWRP 1 area.
Estimated Time for Design & Construction: 15 months
Estimated Period for Operation: 2 years
Estimated Total Cost: $19,000,000

Move Contaminants Off Site

Alternative SC-4: ***Off-Site Treatment/Disposal***
All source areas (i.e., soil piles, surface/shallow, subsurface, and deep soils, the landfill and sediments) would be excavated and shipped off-site for treatment/disposal. This is similar to SC-5 (the preferred alternative) except that deep soils will be shipped off-site rather than treated in-situ. Hazardous materials would be shipped to a hazardous waste disposal facility and non-hazardous materials would be disposed of in a solid waste landfill. Subsequent to excavation, the Site would be backfilled with clean fill and restored with topsoil and a vegetative cover. Wetlands would be restored in the landfill and sediment excavation areas. Natural attenuation for the solvent distillation unit area soils below a depth of 2 feet and for the deep (greater than a 10 foot depth) in the SWRP 1 area.
Estimated Time for Design,Construction &Operation: 3 years
Estimated Total Cost: $43,000,000

Alternative SC-5: ***Off-Site Treatment/Disposal (0 to 10 feet bgs Soil) and In-Situ Treatment (>10 feet bgs Soil)***
This alternative is EPA's preferred Source Control alternative and is described on page 4.
Estimated Time for Design,Construction &Operation: 4 years
Estimated Total Cost: $33,000,000

Treat Contaminants On Site

Alternative SC-6A: ***On-Site Ex-Situ Thermal Treatment***
On-site ex-situ treatment of contaminated soil. Soil from the soil piles, surface/shallow, subsurface, and deep soils, and sediments would be treated in an on-site thermal desorption unit. Soil containing elevated concentrations of metals (e.g., lead), for which thermal treatment would not achieve cleanup goals, would be transported off-site for treatment/disposal, along with landfill solid waste and miscellaneous Site debris. Subsequent to excavation, the Site would be backfilled with clean fill and restored with topsoil and vegetative cover. Wetlands would be restored in the former landfill and sediment excavation areas. Natural attenuation for the solvent distillation unit area soils below a depth of 2 feet and for the deep (greater than a 10 foot depth) in the SWRP area.
Estimated Time for Design, Construction & Operation: 5 Years
Estimated Total Cost: $57,000,000

Alternative SC-6B: ***On-Site Ex-Situ Thermal Treatment (Soil 0 to 10 feet bgs), and In-Situ Treatment (Soil >10 feet bgs)***
In-situ treatment of the deep soils via SVE. The balance of the soil contamination would be addressed in a manner consistent with Alternative SC-6A. Soil between 0 and 10 feet in depth, the soil piles and sediments would be treated in an on-site thermal desorption unit and soil containing elevated concentrations of metals (e.g., lead), for which thermal treatment would not achieve cleanup goals, would be transported off-site for treatment/disposal, along with landfill solid waste and miscellaneous Site debris. Wetlands would be restored in the landfill and sediment excavation areas. Similar to Alternatives SC-3 through SC-6A, SC-6B includes natural attenuation for the solvent distillation unit area soils below a depth of 2 feet and for the deep (greater than a 10 foot depth) in the SWRP 1 area.
Estimated Time for Design, Construction & Operation: 6 Years
Estimated Total Cost: $44,000,000

Management of Migration Alternatives:

Limited or No Action

Alternative MOM-1: ***No Action***
This alternative was evaluated in detail in the FS to serve as a baseline for comparison with the other remedial alternatives under consideration. The No Action Alternative is used as a means of identifying problems posed by the Site if no remedial actions are implemented to address groundwater contamination. No active measures are taken to address groundwater contamination at the Site beyond the continuation of current maintenance and monitoring measures including: annual groundwater monitoring of approximately sixteen monitoring wells in downgradient portions of the contaminated groundwater plumes, as well as maintenance and repair of these wells; maintenance of the existing water supply treatment units

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Other Cleanup Alternatives Considered for the Beede Waste Oil Site

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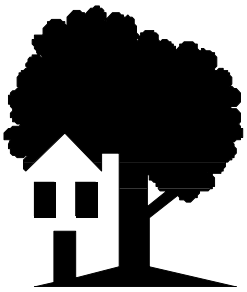
and installation and maintenance of up to two additional watter supply treatment units for residential wells; periodic sampling and analysis of residential water supply wells in the Site vicinity.
Estimated Time for Design and Construction: 1 month
Estimated Period for Operation: 100 years
Estimated Total Cost: $1,900,000

Alternative MOM-2: *Limited Action*
Long-term groundwater sampling and analysis to monitor contaminant concentration and migration, and additional access controls and groundwater use deed restrictions to prevent the use of contaminated groundwater as drinking water. No active remediation (beyond maintenance of existing water supply treatment units). The existing fence would be extended and maintained along Kelly Brook to enclose Parcels 1 and 2. A Groundwater Management Zone (GMZ) would be established and deed restrictions prohibiting the use of untreated contaminated groundwater for potable purposes; semi-annual monitoring of approximately fifty groundwater monitoring wells as well as maintenance and repair of these wells; maintenance of the existing water supply treatment units and installation and maintenance of up to two additional water treatment units for residential wells; periodic sampling and analysis of residential water supply wells in the Site vicinity.
Estimated Time for Design and Construction: 6 months
Estimated Period for Operation: 100 years
Estimated Total Cost: $5,600,000

Treat Contaminants On Site

Alternative MOM-3: *Groundwater Collection and Treatment (High Pumping Rate)*
This alternative is EPA's preferred Management of Migration alternative and is described on page 4.
Estimated Time for Design and Construction: 2 years
Estimated Period for Operation: 15 years
Estimated Total Cost: $15,000,000

Alternative MOM-4: *Groundwater Collection and Treatment (Low Pumping Rate):*
In addition to the measures proposed under MOM-2, this would include groundwater collection and treatment in the vicinity of the source areas and receptors but at a lower pumping rate than MOM-3. Similar to MOM-3, natural attenuation is proposed for selected plumes. A less aggressive (80 gallons per minute design capacity; 35 gallons per minute sustained) approach with potentially lower capital and annual costs than MOM-3. The treated groundwater would be discharged on-site to the aquifer through an underground recharge bed. The on-site recharge would assist in flushing the contaminated groundwater through the soil to an extraction trench for further treatment.
Estimated Time for Design and Construction: 2 years
Estimated Period for Operation: 35 years
Estimated Total Cost: $15,000,000



The Nine Criteria for Choosing a Cleanup

Nine criteria are used to evaluate the cleanup alternatives and select a remedy. Of the nine, protection of public health and compliance with ARARs are considered threshold requirements that must be met by the selected remedy. EPA balances its consideration of alternatives with respect to long-term effectiveness and permanence; reductions of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. State and community concerns are modifying criteria and may prompt EPA to modify the preferred alternative or choose another alternative. Following are definitions of the nine criteria and a summary of EPA's evaluation of the alternatives. The Feasibility Study contains a complete analysis.

1. Overall protection of human health and the environment: Will it protect you and the plant and animal life on and near the site? EPA will not choose a plan that does not meet this basic criterion.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): Does the alternative meet all federal and state environmental statutes, regulations and requirements?

3. Long-term effectiveness and permanence: Will the effects of the cleanup plan last or could contamination cause future risk?

4. Reduction of toxicity, mobility or volume through treatment: Does the alternative reduce the harmful effects of the contaminants, the spread of contaminants, and the amount of contaminated material?

5. Short-term effectiveness: How soon will site risks be adequately reduced? Could the cleanup cause short-term hazards to workers, residents or the environment?

6. Implementability: Is the alternative technically feasible? Are the right goods and services (i.e. treatment machinery, space at an approved disposal facility) available for the plan?

7. Cost: What is the total cost of an alternative over time? EPA must find a cost-effective plan that gives necessary protection.

8. State acceptance: Do state environmental agencies agree with EPA's proposal?

9. Community acceptance: What objections, suggestions or modifications does the public offer during the comment period?

Evaluation of Alternatives

EPA uses nine criteria to balance the pros and cons of cleanup alternatives. EPA has already evaluated how well each of the cleanup alternatives meets the first seven criteria (See summary table on page 12), and once comments from the state and the community are received, EPA will select the final cleanup plan.

1. Overall Protection of Human Health and the Environment: SC-1, SC-2, MOM-1 and MOM-2 would not meet this criteria. Exposure to contaminated soil and groundwater would remain and contaminants would continue leaching from the soil to the groundwater. SC-3 would not be protective in the residential reuse scenario. SC-4, SC-5 and SC-6 would provide protection. Alternatives MOM-3 and MOM-4 provide equal protection, however, due to a greater groundwater extraction rate, MOM-3 would take 15 years and MOM-4 would take 35 years.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs): With the exception of the no action alternatives (SC-1 and MOM-1) and the limited action alternatives (SC-2 and MOM-2), all other alternatives would meet all ARARs. SC-3 would not clean up to residential standards.

3. Long-term Effectiveness and Permanence*:* SC-1 and SC-2 would not ensure long-term protection to human health and ecological receptors. Alternative SC-3 would not protect human health in the residential reuse scenario and burrowing organisms could be exposed to subsurface contaminated soil. SC-4, SC-5 and SC-6 provide reliable permanent protection to human health and ecological receptors from direct contact to contamination. MOM-1 does not include any remedial measures and there is no decrease in risks. The institutional controls in MOM-2, MOM-3 and MOM-4 require ongoing maintenance, monitoring and enforcement. Alternatives MOM-3 and MOM-4 provide greater long-term effectiveness and eliminate unacceptable levels of risk through groundwater extraction and treatment.

4. Reduction of Toxicity, Mobility, or Volume through Treatment: SC-1, SC-2, MOM-1 and MOM-2 provide no reduction in toxicity, mobility or volume as no active remedial measures are involved (beyond the use of home water supply treatment units). Alternatives SC-3, SC-4, SC-5, and SC-6 include the off-site treatment/disposal of soils in varying quantities. SC-3, SC-5, SC-6, MOM-3 and MOM-4 include on-site treatment measures that will generate treatment residuals such as activated carbon, organic liquids and sludge which will need to be shipped off-site for treatment / disposal.

5. Short-term Effectiveness: SC-1, SC-2, MOM-1 or MOM-2 are not anticipated to pose additional risks or impacts to the local community or environment beyond those posed by current Site conditions. SC-3, SC-4, SC-5, SC-6, MOM-3 and MOM-4 involve varying degrees of excavation of contaminated media, earth moving, backfilling and a commensurate amount

continued on page 11

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of truck traffic. SC-4 involves the greatest amount of truck traffic. Potential fugitive dust and/or VOC emissions would be controlled by engineering measures. Shallow residential wells, potentially impacted by groundwater extraction in Alternatives MOM-3 and MOM-4 will have deeper wells installed. Erosion control measures and wetland restoration actions will address potential and real impacts to Kelley Brook/wetlands.

6. Implementability: SC-1 and MOM-1 are readily implemented due to the limited nature of the actions involved. SC-2, 3 and MOM-2, 3 and 4 require the use of institutional controls which can be administratively difficult to obtain. The hot-spot soil/sediment excavation, wetlands restoration/construction and soil cover/landfill cap construction included in Alternative SC-3 are readily implemented. The magnitude of the excavation activities, particularly for SC-4 and SC-6A, may require multiple construction seasons. Specialized personnel are required for the setup and operation of on-site ex-situ indirectly-heated thermal desorption systems proposed in SC-6A and SC-6B, and the design, construction and operation of thermally-enhanced SVE systems proposed in SC-5 and SC-6B. The groundwater extraction and treatment systems included as part of MOM-3 and MOM-4 consist of proven and reliable methods and components.

7. Cost: The preferred source control alternative (SC-5) is the least costly of the alternatives which remediate the soils sufficiently to support future residential use of the site. Although the preferred management of migration alternative (MOM-3) is similar in cost to MOM-4, it will restore groundwater quality in less than one-half the time.

8. State Acceptance: NHDES has reviewed and approved the FS and preferred alternative for the site. Formal state acceptance will be assessed following the public comment period.

9. Community Acceptance: Community acceptance will be evaluated based on comments received.

For More Information

If you have any questions about the Site or would like more information, you may call or write to:

Jim DiLorenzo
Remedial Project Manager
USEPA New England
One Congress Street, Suite 1100 (HBO)
Boston, MA 02114-2023
(617) 918-1247
dilorenzo.jim@epa.gov

or

Angela Bonarrigo
Community Relations Coordinator
USEPA New England
One Congress Street, Suite 1100 (HBS)
Boston, MA 02114-202311
(617) 918-1034
bonarrigo.angela@epa.gov

Why Does EPA Recommend this Proposed Plan?

Based on current information and analysis of the RI and FS reports, EPA recommends a cleanup plan that recognizes the nature of this predominately residential community and balances the need to aggressively restore Site conditions with the desire to minimize impacts to the neighborhood.

In EPA's estimation, the preferred alternative will achieve the best balance among the criteria used by EPA to evaluate the alternatives. The preferred alternative will provide short- and long-term protection of human health and the environment, will attain all Federal and state applicable or relevant and appropriate public health and environmental requirements, will reduce the mobility and toxicity of contaminated groundwater, and will utilize permanent solutions to the maximum extent practicable and is less costly than on-site treatment.

Next Steps:

Early next year, EPA expects to have reviewed all comments and sign the Record of Decision document describing the chosen cleanup plan. The Record of Decision and a summary of responses to public comments will then be made available to the public at the site information repositories listed on page 13, as well as on the Beede Web site.

Comparison of Cleanup Alternatives

Nine Criteria	SC-1 no action	SC-2 limited action	SC-3 hot spot removal, capping & in-situ treatment	SC-4 off-site treatment / disposal	✻SC-5 off-site treatment / disposal & on-site in-situ treatment	SC-6A on-site treatment SC-6B with in-situ treatment	MOM -1 no action	MOM -2 limited action	✻MOM -3 groundwater collection & treatment (high pumping rate)	MOM -4 groundwater collection & treatment (low pumping rate)
protects human health and environment	○	○	○	●	●	●	○	○	●	●
meets federal and state requirements	○	○	◒	●	●	●	○	○	●	●
provides long term protection	○	○	○	●	●	●	○	◒	●	●
reduces mobility, toxicity and volume	○	○	◒	◒	◒	◒	○	○	◒	◒
provides short-term protection	●	●	◒	◒	◒	◒	●	●	◒	◒
implementable	●	◒	◒	◒	◒	◒	●	◒	◒	◒
cost	160,000	2 million	19 million	43 million	33 million	57 million ▪▪▪ 44 million	1.9 million	5.6 million	15 million	15 million
state agency acceptance	**to be determined after the public comment period**									
community acceptance	**to be determined after the public comment period**									

● Meets or Exceeds Criterion ◒ Partially Meets Criterion ○ Does NOT Meet Criterion ✻ EPA's Preferred Alternative

What is a Formal Comment?

During the 60-day formal comment period, EPA will accept formal written comments and hold a hearing to accept formal verbal comments. EPA uses public comments to improve the cleanup proposal.

To make a **formal** comment you need only speak during the public hearing on **Wednesday, July 17, 2002** or submit a written comment during the comment period, which ends on August 18, 2002.

Federal regulations require EPA to distinguish between "formal" and "informal" comments. While EPA uses your comments throughout site investigation and cleanup, EPA is **required to respond to formal comments on the proposed plan in writing only.** EPA will not respond to your comments during the formal hearing on **Wednesday, July 17, 2002.**

The fact that EPA responds to formal comments in writing only does not mean that EPA cannot answer questions. Once the meeting moderator announces that the formal hearing portion of the meeting is closed, EPA can respond to informal questions.

EPA will review the transcript of all formal comments received at the hearing, and all written comments received during the formal comment period, before making a final cleanup decision. EPA will then prepare a written response to all the formal written and oral comments received.

Your formal comment will become part of the official public record. The transcript of comments and EPA's written responses will be issued in a document called a Responsiveness Summary when EPA releases the final cleanup decision.

Other Matters

Preliminary TSCA 761.61(c) Determination

Consistent with Section 761.61(c) of the Toxic Substances Control Act (TSCA), Robert W. Varney, Regional Administrator, EPA Region 1, has reviewed the current Administrative Record for the Beede Waste Oil Superfund Site and considered the proposal for offsite disposal of polychlorinated biphenyl (PCB) contaminated soil and sediment set out in the Feasibility Study, as summarized in this Proposed Plan. As required by this section of TSCA, EPA has determined that the Proposed Plan proposal to transport excavated PCB contaminated soil and sediment offsite for disposal does not pose an unreasonable risk to human health or the environment as long as the following conditions are met:

1. All excavated soil and sediment is disposed of in accordance with TSCA and based on in-place PCB levels, not subject to dilution.

2. Protocols, developed in accordance with TSCA, will be developed and maintained for the following activities:
   a. Sampling of all excavated material prior to offsite transportation
   b. Best efforts are used to decontaminate all equipment used when handling TSCA contaminated material to avoid mixing with non-TSCA material.

3. Stockpiled material shall be bermed while awaiting transport to capture runoff. Runoff shall be collected and either treated at the site groundwater treatment plant or disposed offsite, as appropriate.

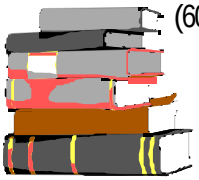
4. Air monitoring, and dust suppression measures for PCBs, as described in the Proposed Plan, shall be maintained until excavation and transport of PCB contaminated soil and sediment is complete. Groundwater monitoring for PCBs will be maintained until it is shown that PCBs are not present in groundwater at a level to pose a risk to human health and the environment.

EPA will consider all public comments received during the public comment period prior to issuing a final TSCA determination.

For More Detailed Information

To help the public understand and comment on the proposal for the site, this publication summarizes a number of reports and studies. All of the technical and public information publications prepared to date for the site are available at the at the following information repositories:

Plaistow Public Library
85 Main Street
Plaistow, NH 03865
(603) 382-6011



EPA Records Center
1 Congress Street
Boston, MA 02114
Please call to schedule an appointment
(617) 918-1440

Information is also available for review on the world wide web at:
www.epa.gov/region01/superfund/sites/beede

All documents may be downloaded and printed. Adobe Acrobat Reader is required.

Send us Your Comments

You may provide EPA with your written coments about the proposed plan for the Beede Waste Oil Site. You can use the form below to send written comments. Please mail this form and any additional written comments, postmarked no later than August 18, 2002 to:

Jim DiLorenzo

U.S. EPA

1 Congress St., Suite 1100 (HBO)

Boston MA 02114

fax: 617-918-1291

e-mail: dilorenzo.jim@epa.gov

Comments Submitted by: _____ (attach additional sheets as needed)

public comment sheet (continued)

Fold, staple, stamp, and mail

place stamp here

Mr. Jim DiLorenzo
US EPA
1 Congress Street, Suite 1100 (HBO)
Boston , MA 02114-2023

<u>ERRATA SHEET</u> - <u>BEEDE WASTE OIL SUPERFUND SITE</u>
CORRECTION TO TSCA COMPLIANCE STATEMENT IN PROPOSED PLAN
ISSUED JUNE, 2002

There is a printing error on page 13 of the Proposed Plan for the Beede Waste Oil Superfund Site, in the box titled "Other Matters." Please replace the information in that box with the following corrected information. Note that the Proposed Plan was mailed to all PRPs and community contacts in early June, 2002.

The following statement is an example of language that will appear in the <u>Record of Decision</u> for the Beede Waste Oil Superfund Site concerning the proposed remedy's compliance with TSCA. The Record of Decision, memorializing the final remedy selection for Beede, will be issued after the notice and comment period for the Proposed Plan closes and EPA has had a chance to review and respond to all comments received.

Other Matters

TSCA 761.61(c) Determination

Consistent with Section 761.61(c) of the Toxic Substances Control Act (TSCA), [the Regional Administrator, EPA Region 1], has reviewed the current Administrative Record for the Beede Waste Oil Superfund Site and considered the proposal for offsite disposal of polychlorinated biphenyl (PCB) contaminated soil and sediment set out in the Feasibility Study and Proposed Plan, as summarized in the Record of Decision for the Beede Site. As required by this section of TSCA, EPA has determined that the selected remedy, as described in the Record of Decision for Beede, to transport excavated PCB contaminated soil and sediment offsite for disposal does not pose an unreasonable risk to human health or the environment as long as the following conditions are met:

1. *All excavated soil and sediment is disposed of in accordance with TSCA and based on in-place PCB levels, not subject to dilution.*

2. *Protocols, developed in accordance with TSCA, will be developed and maintained for the following activities:*
   a. *Sampling of all excavated material prior to offsite transportation; and*
   b. *Best efforts are used to decontaminate all equipment used when handling TSCA contaminated material to avoid mixing with non-TSCA material.*

3. *Stockpiled material shall be bermed while awaiting transport to capture runoff. Runoff shall be collected and either treated at the site groundwater treatment plant or disposed offsite, as appropriate.*

4. *Air monitoring, and dust suppression measures for PCBs, as described in the Proposed Plan, shall be maintained until excavation and transport of PCB contaminated soil and sediment is complete. Groundwater monitoring for PCBs will be maintained until it is shown that PCBs are not present in groundwater at a level to pose a risk to human health and the environment.*

Note that EPA will consider all public comments received during the public comment period for the Proposed Plan prior to issuing a final TSCA determination in the Record of Decision, which may issue in early 2003.