



## Preliminary Reuse Assessment

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# Hows Corner Superfund Site



Office of Site Remediation and Restoration  
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## PURPOSE OF THIS DOCUMENT

EPA New England is responsible for the cleanup of over 100 Superfund sites throughout New England. Although protecting human health and the environment is the primary objective of those cleanups, EPA also recognizes the value in helping to return Superfund sites to beneficial reuse. Understanding the current and likely future uses of a site is fundamental to achieving both of these objectives.

To establish cleanup standards and design a protective remedy, it is necessary to first determine how the site and immediate surroundings will be used. That information is then used to make reasonable assumptions about potential exposures to contaminants. For this reason, the types of site use, as well as the level of certainty regarding those uses, can have a dramatic impact on the final remedy and associated project costs.

This Preliminary Reuse Assessment summarizes information about current and future land uses at the subject site that was readily available to the EPA case team. It is intended to be the basis for working with local communities, property owners and other stakeholders to develop a more complete and realistic understanding of site use. This collective information will help support EPA's decisions regarding appropriate response actions at the site, including the consideration of site use/reuse in the design and implementation of the site cleanup. For information on site reuse to be effectively considered, however, it must be available early in the remedial process and be known with sufficient detail and certainty. Where uncertainty regarding potential reuse options exists, EPA hopes to encourage and assist, as practical, local efforts to resolve those uncertainties.

The Preliminary Reuse Assessment is presented in three sections:

- **Section 1 - Site Background:** Describes the physical, environmental, and historical context of the site, particularly as it applies to current and potential future uses;
- **Section 2 - Reuse Status:** Summarizes the current uses and identifies some potential reuse issues and considerations associated with individual areas of the site; and
- **Section 3 - Site-Specific Planning & Implementation Support:** Identifies some specific actions EPA plans to take to work with stakeholders and other parties to resolve remaining questions about future site use.

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## SECTION 1 - SITE BACKGROUND

### General Description

The West Site/Hows Corner Superfund site is a 17-acre wooded lot on Sawyer Road in Plymouth, Maine (near Hows Corners) owned by George West and the surrounding area where groundwater contamination has come to be located. The West property consists of a partially grassy clearing, approximately 150 by 200 feet, with occasional bedrock outcrops that run north-south. A small, unnamed pond and associated wetlands are also located on the site. The site is situated on a slight rise in an area that is otherwise relatively flat. The area surrounding the West property is rural residential with mixed woods and open fields, with the closest residence approximately 100 feet to the south.

The West property is located on Lot #27 of the town of Plymouth parcel map. A two-acre portion of this parcel was used by a waste oil company for its operations. This property is currently inactive and there are no buildings or other structures. See figures 1 and 2.

### QUICK FACTS

**Location:** Campbell & Sawyer Roads  
Plymouth, Maine  
(Penobscot County)  
(See Figures 1 & 2)

**ID Number:** MED985466168

**Site Area:** 17 acres +

**Number of Parcels:** 1

**Current Uses:** Currently vacant;  
former waste oil storage  
and transfer facility

**Ownership:** Private; in Tax Arrears

**Cleanup Status:** Study Underway;  
Remedy Proposed

**EPA Contact:** William Lovely  
(617) 918-1240

### Environmental History/Status

**► Past Site Operations:** The former owner operated the site as a waste oil storage and transfer facility from 1965 to 1980 in affiliation with the Portland/Bangor Waste Oil Company (PBWO). Waste oil, delivered by PBWO tank trucks, was stored on site in approximately eight 1,000 to 20,000 gallon storage tanks. PBWO collected, transported, and deposited unknown quantities of waste oil from military bases, auto dealerships, municipalities, local garages, bulk transportation companies, industries, and utility companies. Oil was stored in tanks; the company then sold the lighter oil for fuel and the heavier oils for dust control on dirt roads. PBWO company records indicate that the waste stored on the site was predominantly composed of used motor oils and industrial lubricating oil; however, because of the varied types of facilities contributing waste, the exact elements of the oils are unknown. In 1980, PBWO ceased operations at the site and PBWO cut up the tanks on site and sold them to a scrap metal dealer. No waste oil activities are known to have take place after the tanks were removed. When EPA performed a routine site inspection in 1988, the only waste source was contaminated soil. An alternate water supply system has been installed serving 36 residences as residential well water supplies have been contaminated.

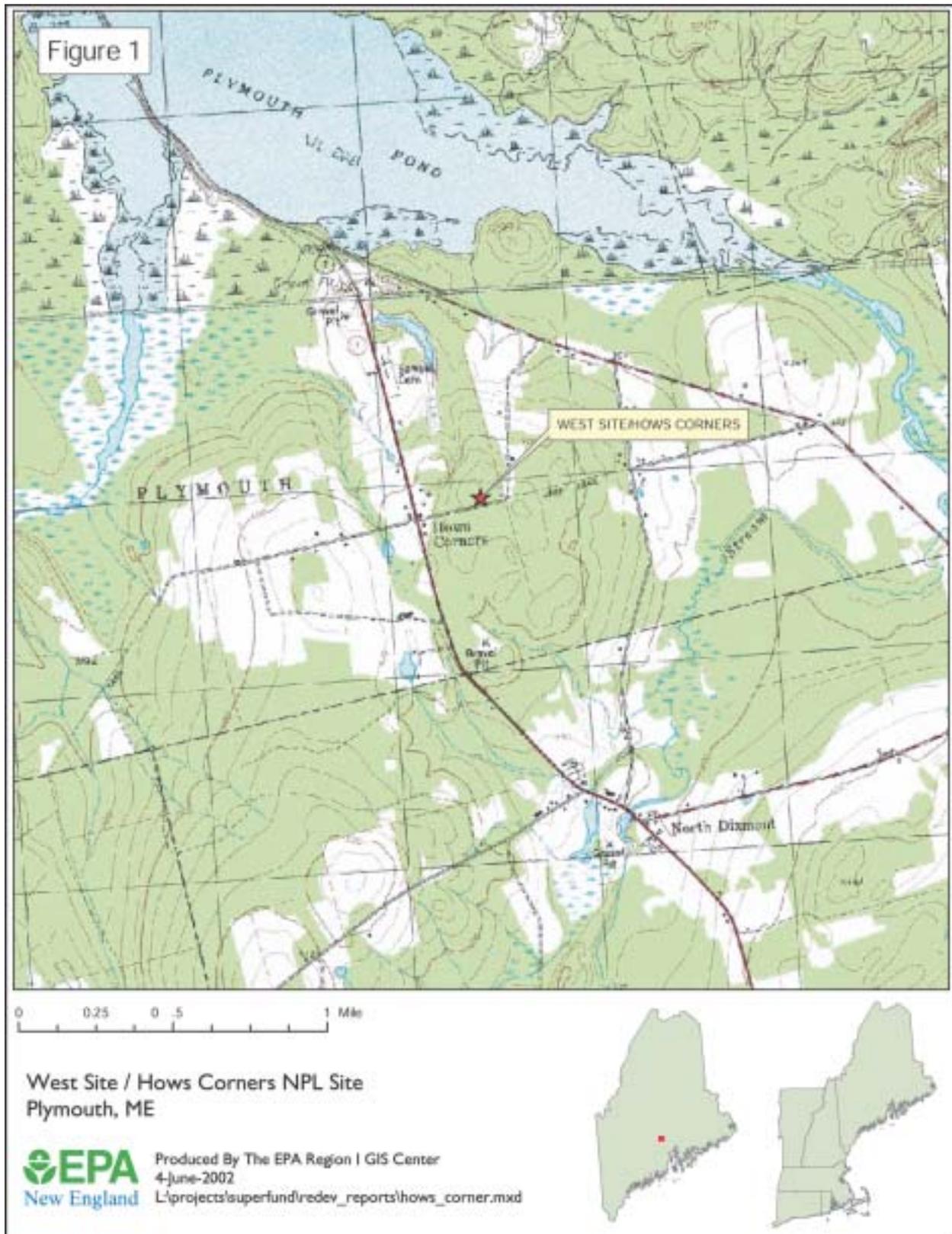
**Description of Operable Units:** Often, Superfund sites are partitioned into distinct study areas called "operable units". The boundaries of these operable units are generally based on environmental considerations (e.g., a major source area, a groundwater plume, etc.) and do not necessarily reflect property boundaries. The West Site/Hows Corner site has been divided into two separate units, one representing the "non-source area" groundwater (Operable Unit I) and "source area" groundwater (Operable Unit II). A proposed cleanup plan for Operable Unit I was released in July 2002 (see below for additional information); while further investigation regarding cleanup of Operable Unit II is still needed.

**Site Contamination/Risk Assessment:** The groundwater at the site has become contaminated by spills to the ground during the handling of waste oils within the 2-acre

## CHRONOLOGY OF KEY EVENTS

- **1965** - George West opens a waste oil storage and transfer facility on a 2-acre area of the 17-acre property.
- **1980** - Facility ceases operation.
- **1987** - Contamination discovered after a residential well was sampled as part of a potential property transfer. Consequently, Maine DEP tested nearby wells and provided bottled water and filters to those residents whose private wells were contaminated by past site activities.
- **March 1990** - Maine DEP completed a preliminary investigation. Organic chemicals (VOCs, SVOCs, and PCBs,) were found in both soils and groundwater underlying the site.
- **July 1990** - Maine DEP requested EPA assistance to install a permanent safe drinking water supply.
- **November 1990** - EPA fenced the 2-acre source area of the site;
- **1991** - 847 tons of contaminated soils within two-acre portion of the site were removed.
- **1993** - EPA commenced construction of a permanent water supply to provide potable water to properties with contaminated drinking water supplies.
- **1995** - EPA finalized site placement on the National Priorities List (NPL).
- **2001** - Remedial Investigation (RI) completed.
- **2002** - Feasibility Study (FS) completed; EPA issues proposed cleanup plan for Operable Unit I.

► Fig. 1



fenced area of the site as well as by other unacceptable operating practices. The contamination migrated from the soil into the bedrock aquifer. Thereafter, the contamination moved according to groundwater flow paths which can be greatly influenced by the orientation of the fractures in the bedrock and the proximity of pumping wells in the vicinity of the contamination. For the Hows Corner site, the pumping of residential wells has drawn the contamination along the direction of the bedrock fractures by private water supply wells which resulted in the contamination of those locations that are now served by the water line.

Between 1999 and 2001, a Remedial Investigation (RI) (Woodard & Curran, 2001) was performed at the Hows Corner site to determine the nature and extent of contamination as well as to determine any risks posed by the contamination to human health and the environment. Investigations for the following major areas were completed as part of the RI: groundwater underlying the 17-acre George West property and surrounding areas where the contamination has come to be located; contaminated soils within the 2-acre fenced area that were not removed as part of the 1990-91 removal action (see "Cleanup Actions to Date" below for more information); and soils, wetlands, surface water bodies (e.g., ponds, streams), groundwater, and sediments in all potentially impacted areas outside of the 2-acre fenced area.

Groundwater represents the major source of drinking water in the area and also discharges to Plymouth Pond and other nearby surface water bodies. Contamination was found in both the groundwater and surface water at the site. Surface water flows from the 2-acre fenced area north towards Plymouth Pond and to the south towards Martins Stream, which eventually discharges towards Plymouth Pond. Groundwater flows predominantly within the bedrock and is controlled by the nature, frequency and distribution of fractures naturally occurring within the bedrock. Volatile organic compounds (VOCs), primarily perchloroethylene (PCE) in groundwater and polychlorinated biphenyls (PCBs) in soil, were identified as the significant remaining contaminants related to past waste oil facility operations. The contaminated groundwater plume has reached its maximum extent. Field data and groundwater modeling show that groundwater flows away from the 2-acre fenced area in all directions and discharges to the surface in many small spring fed ponds and to the surface on the flanks of the hill around the 2-acre fenced area. Groundwater flow becomes restricted at increased depths and to the west of the site as the rock becomes less weathered. A remnant dense non-aqueous phase liquid (DNAPL) source is believed to be entrapped within the fractures of the bedrock aquifer where the concentration of PCE is in excess of 10 ppm. Plymouth Pond is not being unacceptably impacted by contamination from the site. However, it is likely that low levels of contamination are migrating from the groundwater to the wetlands of Plymouth Pond. Contaminated groundwater underlies a number of properties surrounding the 17-acre George West property. No one is currently being exposed to contaminated groundwater; however continued use of the groundwater as a drinking water source could result in people being exposed to unsafe levels of contaminants at some time in the future. Any well installed within the groundwater plume limits has the potential to be impacted by site related contaminants (e.g., PCE, trichloroethylene (TCE), and PCBs). In addition, new wells could cause the existing groundwater plume to expand beyond its current boundary. Surface water and sediments in nearby ponds, streams, and wetlands are not being unacceptably impacted by site related contaminants. Figure 3 shows the conceptual migration pathway for the contamination and the general areas of both source area and non-source area groundwater.

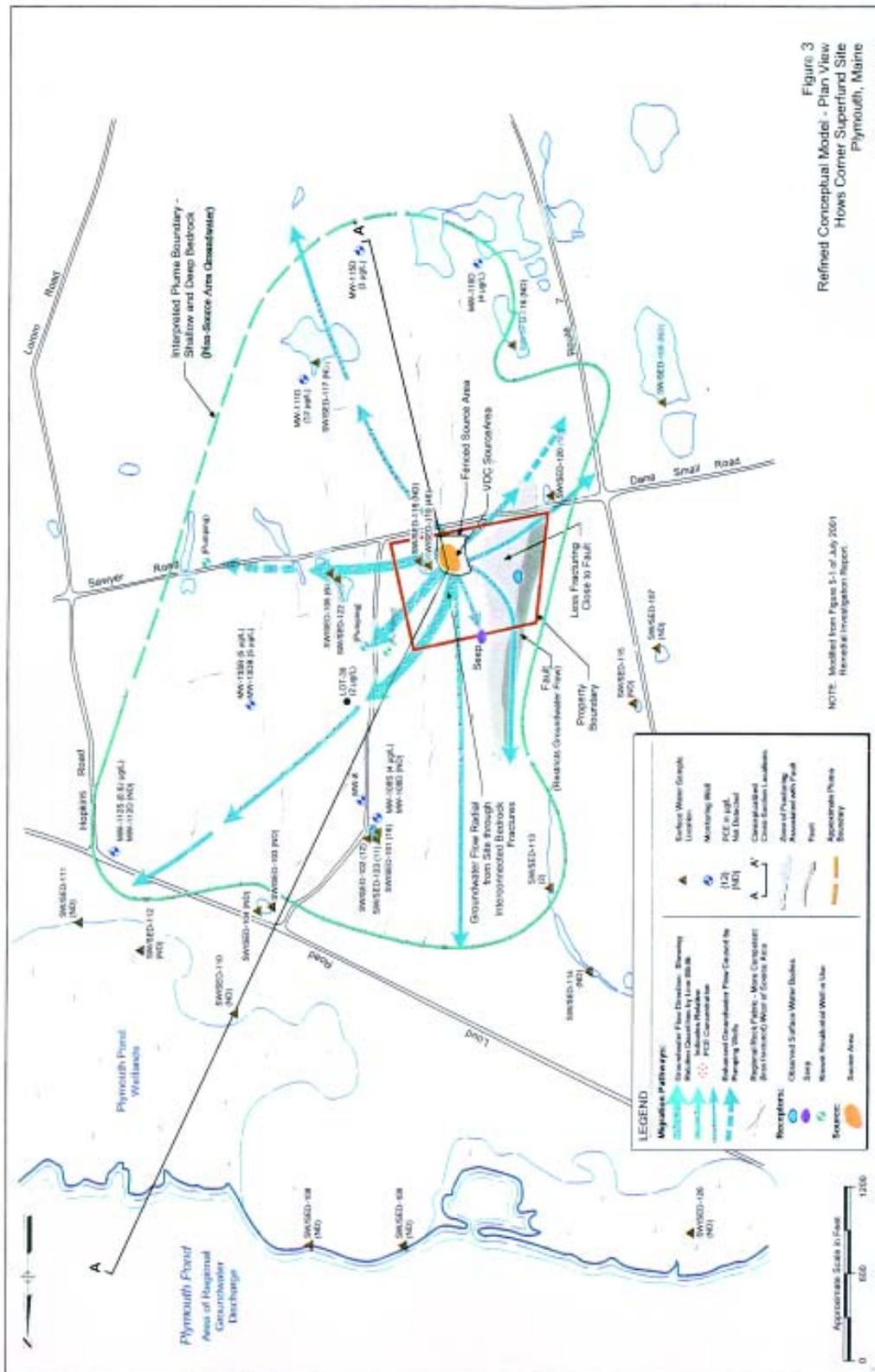


View of 2-acre cleared portion of Site (Looking North)

► Fig. 2



► Fig. 3



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Woodard & Curran, consultants to the PRP group performing the studies at the site, used the results of the remedial investigation program to complete human health and environmental risk assessments. These reports evaluate the potential adverse effects from long-term exposure to the contamination detected at the site. Based on the human health and ecological risk assessments, EPA has identified the need for cleanup actions for groundwater and soils beyond the 1990-91 and 1995 removal actions (i.e., soil disposal, water line installation). The 1991 removal action addressed most of the contaminated soil above the bedrock. However, due to the high levels of contaminants within the bedrock below the 2-acre fenced area, PCE and other contaminants will remain in the groundwater until this secondary source of groundwater contamination is either removed or isolated from the bedrock aquifer.

Groundwater is contaminated at levels that would threaten human health if the groundwater were to be used as a source of drinking water. The potential presence of DNAPLs within source area groundwater will continue to act as a source of groundwater contamination. Changes in current groundwater use patterns could result in the further migration of groundwater contaminants. The contaminated groundwater is discharging into the surrounding wetlands and surface water bodies and will continue to pose a threat to surface water if not controlled.

Based on the results of the human health and ecological risk assessments, remedial alternatives were considered for contaminated soil within the 2-acre fenced area of the site where concentrations of lead and PCBs were above levels considered to be protective. However, because these soils were removed from the site in 2001 during a groundwater cleanup pilot study, soils remaining in the 2-acre fenced area no longer pose an unacceptable risk. Details of this pilot study can be found in the Feasibility Study (FS) (Woodard & Curran, 2002).

EPA has determined that a groundwater cleanup is required in order to reduce risk at the site. A cleanup plan was proposed in July 2002 (see "Planned Site Remedy" below for more detailed information) to:

1. prevent the use of groundwater containing contaminants that exceed federal or state maximum contaminant levels (MCLs), non-zero maximum contaminant level goals (MCLGs), maximum exposure guidelines (MEGs), or in their absence, an excess cancer risk of  $1 \times 10^{-6}$  or a hazard quotient of 1;
2. contain source area groundwater within the 2-acre fenced area of the site;
3. restore groundwater outside of the 2-acre fenced area of the site (i.e., non-source area groundwater) to meet cleanup goals; and,
4. perform long-term monitoring of surface water, sediments, and groundwater to verify that the cleanup actions at the site are protective of human health and the environment.

**►Cleanup Actions to Date:** Removal actions in 1991 and 1995 addressed most of the contaminated soil above the bedrock. However, due to the high levels of contaminants within the bedrock below the 2-acre fenced area, PCE and other contaminants will remain in the groundwater until this secondary source of groundwater contamination is either removed or isolated from the bedrock aquifer. Soils were also removed from the site in 2001 during a groundwater cleanup pilot study. Figure 4 shows the locations of soil contamination, excavation, and tanks removed during prior cleanup actions.

► **Planned Site Remedy:** EPA plans to implement the cleanup of this site in two phases. The site is defined as the entire 17-acre parcel of land owned by George West and the surrounding area where groundwater contamination has come to be located. The cleanup plan proposed in July 2002 is intended to be the first phase of the long-term groundwater cleanup action at the How's Corner Superfund site. This first phase of cleanup activity, or Operable Unit I, targets non-source area groundwater which is defined as groundwater underlying the 17-acre George West property and surrounding area where VOCs are detected in concentrations below 10 parts per million (ppm). A second phase of groundwater cleanup action for Source Area Groundwater (Operable Unit II) will be described in a future proposed plan. This second phase will target source area groundwater which is defined as groundwater underlying the 2-acre fenced area of the site where VOCs are detected in concentrations at or above 10 parts per million (ppm). Because of the potential that DNAPL may be located in this part of the groundwater plume, the ability to restore this groundwater to state and federal standards is uncertain at this time. A further evaluation of the technical practicability of the restoration potential of source area groundwater will be studied in advance of this second phase of the cleanup activity.

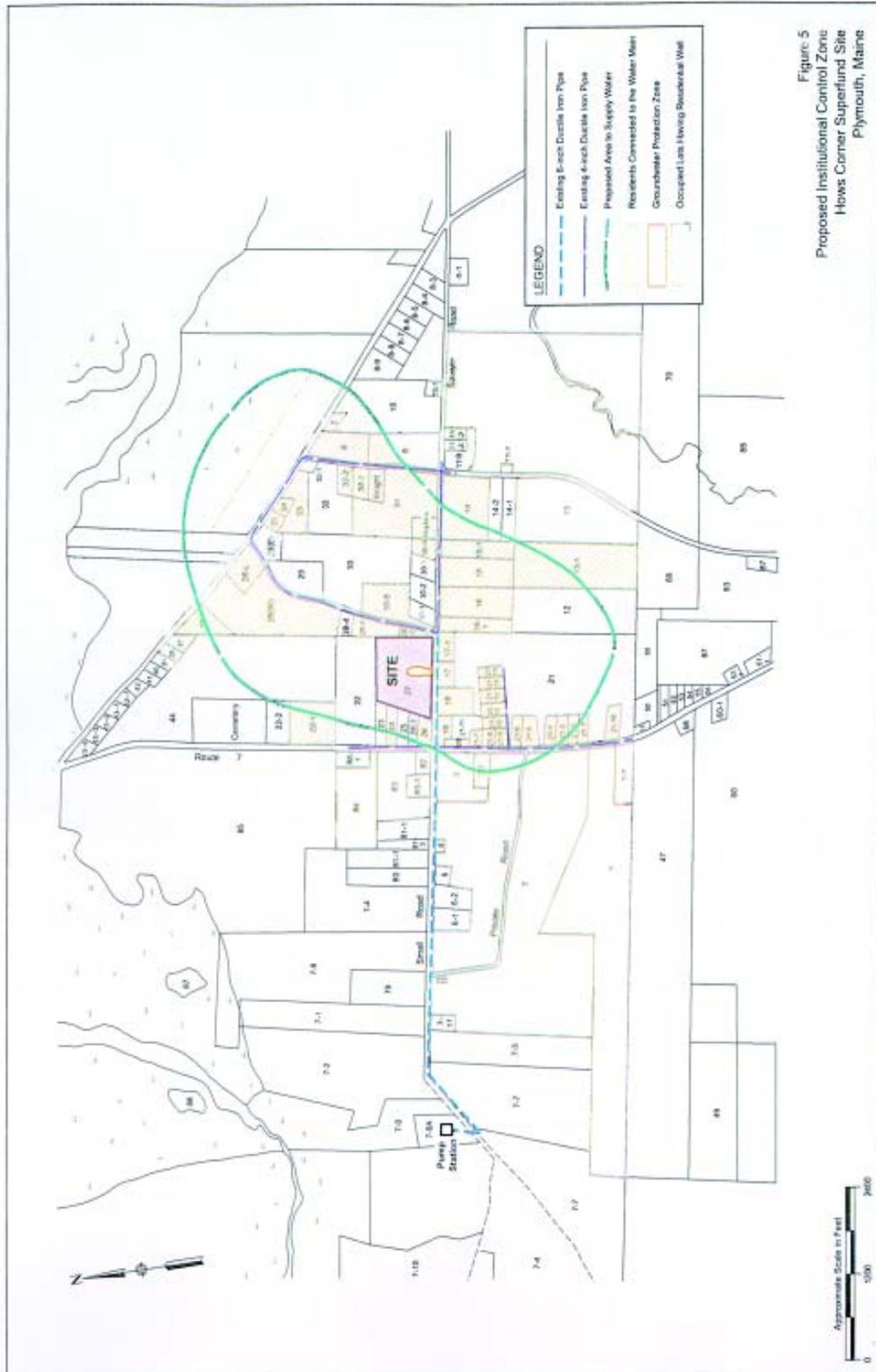
The current proposed remedy (EPA, 2002) calls for the following steps:

1. Perform engineering studies to determine the exact number and location of groundwater extraction and re-injection wells and collect additional information to develop a more precise estimate of cleanup times for non-source area groundwater.
2. Install a groundwater extraction and treatment system to contain source area groundwater, and facilitate the restoration of non-source area groundwater.
3. Operate and maintain the groundwater extraction and treatment system to limit the migration of the contaminated groundwater and limit the discharge of contaminated groundwater to the nearby surface water bodies.
4. Implement long-term monitoring program for surface water, groundwater, and sediments to track the cleanup of non-source area groundwater. As part of this program, EPA will monitor groundwater, surface water and sediments to ensure that contaminants are contained within the source area. EPA also proposes to sample residential wells within the site that are currently in use. Public water will be provided to residents should sampling indicate an unacceptable risk.
5. Establish institutional controls: EPA will work with the affected property owners, local officials, and the Maine DEP to develop land use restrictions that will prevent the use and migration of contaminated groundwater. The institutional controls may include restrictions on specific properties, town requirements, or both. A preliminary map of those properties for which groundwater restrictions may be sought is presented in figure 5, showing the proposed "institutional controls zone".
6. EPA will review the cleanup program every five years (conducting "Five-year Reviews") to determine if the cleanup is protective of human health and the environment.

Note, this proposed cleanup plan has been provided to the public for comment and input. Once public comments are received and considered, EPA will publish a final selected cleanup plan (a "Record of Decision"), which may differ from the plan outlined above.



► Fig. 5



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## SECTION 2 - REUSE STATUS

This section outlines the status of site reuse and associated issues. The site consists of only one parcel - the 17-acre George West property, 15 acres of which are undeveloped. Properties lying over the aerial extent of the contaminated groundwater plume have not been included in this analysis, as they are primarily residential parcels already in use. However, as noted above, the proposed cleanup plan does contemplate including many of these parcels in an "institutional controls zone".

**Current and Potential Future Uses:** The site is currently inactive. There are no building structures on site, and the two-acre source area is cleared and fenced. Past soil cleanup actions were completed assuming a commercial/industrial exposure scenario, although the remedy does not preclude other future uses providing the associated risk scenario criteria are met. In the past, the town had expressed some interest in using the site for municipal services, such as salt or public works equipment storage.



View across the Site with Fence/Gate in Background (Looking South), monitoring well in foreground

**Potential Use/Reuse Issues and Considerations:** The proposed cleanup plan, if implemented, would require the construction and operation of a groundwater extraction and treatment system to limit the migration of the contaminated groundwater and limit the discharge of contaminated groundwater to the nearby surface water bodies. Any proposed reuse of the property would have to take into account the location of groundwater extraction wells, piping, and treatment facilities. If a proposed reuse were coordinated with the design and construction of said facilities, it may be possible to minimize adverse impacts on that reuse.

## SECTION 3 - GENERAL FINDINGS/RECOMMENDATIONS

This section outlines follow-up actions by EPA to refine its understanding of the intended future uses of the site. This will enable EPA to consider these details, as appropriate, in the final remedy selection, design and implementation.

It is important to recognize that, because the site property is owned by a private party, EPA does not have direct control over its future use. Therefore, EPA's primary role will be in ensuring consideration of local reuse planning efforts in site response decisions and actions. This section provides a general framework for activities that EPA may undertake to help local stakeholders facilitate future land use (including potential reuse) at the site. Many of the details for assistance and collaboration will be worked out through future coordination with stakeholders.

This document is based on information that was readily available to the EPA case team. Also, the reuse issues and considerations identified in this section represent only a partial list of the potential site-specific factors that may need to be considered.

### Potential Reuse Issues/Considerations

**Project Timing:** The final cleanup plan for the site has not yet been selected. EPA has proposed a cleanup plan to the public for comment. After public comments are considered, a final Record of Decision (ROD) will be published. EPA will take reasonable steps to accommodate proposed future uses during the design and construction of the remedy.

**Third Party Liability Concerns:** It is possible that a party interested in acquiring all or part of this parcel will seek liability protection from EPA and the state, although the recently-passed federal Brownfields legislation may negate that need with respect to Superfund. EPA may need to work with key stakeholders (e.g., likely future owners, town officials, etc.) to communicate the Superfund liability structure and policies (including the recent Brownfields legislation), and available liability tools (PPAs, comfort letters, etc.).

**Site Ownership/Control:** This parcel is currently owned by George West, who is not pursuing site cleanup or reuse. Mr. West owes substantial back taxes for the property. EPA Superfund past costs at the site amount to approximately \$6 million and the future cleanup cost is estimated to be at least \$8.1 million.

Acquisition by the town of all or part of the West parcel is a potential outcome, but further discussions with the town officials will be necessary to determine their level of interest and any issues of concern. In the past, the town had expressed some interest in using the site for municipal services, such as salt or public works equipment storage. The town's decision may be predicated on completing site-specific reuse planning to evaluate their reuse options and to prepare an implementation strategy (See reuse planning comments, below).

Excepting acquisition of the property by the town, ownership will presumably remain within the control of Mr. West for some indefinite period of time. In this case, EPA's role in facilitating reuse is somewhat limited, i.e., generally includes providing information on site conditions and relevant EPA policies, preparing comfort letters/PPAs to prospective buyers, etc.

**Site Reuse Planning:** Some additional reuse planning might be contemplated by the town if acquisition is being considered. Depending on the nature of those planning

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efforts, EPA may be able to provide technical assistance or other support. For instance, the town could be eligible to receive an EPA Superfund Redevelopment Initiative (SRI) pilot. SRI pilots provide up to \$100,000 in funding or other resources to enable local communities to better evaluate future land use options at nearby Superfund sites. The active involvement of the community and other stakeholders in the site reuse planning process is a core component of the SRI Pilots. Only federal, state, local and tribal governmental entities are eligible. Typically, the recipients are municipal or tribal governments representing the communities in which the site is located. EPA may recover the costs under this initiative from the PRPs at the site.

**Institutional Controls:** It is expected that institutional controls, such as deed restrictions, will be required as part of the remedy at the site. These may include restrictions on the withdrawal and use of contaminated groundwater. As noted earlier in this report, A preliminary map of those properties for which groundwater restrictions may be sought is presented in Figure 5.

### **Recommendations for Follow-up**

As stated previously, EPA is best able to accommodate site reuse when specific proposals are available early in the remedial process. The same is true for any reuse planning activities that might involve the site. EPA is not aware of any reuse proposals for the West Site/Hows Corner property, or of any efforts by the town or other parties to acquire the property. Nonetheless, should such intentions be presented in the future, there are a number of ways that EPA may be able to support site reuse during the implementation phase of the cleanup, such as:

- a. Making available guidance materials and providing technical assistance regarding
  - i. EPA policies and requirements pertaining to site reuse; and
  - ii. Relevant federal/state programs and potentially-available resources.
- b. Considering proposed reuse plans in the implementation and scheduling of cleanup activities.
- c. Working with current and future owners to evaluate the feasibility of a proposed use in terms of adverse impact on the remedy, undue risks posed or inconsistency with the requirements of institutional controls.
- d. Working with the town to help them assess their options relative to the future acquisition of site properties. This could possibly include providing limited resources to assist with community-based, reuse planning efforts.

## APPENDIX A - Reference Documents Cited

Woodard & Curran, 2001 - Remedial Investigation report - Hows Corner Superfund Site, Plymouth, Maine

Woodard & Curran, 2002 - Feasibility Study report - Hows Corner Superfund Site, Plymouth, Maine

USEPA, 2002 - Public Meetings Scheduled for EPA's Proposed Groundwater Cleanup (proposed plan for the Hows Corner Superfund site, Plymouth, Maine)

*Figures 2 and 4 in this report courtesy of Woodard & Curran, Remedial Investigation Report, July 2001.*



New England

U.S. Environmental Protection Agency

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