

Environmental Cleanup News



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Draft Feasibility Study Status

Almost a year has passed since the Draft Feasibility Study (FS) was released (March 2001). The U.S. Army Corps of Engineers (the Corps) received comments from the state in April 2001 and the public through June 2001. State comments considered the FS incomplete because the alternatives did not adequately address the groundwater contamination and result in a complete remedy.

Between March 2001 and the present, the Corps has been working with the Restoration Advisory Board (RAB), the Town of Machiasport, the Maine Department of Environmental Protection (MEDEP), and the state congressional representatives to determine all of the steps needed to provide a complete remedy for the Bucks Harbor site so that progress can be made towards completing a final FS report. Through the review process with MEDEP and other parties, the Corps has determined that additional information must be collected to address these comments.

Nature of Comments, Discussions

MEDEP considers the alternatives proposed in the Draft FS incomplete because the remedies only address the water supply issue for approximately 20 current and future residences. MEDEP indicated that only two of the five alternatives analyzed would be acceptable as long-term solutions if additional actions are included to ensure a fully protective and complete site remedy. Based on their comments, to be fully protective, the alternatives need to:

1. Hook up all residences in a "buffer zone," within which migration of the trichloroethene (TCE) plume would be contained.
2. Include a monitoring plan to verify that the plume has not migrated and a contingency plan to address what happens if it does.
3. Prevent the use of groundwater within the buffer zone through the use of deed restrictions, town ordinances, or some other mechanism.

The "buffer zone" approach that could be used to implement one of the currently proposed alternatives would create an area 15 times larger than what is currently analyzed in the

Draft FS. This increase in the size of the area affected would conservatively account for unknown characteristics of the plume and its potential for migration. The Corps proposes to collect additional information to reduce this uncertainty and to evaluate actively cleaning up the aquifer against waiting for it to clean itself.

Despite the assumptions early in the remedial investigation/feasibility study process that it is impossible to remediate TCE in fractured bedrock, it has been proven difficult but possible at other sites using a variety of technologies. The Corps and MEDEP generally agree that remediating the aquifer is desirable because it is a permanent solution to the TCE-contaminated groundwater problem. If the site is cleaned up to acceptable levels, "buffer zones" will not be required.

Interim Measures

Implementing any of the currently proposed alternatives without modifying them would be considered an interim action. Such an action is considered interim because it would not provide a complete solution for the site. Interim actions are usually justified and taken when there is an immediate threat to human health or the environment. An example of an interim action is the individual point-of-entry treatment system filters that are currently installed in five residences. Taking an additional interim action would be necessary if these actions failed to protect human health.

Health Consultation

The Agency for Toxic Substances and Disease Registry (ATSDR) conducted a study in response to Machiasport residents' concerns. The study, released in August 2001, stated that there is no immediate threat to human health due to exposure to TCE from drinking or bathing with groundwater. Based on the data collected to date, which is supported by the ATSDR study, an additional interim action is not necessary or justified at this time. Therefore, we must evaluate comprehensive alternatives in the FS that will lead to a final remedy.

Future of the Project

Due to the duration of the public comment period to June 2001, the numerous substantial comments, and the unresolved issue of a groundwater management zone, the Corps was unable to finalize the Draft FS and release the report in April 2001, per the timeframe discussed at previous RAB meetings. Presently, the Corps' plan for the Bucks Harbor site is to investigate further, evaluate complete alternatives, and facilitate a timely project completion.

Further Investigations

In discussions with MEDEP, the Corps determined the need to continue the existing sampling program that monitors the residential point-of-entry treatment (POET) systems and wells to protect the residents. In addition, the Corps will install monitoring wells around known and suspected source areas. Therefore, additional wells will be installed near the top of Miller and Howard Mountains and the unnamed locations of the transmitter and receiver sites. Installation of additional wells will enable the Corps to better determine the extent of the contamination beyond the areas of residential wells. Other site characterization activities include:

- Soil sampling to continue to try to locate a source.
- Geophysical testing and other hydrogeological testing to better assess the nature of the fractured bedrock and how this affects the migration of the TCE.
- Treatability studies to determine the feasibility of particular active remediation methods.
- A risk assessment to quantify risks at the site.

Comprehensive Alternatives Evaluation

The following provides a brief discussion of four basic alternatives that will be considered to address the contamination.

1. Monitored Natural Attenuation. This alternative relies on natural processes to reduce the contamination (natural attenuation). On-going monitoring would continue to track migration of the contamination and verify decreasing contaminant concentrations.
2. Assisted Natural Attenuation. Creating better conditions for the natural processes to take place assists this alternative. For example, natural attenuation could be enhanced by adding molasses to create anaerobic (without oxygen) conditions where the contamination is present.

3. Chemical Injection. Destroying TCE with controlled injection of chemicals (i.e., hydrogen peroxide).
4. Passive Remediation with Protective Measures. This option leaves the contamination in place; however, measures will be taken to prevent people from being exposed to the contaminated groundwater. For example, water use within designated zones would be prohibited through passage of a town ordinance or negotiations with each property owner (deed restrictions/covenants), and an alternate water supply would be provided.

Whatever method is used to protect people from exposure to the contaminated groundwater will be evaluated as part of the Feasibility Study. To implement the final remedy, the Corps would complete and sign a Decision Document. The final document will include the results of additional site investigations as well as a revised FS report for the water supply alternatives.

Timely Project Completion

To reduce the overall time required to complete the project, tasks can be completed concurrently. Work can be done while the FS is being prepared to save time once a decision is made. For example, if a public water supply is part of the final solution, the Town could establish a Public Water Supply program now. If this process is started after a decision is made, it will take longer to implement a solution. If a groundwater management zone is part of the solution, the Corps could study migration of water now to help determine an appropriate zone later.



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