

CONTAMINATED SITE REMEDIATION

Grade: D+

Overview

Policies have been established in Maine to investigate, remediate, and redevelop sites where contamination poses a risk to the environment and human health, typically due to contamination of drinking water supplies. While programs are adequate, funding for state-led investigation and remediation of known contaminated sites is inadequate. More than \$41 million in additional funding is currently needed.

Introduction and Background

Collectively, the United States Environmental Protection Agency (EPA) and Maine Department of Environmental Protection (DEP) administer six programs that oversee contaminated site investigation, remediation, and redevelopment:

- EPA's Superfund Program;
- DEP's Uncontrolled Sites Program;
- DEP's Petroleum Clean Up Program;
- DEP's Voluntary Response Action Program (VRAP);
- EPA's and DEP's Brownfields Programs; and
- DEP's Landfill Closure Program

The cost of remediating oil and hazardous waste spills and discharges that impact drinking water supplies is high. According to DEP, for example, the DEP and the Portland Water District incurred \$3 million in costs when two wells serving 2,000 residents in North Windham had to be abandoned and replaced with a waterline extension when they became contaminated with gasoline.

Condition and Adequacy

EPA's Superfund and DEP's Uncontrolled Sites and Petroleum Clean Up Programs

The federal "Superfund" (Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)) law was enacted in 1980 to respond to the improper disposal of hazardous substances that occurred prior to the regulation of waste disposal, and it allows EPA to clean up sites and compel potentially responsible parties to perform cleanups or reimburse the government for EPA-led cleanups. The dirtiest "discovered" sites are listed on the EPA's National Priority List (NPL), which is associated with the Superfund program. Sites are placed on the NPL only after initial investigation indicates that federal involvement is warranted.

As of 2007, 14 of the nation's 1,569 NPL sites are located in Maine. Of the 14 sites, investigation and remedial work at 11 sites is deemed complete, with continued monitoring, and two of these sites have been removed from the NPL. The latest addition to Maine's NPL sites was Callahan Mines in Brooksville in 2002.

The Superfund law requires the federal government to identify and address environmental problems from past activities at current and former military installations, even when the environmental issue is not eligible for the NPL. Three military installations are included on Maine's NPL.

The Superfund cleanup process is complex, with several distinct steps from discovery to cleanup to post-remedial-construction monitoring before removal from the NPL. The Superfund law and subsequent amendments established an \$8.5 billion national trust fund for investigation and cleanup of NPL sites.

Maine's Uncontrolled Sites Program was created in 1983 and is Maine's equivalent of the federal Superfund program. The program was created in response to threats or potential threats to human health and the environment posed by abandoned hazardous waste sites not eligible for NPL status. The legislation authorizes DEP to issue orders to potentially responsible parties requiring them to conduct DEP-approved cleanup actions. If there are no viable potentially responsible parties, the legislation authorizes DEP to undertake necessary remedial actions. State-led remediation is funded through bonds. Since its inception, more than \$20 million has been spent on state-led site remediation, bringing 203 sites to closure. As of October 3, 2008, 230 uncontrolled sites requiring further action were on DEP's list, with an estimated aggregate "cost to closure" of more than \$20 million.

Approximately 90,000 gallons of petroleum products are spilled in Maine each year. Investigation and remediation of petroleum contamination from aboveground and underground petroleum storage facilities is managed by DEP's Petroleum Clean-Up Program, which was established in 1991. As of September 2008, 500 sites were listed on DEP's Petroleum Priorities List, which includes only those petroleum-contaminated sites referred to the Bureau of Remediation and Waste Management's Division of Technical Services for long-term remediation. Many of these sites pose an imminent threat to, or have resulted in, contamination of private or public drinking water supplies, and it is necessary to install and maintain in-line treatment systems or supply bottled water to affected entities.

Remediation of groundwater impacted by petroleum is funded by the Ground Water Oil Clean-up Fund. The fund's income is derived from fees on importation of oil to Maine, registration fees from oil storage facilities, fines, reimbursements (from potentially responsible parties, for example), and interest. In 2008 the "groundwater fund" risked insolvency as a result of an unusually large number of grossly contaminated sites undergoing remediation during the 2007 construction season. As a result, future funding of remediation projects is being prioritized based upon the risk posed to human health and the environment. Many cleanups have been deferred until funding is available. The backlog of sites needing remedial work has typically fluctuated between 300 and 450 since 2002. As of September 29, 2008, DEP listed 500 petroleum-contaminated sites that require remedial work, with an estimated aggregate "cost to closure" of \$16.2 million.

Voluntary Response Action Program (VRAP) and Brownfields Program

An unintended consequence of the Superfund law is that properties with an industrial past are assumed to have insurmountable environmental liability. As such, developers and financiers decide, often without data, that the environmental liability risks outweigh the redevelopment potential of brownfield sites and opt to invest in undeveloped or greenfield sites. By definition, brownfield sites are property, whose expansion, redevelopment, or reuse is impeded because of contamination, real or perceived. DEP cites the following benefits of brownfields redevelopment: the protection of public health and the environment through the cleanup of commercial and industrial properties; slowing urban sprawl by encouraging reuse of properties; the use of existing infrastructure; the increased tax revenues and creation of jobs; and the revitalization of declining commercial and industrial communities.

In 1993, Maine legislation established the Voluntary Response Action Program (VRAP) that allows and encourages applicants to voluntarily investigate and remediate properties to the DEP's standards in exchange for protections from DEP enforcement actions. VRAP was intended to encourage the cleanup and redevelopment of contaminated properties in the State that were under the DEP's jurisdiction, including the uncontrolled and petroleum priority sites discussed above. Most brownfield sites enter VRAP. The original federal brownfields legislation had its origins with the Superfund law and as a result included burdensome and time-consuming processes that were not conducive to site redevelopment. In 2002, a new federal brownfields law was enacted that was less onerous.

Remediation of brownfield sites conducted with oversight of the VRAP process is privately funded, but can result in the release of environmental liability (to the extent allowed by the VRAP law). While remediation under the VRAP process is privately funded, the EPA provides some funding for brownfield redevelopment through two competitive grant programs.

One program is available to municipalities. Entities receiving these grants are required to work with DEP through the VRAP process. The EPA also provides funding for Maine and tribal programs administered by DEP as part of the VRAP. A portion of the EPA funds is utilized by DEP to conduct environmental site assessment activities on brownfield sites on behalf of municipalities. Applications for financial assistance received by DEP from municipalities are prioritized based on redevelopment potential. Other EPA funds are available to municipalities through DEP to provide contractors and oversight for remedial activities on municipality-owned brownfield properties, but grants are limited to \$50,000 and must result in a “clean” site ready for redevelopment.

A 2004 survey by DEP of all of Maine’s 492 municipalities resulted in the identification of 2,105 potential brownfield sites (based upon responses from 462 municipalities). A total of 46 percent of these sites were gas stations and auto repair facilities. DEP has enforcement authority over these sites and, therefore, the sites are eligible for brownfields funding. The DEP cites many success stories from VRAP and the Brownfields Program, such as the revitalization of Waterville’s former industrial waterfront area. As of October 3, 2008, 35 brownfield grant sites and an additional 427 VRAP sites have been returned to productive use in Maine since the inception of the programs. Currently, 78 brownfield grant sites and an additional 120 VRAP sites are undergoing investigation and remediation.

Landfill Closure Program

In 1987, Maine enacted legislation that established a remediation and closure program for municipal landfills within DEP. The legislation resulted in the closure of 388 of Maine’s 414 municipal landfills. Most of these municipal landfills, dating back to the 1960s and 1970s, were unlicensed and threatened groundwater and surface water quality due to inappropriate siting, inadequate design, or improper operation. To encourage the prompt closure of the landfills, the law provided for state and municipal cost sharing for closure and remedial activities. In addition, it expedited landfill closures by allowing reduced closure options for facilities deemed not to pose a high risk to public health or the environment.

Most communities closed their non-secure (unlined) landfills prior to 2000, when closure cost sharing dropped to zero percent. Since 2000, no further closure costs can be incurred by the state. The DEP is conducting inspections and reviews of previously closed sites. Non-closure costs incurred by municipalities related to further remedial activities at these closed landfills continue to be eligible for assistance, with up to 90 percent of applicable costs paid for by the state.

According to a DEP report, approximately \$80.5 million in bond and state general funds has been distributed as part of the landfill closure and remediation program. Additional bond funds are necessary for on-going investigation and remedial activities, and continue to be approved by Maine voters. DEP estimates \$4.7 million will be needed for future investigation and remedial activities at closed municipal landfills.

Investment Needs

Currently, funding is inadequate for state-led investigation and remediation of sites where contamination poses a risk to human health and the environment. Additional funding is needed in the form of bonds and increased revenues to the “groundwater fund.”

As of October 3, 2008, 230 uncontrolled sites requiring further action were on DEP’s list, with an estimated aggregate “cost to closure” of more than \$20 million. As of September 29, 2008, DEP listed 500 petroleum-contaminated sites that require remedial work, with an estimated aggregate “cost to closure” of \$16.2 million. DEP estimates \$4.7 million will be needed for future investigation and remedial activities at closed municipal landfills.

Private funding of voluntary site remediation is essential and can be encouraged through reauthorization and proactive application of the VRAP Law and the protections it offers.

At the federal level, continued funding and reauthorization of Superfund and the reauthorization of the 2002 Brownfields Revitalization and Environmental Restoration Act will continue to encourage the remediation of contaminated sites and the return of many of those sites to productive use.

Conclusions and Recommendations

Policies and programs have been established at the federal and state levels to investigate, remediate, and redevelop contaminated sites once they are discovered. In general these policies and programs are adequate; however, drinking water supplies have been and continue to be contaminated and require remediation. Costs for investigation and cleanup are sought from potentially responsible parties, but funds are often not obtainable. Limited funding is available through federal programs, including the Superfund, grants for brownfields, and some cost-sharing with states for state-led cleanups.

At the state level, investigation and remediation of uncontrolled hazardous waste sites and sites contaminated as a result of municipal landfills are funded by bonds. Remediation of groundwater impacted by petroleum storage facilities is funded by the Ground Water Oil Clean-up Fund, which in 2008 risked insolvency despite a significant backlog of sites requiring remedial work. Maine ASCE gives contaminated site remediation a grade of **D+**.

Maine ASCE makes the following recommendations:

- Provide additional funding for the \$41 million of backlogged projects in the form of bonds and increased revenues for the “groundwater fund;”
- Determine the best use of available funds. This determination must be made by risk-based prioritization of identified sites in and across the multiple programs, in addition to realizing accountability;
- Shift focus from the reactive to the proactive, such as enforcement of preventative aspects of existing regulations;
- Congress needs to authorize \$1 billion in annual funding for the Safe Drinking Water Act State Revolving Loan Fund; and
- Congress needs to reauthorize the Brownfields Revitalization and Environmental Restoration Act of 2002 to provide continued federal funding for the redevelopment of brownfield sites.

Sources:

- Report entitled “State of Maine 2003 & 2004 Biennial Hazardous Waste Activities Report,” prepared by DEP - BRWM, and dated December 2005;
- Report entitled “Part II: Administration of Ground Water Oil Clean-up Fund, Maine Department of Environmental Protection,” prepared by DEP, and dated February 15, 2008;
- Report entitled “DEP FACT SHEET, Facts & Figures, LD2073, An Act to Prevent Contamination of Drinking Water Supplies” prepared by DEP, and updated June 5, 2008;
- Web site of the United States Environmental Protection Agency;
- Web site of the Bureau of Remediation and Waste Management, Maine Department of Environmental Protection; and
- Fact check and comments received from the Bureau of Remediation and Waste Management, Maine Department of Environmental Protection on the October 2, 2008 version of this draft report card.