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SUPERFUND SITE PRELIMINARY CLOSE OUT REPORT

McKin Superfund Site
Gray, Maine

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MCKIN SUPERFUND SITE
GRAY, MAINE

I. SUMMARY OF SITE CONDITIONS

Background:

The McKin Superfund Site (Site) is located on the west side of Mayall Road between Route 115 and Pownell Road in Gray, Maine. The Site is approximately seven (7) acres. The topography of the Site is relatively flat. To the east of the Site, beyond Mayall Road, the land slopes steeply eastward to the Royal River. The Site area is located on a glacial outwash plain comprised of stratified sand, gravel, and boulders overlying heavily weathered granitic bedrock. Site surface drainage is contained on-site and incident water either evapotranspirates or percolates into the soil. Neighboring properties include residential areas, wooded areas, and farmland.

The McKin Company operated a waste collection, transfer, and disposal facility at the Site between 1965 and 1978. From 1972 to 1977, the facility handled between 100,000 and 200,000 gallons of waste annually. In 1973, complaints from nearby residents of odors and discolored laundry alerted local officials to potential groundwater contamination. Subsequently, the town of Gray collected and analyzed groundwater samples from residential wells. Volatile Organic Compounds (VOCs), principally trichloroethylene (TCE) and 1,1,1-trichloroethane were detected in groundwater samples. As a result, an Emergency Health Ordinance was issued by the Town of Gray which placed a moratorium on any new construction in the vicinity of the Site.

In 1977, the Site contained approximately 22 metal storage tanks, an asphalt lined lagoon, a sump manhole, a concrete block building, an incinerator, and over 200 55-gallon drums. In September 1977, laboratory analyses of samples from the tanks collected by Energy Resources Company, Inc. (ERCO) detected numerous chemicals including TCE, trichloroethane, xylene, freon, and acetone. Both TCE and xylene were detected in soil samples taken at that time.

Also in 1977, EPA contracted with Fred C. Hart Associates to conduct a hydrogeologic assessment of the area. The results of that assessment showed that contamination was present in many private wells in the vicinity of the Site. In December of 1977 contaminated private wells were capped and emergency water supplies were provided to residents. In 1978, public water service was extended to the area. A state-supervised removal of liquid waste at the Site began in 1979.

On September 1, 1983 the Site was listed on the National Priorities List and ranked thirty-first of 406 sites. Also in 1983, the Maine Department of Environmental Protection (DEP) and EPA signed a Cooperative Agreement which designated the Site as a state-lead site. In August of 1983 Interim Remedial Measure work was begun under the oversight of the Maine DEP. This work included removal of tanks, drums, and liquid waste from the Site and the installation of a chain-link fence.

Remedy Construction Activities

On July 22, 1985 the Regional Administrator signed a Record of Decision (ROD) which selected on-site aeration of contaminated soils and construction of a groundwater extraction and treatment system as the remedy for the Site. The ROD also mandated off-site disposal of remaining drums, further testing of petroleum contaminated soils, an off-site groundwater and surface water monitoring program, and site removal and closure activities. Performance standards of 0.1 ppm TCE for soil, and 28 ppb TCE and 92 ppb 1,1,1-trichloroethane for groundwater were established in the ROD.

Remedial Design/Remedial Action (RD/RA) at the site was divided into two operable units. The first operable unit addressed the on-site aeration of contaminated soil and site closure activities. The second operable unit is the off-site groundwater extraction and treatment system.

In October of 1985, Canonie Engineering, under contract with a group of Potentially Responsible Parties (PRPs), submitted a "Preliminary Site Removal, Disposal, and Closure Work Plan". The demolition of site buildings, disposal of remaining drums and an underground storage tank, and disposal of debris was conducted pursuant to this plan concurrent with a pilot study for soil remediation.

The pilot-scale soil remediation study at the site, which utilized low temperature thermal aeration in an enclosed environment, was conducted by Canonie Engineering. Results of the pilot study were published in an April 1986 report. Full-scale aeration of the VOC contaminated soil began on July 8, 1986 and completed on February 3, 1987.

A "Petroleum Area Soils Characterization and Remediation Analysis" was submitted to EPA and Maine DEP in January 1987. The agencies approved a plan to treat petroleum contaminated soil and this was accomplished between March 13, 1987 and April 17, 1987.

Site demobilization and final closure was completed on June 23, 1987, followed by the issuance of a report in July 1987 entitled "Soil Remediation and Site Closure, McKin Superfund Site". A total of 11,456 cubic yards of contaminated soil were excavated, treated, verified analytically to insure a mean residual concentration not exceeding 0.10 mg/kg TCE, and backfilled.

In March 1989, Sevee & Maher Engineers, Inc., consultants for the PRP group, submitted a "Groundwater Remediation and Monitoring Project Operations Plan" and a "Groundwater Remediation and Monitoring Work Plan" to EPA and Maine DEP. These plans detailed the hydrogeologic investigation, pilot-scale treatability study, and groundwater extraction and treatment system design which was undertaken during 1989. The hydrogeologic study involved the installation of additional monitoring wells, geophysical surveys, permeability testing, an aquifer test, and groundwater modeling.

The groundwater extraction and treatment system proposed by the PRPs consisted of four extraction wells in the portion of the groundwater contaminant plume near the site and a treatment system incorporating an air stripping unit followed by aqueous phase granular activated carbon adsorption and vapor phase granular activated carbon adsorption. EPA and Maine DEP recognized that additional activities would be necessary to remediate the entire plume. However, in the interest of initiating groundwater remediation, the parties to the Consent Decree agreed to construct the groundwater remediation system, begin to treat contaminated groundwater, and make further refinements as necessary. Specifically, the parties to the Consent Decree agreed to collect additional hydrogeologic and system performance data in order to make decisions regarding the necessity of additional extraction wells in the areas of the plume not being addressed by the current system.

The design for the groundwater remediation system was approved by EPA and Maine DEP in June 1990 and construction was complete by September 30, 1990. On October 10, 1990 EPA certified that the system was fully operational. A month-long treatability study was then conducted to insure that the treatment system was operating as designed. Following the review of the data from the treatability study and approval of an Operations and Maintenance Manual, EPA and Maine DEP designated April 15, 1991 as the official start date for the groundwater remediation system.

During the winter/spring of 1991, additional hydrogeologic studies were completed. Presently, data from these studies and from the operation of the groundwater remediation system is being evaluated for fine tuning and further system enhancements through groundwater modeling.

II. DEMONSTRATION OF QA/QC FROM CLEANUP ACTIVITIES

All procedures and protocol followed for sampling and analysis during the soil remediation program (operable unit 1) are detailed in the report entitled "Soil Remediation and Site Closure, McKin Superfund Site". Treatment of soil was verified though sampling and analysis. The verification protocol was approved by EPA. Only EPA methodologies were utilized. An on-site laboratory was used to obtain analytical results quickly. Approximately 10% of the samples analyzed on-site were sent to an off-site analytical laboratory for confirmatory analysis. All of the QA/QC documentation, including soils tracking logs, analytical tracking sheets, and sample chain-of-custody forms were transmitted to EPA and Maine DEP periodically.

All procedures and protocol followed for sampling and analysis during the construction, testing, and operation of the groundwater remediation system (operable unit 2) are detailed in the "Groundwater Remediation and Monitoring Project Operations Plan - McKin Superfund Site, Gray, Maine", the "McKin Groundwater Extraction and Treatment System Full-Scale Treatability Study Work Plan", the "McKin Groundwater Extraction and Treatment System Full-Scale Treatability Study" report, and the "Operations and Maintenance Manual for the Groundwater Extraction and Treatment System". The procedures and protocols detailed in these documents were approved by EPA and Maine DEP.

An EPA contractor, under the Technical Enforcement Support (TES) program, provided oversight during all phases of remedial activities. This oversight included field oversight of sampling procedures and the collection of "split" samples. All split samples were analyzed via EPA methods and under established chain-of-custody protocols. Data qualification packages were provided to EPA.

The QA/QC program utilized throughout the remedial actions described in this interim report was sufficiently rigorous and was adequately complied with to enable the determination by EPA and Maine DEP that all analytical results reported are accurate to the degree needed to assure satisfactory execution of the remedial action consistent with the ROD.

III. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following activities remain to assure the effectiveness of the remedy, assure consistency with the NCP, and satisfy the requirements of the Directive on Site Completion (as updated December 1989).

1. In July 1992, the PRPs will submit an interim report which will evaluate the effectiveness of the extraction system in capturing the contaminant plumes, evaluate the fate and transport of the leading edges of the plumes, and provide preliminary groundwater modeling simulations focused on possible system additions or enhancements.

2. In July 1993, the PRPs will submit an evaluation of the technical practicality of expanding the groundwater extraction system. If appropriate, a design for expansion of the existing groundwater extraction and treatment system will be submitted in July 1993.

3. The groundwater extraction and treatment system will operate initially for five years from the start date of the groundwater remediation system (April 15, 1990) or from the expansion of the groundwater remediation system (1993), whichever is later, or until performance standards are met.

4. Fifty-six months after the start date, the PRPs will submit a report evaluating the performance of the groundwater remediation system. EPA, and the State will then re-evaluate the groundwater performance standards, public exposures, and operation of the groundwater extraction and treatment system. Upon completion of this re-evaluation, the EPA Regional Administrator and the State will determine the appropriate action, which may include system adjustment or modification to improve performance or an extension of the system's period of operation beyond five years.

5. The PRPs will continue the long-term off-site monitoring program and the maintain the site area for ten years following the final termination of the groundwater extraction and treatment system.

6. Following the joint EPA/State site inspection and approval, the PRPs will decommission and remove the groundwater extraction and treatment system within the ten year O&M period.

7. EPA and the State will determine and document site completion consistent with OSWER Directive 9320.2-3A and 3B.

A listing of all reports referenced in this preliminary report is attached. These documents are available for review in the Region I Waste Management Division Records Center (617/573-5729).

Approved By:

Waste Management Division Director — Date: 3/24/92

VI. REFERENCES

Camp Dresser & McKee, Inc. "Remedial Investigation for McKin Company Hazardous Waste Site - Gray, Maine", January 1985.

Camp Dresser & McKee, Inc. "Feasibility Study for McKin Company Hazardous Waste Site - Gray, Maine", March 1985.

Canonie Engineers, Inc. "Revised Preliminary Site Removal, Disposal, and Closure Action Work Plan", October 22, 1985.

Canonie Environmental, Inc. "Soil Remediation and Site Closure - McKin Superfund Site", July 1987.

Sevee & Maher Engineers, Inc. "Hydrogeologic Investigation, DEP-8 Study Area Remediation and Pilot-Scale Treatability Study - McKin Superfund Site, Gray, Maine", December 1989.

Sevee & Maher Engineers, Inc. "Groundwater Extraction and Treatment System Design Report - McKin Superfund Site, Gray, Maine", December 1989.

Sevee & Maher Engineers, Inc. "Groundwater Remediation and Monitoring Project Operations Plan - McKin Superfund Site, Gray, Maine", March 1989.

Sevee & Maher Engineers, Inc. "Groundwater Remediation and Monitoring Work Plan - McKin Superfund Site, Gray, Maine", March 1989.

Sevee & Maher Engineers, Inc. "Operations and Maintenance Manual for the Groundwater Extraction and Treatment System", January 1991.

Sevee & Maher Engineers, Inc. "McKin Groundwater Extraction and Treatment System Full-Scale Treatability Study Work Plan", September 1990

Sevee & Maher Engineers, Inc. "McKin Groundwater Extraction and Treatment System Full-Scale Treatability Study", December 1990.

United States District Court - District Court of Maine, Civil Action No 88-0101B, entered May 5, 1988.

United States Environmental Protection Agency, "Record of Decision - McKin Site, Gray Maine", July 22, 1985.

United States Environmental Protection Agency, Administrative Order, Docket No. I-85-1091, August 23, 1985.

United States Environmental Protection Agency and Maine Department of Environmental Protection, Administrative Order, Docket No. I-86-1040, July 10, 1986.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 18 1992

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: McKin Preliminary Close Out Report

FROM: Jo Ann Griffith
Design and Construction Management Branch

TO: Sheila Eckman
RPM, Region 1

Thank you for allowing us an opportunity to review the draft Preliminary Close Out Report for the McKin Site. We ask that you prepare the report in final and call either myself or Carter Strickland prior to signing the report. There is a national issue dealing with the groundwater sites where additional activity will/may occur. A briefing is being prepared for Headquarters management. I think they will give you the go ahead to sign the report. We will know more in a few days.

Aside from that issue, the report is well written and easy to understand. We have only a few comments:

- Page 2, fourth paragraph: Write out the word PRPs. I think you just missed this one.
- Page 2, last paragraph: This sentence doesn't fit here. The previous paragraph discusses activities in 1987, while this paragraph jumps back to 1985.
- Page 3, third paragraph: Can you rephrase this paragraph in some way? How about, "EPA and the State recognized that additional activities would be necessary to capture the entire plume. In the meantime, the PRPs would construct the system, begin to treat the contaminated groundwater and make further refinements, as deemed necessary." The current paragraph has the intonation that you knew it wouldn't work, but you were settling for something. (This is just an observation)
- Page 5: The list of remaining activities should include any plans for institutional controls and long term operation and maintenance activities.

- Page 5: The report should state when the joint inspection (EPA/State) will be conducted. Is it at point #6?

If you have any questions, please contact me at FTS 678-8353 or Carter at FTS 678-8338.

construction is complete or when the remedy is determined concurrently by U.S. EPA and the State to be functioning properly and is performing as designed, whichever is earlier." U.S. EPA and the State shall make a joint O&F determination based upon review and interpretation of analytical data results from treatment system influent/effluent parameters and groundwater monitoring wells. Following the O&F determination, the following activities will be completed according to schedule described below:

Task	Estimated Completion	Responsible Organization
Operational and Functional (O&F) period	05/31/94	EPA/MDNR
Final RA Report	06/30/94	EPA/MDNR/Amtel, Inc.
Five-Year Review	11/22/97	EPA
Long Term Response Action Groundwater Monitoring	07/20/98	Amtel, Inc.
Completion/Cleanup Validation	07/20/98	EPA/MDNR
Final Inspection and Close Out Report	09/20/98	EPA

Five-Year Reviews

A policy Five-Year review is to be conducted five years from the date on which the contract was awarded for work to install, construct, or implement the remedy. A contract was awarded to Mc Laren/Hart Engineers Midwest, Inc. for implementation of the remedial treatment system by Amtel, Inc. on November 22, 1992. The Five-Year Review will be conducted pursuant to OSWER Directive 9355.7-02, "Structure and Components of Five-Year Reviews", or other applicable guidances.

Long term operation and maintenance of the groundwater pump and treat system and sampling of the groundwater wells will be the responsibility of Mc Laren/Hart Engineers Midwest, Inc. in representation of Amtel, Inc.

Wm. E. Muno 8/16/93

William E. Muno, Director — Date
Waste Management Division