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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F. KENNEDY FEDERAL BUILDING, BOSTON, MA 02203-2211

MEMORANDUM

DATE:

SUBJ: McKin Superfund Site Explanation of Significant Differences

FROM: Merrill S. Hohman, Director
Waste Management DivisionTO: Julie Belaga
Regional AdministratorSummary of Action

The purpose of this memorandum is to set forth the decision of the Regional Administrator to approve the issuance of a Notice of Explanation of Significant Differences (ESD) (attached) for the McKin Superfund Site in Gray, Maine. This ESD concerns a change in the discharge method of treated groundwater.

Major Issues

The Record of Decision (ROD) for the McKin Superfund Site was signed in September 1985. In the original ROD, EPA selected a comprehensive remedy that included both a source management and a management of migration component. The management of migration component included extraction and treatment of contaminated groundwater and discharge of treated groundwater to surface water. Both discharge to groundwater and discharge to surface water were considered. Discharge to surface water was selected because EPA anticipated a relatively large flow from the groundwater extraction system and because concerns were raised during the public comment period about potential flooding and runoff if treated water were to be discharged on-site.

Subsequent hydrogeologic studies conducted at the site indicated that the quantity of groundwater available for extraction and treatment will be significantly less than originally expected. In addition, design studies showed that on-site reinjection of water would aid in flushing of chemicals from the soil and groundwater and accelerate remediation. Therefore, treated groundwater will be discharged into an on-site reinjection system. The reinjection system will be monitored to insure that groundwater flow is being maintained and the system is effective in flushing the aquifer.

This change does not alter the fundamental elements of the remedy. EPA and Maine DEP believe that the remedy remains protective of human health and the environment, complies with

ARARS, and is cost effective. In addition, the revised remedy utilizes permanent solutions to the maximum extent practicable for this Site.

Headquarters Perspective and Involvement

There has been no headquarters involvement with this decision.

Public Involvement

EPA is not required to and does not expect to hold a public meeting specifically on this ESD. The proposed change was presented at a public meeting held in Gray, Maine on February 27, 1990. No concerns regarding the change were expressed by the public at that time. The public will be given notice of this ESD and it will be available for public review.

Media/Congressional Involvement

There has been no media/congressional involvement with this decision.

State Coordination

The State of Maine has had an opportunity to review and comment on this ESD and has concurred with the ESD.

Contact Persons

Sheila M. Eckman, Remedial Project Manager
Luis E. Rodriguez, Assistant Regional Counsel

Declaration

Given the above information, by my signature below I generally approve the issuance of an ESD and the changes stated therein.

Sept. 11, 1990
Date

Merrill S. Hohman
Merrill S. Hohman, Director
Waste Management Division

Sept. 12, 1990
Date

Julie Belaga
Julie Belaga
Regional Administrator

Attachment - Explanation of Significant Differences

EXPLANATION OF SIGNIFICANT DIFFERENCES

I. INTRODUCTION

Site Name, Location, and Description

Site Name: McKin Superfund Site

Site Location: Gray, Maine

Site Description: 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. Between 1965 and 1978, the McKin Company operated a waste collection, transfer, and disposal facility at the Site. 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 evapotranspires or percolates into the soil. Neighboring properties include residential areas, wooded areas, and farmland.

A more complete description of the Site can be found in the "Remedial Investigation For McKin Company Hazardous Waste Site" report dated January 1985.

Identification of Lead and Support Agencies

Lead Agency: United States Environmental Protection Agency
(EPA)

Support Agency: Maine Department of Environmental
Protection
(Maine DEP)

Citation of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) Section 117(c) That Requires the Explanation of Significant Difference (ESD)

After adoption of a final remedial action plan: (1) if any remedial action is taken under Sections 104 or 120, (2) if any enforcement action under Section 106 is taken, or (3) if any settlement or consent decree under Section 106 or Section 122 is entered into; and if such action, settlement or decree differs in any significant respect from the ROD, the CERCLA Section 117(c) requires EPA to publish an explanation of significant differences and the reasons such significant changes were made.

Summary of the Circumstances That Gave Rise to the Need for an ESD

The issuance of this ESD is made necessary for EPA by the change to the remedy which was proposed as part of the design for the groundwater extraction and treatment system. The change resulted from a new interpretation of the groundwater regime in the Site area after additional hydrogeologic data was collected and analyzed. The change involves the reinjection of treated groundwater via infiltration trenches at the Site rather than discharging the treated groundwater directly to the Royal River. This change does not fundamentally alter the remedy selected in the ROD.

Statement That the ESD Will Become Part of the Administrative Record File

After a notice of availability and a brief description of the ESD is published in a local newspaper of general circulation as required by CERCLA Section 117(c), the ESD will be made available to the public by being placed in and will become a part of the Administrative Record File.

Addresses of Locations Where the Files Are Available and Hours of Availability of the Files

EPA Records Center
90 Canal Street
Boston, Massachusetts
(617)573-5729
Hours: Mon.-Fri., 8:30 a.m. - 5:00 p.m.

Gray Town Hall
Gray Public Library
Gray, Maine

II. SUMMARY OF SITE HISTORY, RESPONSE HISTORY, CONTAMINATION PROBLEMS, AND SELECTED REMEDY

Site History, Response History, and Contamination Problems

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.

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 this time.

A state-supervised removal of liquid waste at the Site began in 1979, as part of an initial remedial measure. In 1983, the Site was listed on the National Priorities List. Also in 1983, a Remedial Investigation and Feasibility Study (RI/FS) was initiated under the oversight of the Maine DEP and a program of tank and drum removal was begun.

Between March and June of 1984, groundwater and soil samples were collected as part of the RI by Camp Dresser and McKee (CDM) under contract to the Maine DEP. Additional sampling was conducted by the State of Maine in 1984. The sampling detected TCE in on-site soil in concentrations exceeding 1000 mg/kg. TCE was detected in off-site monitoring wells in concentrations up to 29,000 ppb. Concentrations of 1,1,1-trichloroethane in groundwater exceeded 450 ppb.

A Record of Decision (ROD) was issued for the Site in 1985. The remedies selected included on-site aeration of contaminated soil and a groundwater extraction and treatment system for off-site groundwater. Also in 1985, an Administrative Order was issued by EPA to two Potentially Responsible Parties (PRPs), Fairchild Camera and Instrument Corporation and Sanders Associates, Inc. This order required the respondents to fence and post the Site, conduct a pilot soil aeration study for on-site soils, and remove on-site debris. In July 1986, an Administrative Order was signed by EPA, DEP, and fourteen (14) PRPs to perform aeration of contaminated soils at the Site. In 1988, a Consent Decree was entered into between EPA, Maine Department of Environmental Protection (DEP) and over 300 PRPs. This Consent Decree required the settling parties to complete the soil aeration project and design and operate the groundwater extraction and treatment system.

Between 1985 and 1987, the PRPs conducted a thermal aeration soil remediation program at the Site. During 1989, a hydrogeologic investigation was conducted to provide further data necessary for the design of the groundwater extraction and treatment system. A proposed groundwater extraction and treatment system design was submitted to EPA and Maine DEP

for review in December of 1989. This system design is currently under review. It is anticipated that construction of a system will take place during the Summer of 1990 and be operational by the Fall of 1990.

Summary of the Remedy as Originally Described in the ROD

In the 1985 ROD, EPA selected a comprehensive remedy that included both a source management and a management of migration component. The management of migration component is the subject of this document and includes the following:

- Constructing a groundwater extraction, treatment, and surface water discharge system and operating this system as a remedial treatment unit for a period of five years with a target groundwater performance standard of 92 ppb 1,1,1-trichloroethane and 28 ppb trichloroethylene for groundwater quality.
- Re-evaluating the groundwater performance standard, if this standard is not achieved at the end of the five-year period or earlier if warranted by system performance or site conditions.
- Initiating an off-site groundwater and surface water monitoring program to evaluate the effectiveness of the on-site source control and off-site groundwater extraction and treatment system.

Regarding the discharge of treated groundwater, the ROD stated that "extracted groundwater will be treated and discharged to local surface water." (ROD, p.25). Although both discharge to surface water and to groundwater at the Site were considered during the feasibility study, EPA chose discharge to surface water as part of the remedy in response to concerns raised during the public comment period. Specifically, comments received from E.C. Jordan on behalf of two of the PRPs, Fairchild Camera and Instrument Corporation and Sanders Associates, Inc. raised concerns regarding the potential effects of discharging treated groundwater on the Site.

III. DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR THOSE DIFFERENCES

Summary of the Information that Gave Rise to Significant Differences from the Selected Remedy As It Was Originally Specified

At the time the ROD was signed, EPA anticipated a relatively large flow from the groundwater extraction system and thus,

discharge to surface water was chosen as the preferred method. In the CDM Feasibility Study, it was estimated that up to 540 gallons per minute (gpm) of water could be extracted and treated. Concerns raised during the public comment period centered on potential flooding and runoff if this amount of water was discharged at the site. The hydrogeologic investigations conducted during 1989 indicate, however, that the quantity of water proposed for extraction and treatment is approximately 40 to 80 gpm, an order of magnitude less than previously anticipated. Consequently, the potential for adverse environmental effects resulting from the discharge of large quantities of treated water at the site is no longer a major concern.

Reinjection of groundwater is also proposed as a method to accelerate remediation of the aquifer. Based on the recent hydrogeologic evaluations, the rate of natural flushing of the aquifer is believed to be much slower than previous projections had indicated. On-site reinjection of water will aid in flushing of the chemicals from the soil and groundwater and thus, remediate the aquifer faster than through natural processes.

The proposed reinjection system consists of a series of chamber systems similar to a septic system leachfield. Groundwater simulations conducted during the hydrogeologic investigation indicated that hydraulic mounding beneath the reinjection system will not be excessive nor will it direct contaminated groundwater into areas previously uncontaminated.

The reinjection system will be monitored for hydraulic mounding. Monitoring will also be required to confirm that the northwesterly groundwater flow direction is maintained to ensure effective flushing of the aquifer. Existing monitoring wells are sufficient to provide the data necessary for evaluation of the reinjection system. The construction costs of the on-site reinjection system are approximately the same as the pipeline to the Royal River. Reinjection will not affect the overall schedule or timing for construction.

IV. SUMMARY OF SUPPORTING AGENCY COMMENTS

The State of Maine has reviewed this ESD and their comments have been incorporated in the text.

IV. AFFIRMATION OF THE STATUTORY REQUIREMENTS

Affirmation that the Modified Remedy Continues to Satisfy Statutory Requirements

Considering the new information that has been developed and the change that has been made to the selected remedy, EPA and Maine DEP believe that the remedy remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost effective. In addition, the revised remedy utilizes permanent solutions to the maximum extent practicable for this Site.

V. PUBLIC PARTICIPATION ACTIVITIES

Notice that Administrative Record is Available for Comment

An Administrative Record is under development for this ESD and will include the following documents which are available at the information repositories listed in Section I of this ESD:

"Remedial Investigation for McKin Company Hazardous Waste Site"; January 1985

"Feasibility Study for McKin Company Hazardous Waste Site"; March 1985

"Hydrogeologic Investigation, DEP-8 Study Area Remediation, and Pilot-Scale Treatability Study"; December 1989

Additional supporting material which will become part of the Administrative Record and is attached to this ESD is as follows:

"December 5, 1989 letter from EPA to Mr. John Sevee"

"March 12, 1990 letter from Mr. John Sevee to EPA"

This ESD accompanied by any supporting information and analysis is available for public comment and will be found in the Administrative Record File. See Section I of this ESD for the addresses of the locations where this ESD is kept and maintained.

Date of Any Planned Public Information Meeting

EPA is not required to and does not expect to hold a public meeting specifically on this ESD. The proposed change was

presented at a public meeting held in Gray, Maine on
February 27, 1990.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

J. F. KENNEDY FEDERAL BUILDING, BOSTON, MASSACHUSETTS 02203

December 5, 1989

Mr. John Sevee
Sevee & Maher Engineers, Inc.
4 Blanchard Road
P.O. Box 85A
Cumberland Center, ME 04021

Subject: McKin Superfund Site Proposed change to ROD

Dear Mr. Sevee:

One of the issues raised during our October 12, 1989 meeting was the proposal to discharge treated groundwater from the GETS on-site as opposed to operating a surface water discharge system as stated in the ROD.

In order for EPA to consider the proposed change, please provide us with the following information.

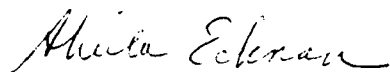
1. A description of what the proposed change will entail, including anticipated volume and method of discharge.
2. Summary of the information that gave rise to significant differences from the selected remedy as it was originally specified. This summary information could include the results of treatability studies, hydrogeological analyses, or other information developed during the remedial design process. In this discussion, reference should be made to any information in the administrative record file that supports the need for the change.
3. A description of the significant differences between the remedy as presented in the ROD and the action now proposed. As appropriate, this description should summarize the differences in scope, performance (e.g. technology, ARARs, and timing), or cost between the original and modified remedy.
4. A discussion of whether the proposed change will trigger any ARARs, particularly in relation to land disposal restrictions pursuant to RCRA Subtitle C or underground injection control pursuant to the Safe Drinking Water Act. Guidance on this matter may be found in CERCLA Compliance With Other Laws Manual, Parts I and II (OSWER Directives 9234.1-01 and 9234.1-02).

5. An identification of any permits necessary for the proposed discharge and a timetable for obtaining such permits.
6. An explanation why the information provided in items 1 through 5.
 - a. is significant,
 - b. is not contained elsewhere in the administrative record file,
 - c. could not have been submitted during the public comment period, and
 - d. substantially supports the need to significantly alter the response action.

Based on our discussion at the meeting and a review of the guidance for post-ROD changes, our initial assessment is that the change would qualify as a significant change which would warrant an Explanation of Significant Difference (ESD). If the EPA determines, based on the information submitted, that new information warrants a change, an ESD document would then be prepared for inclusion in the administrative record, the supporting agency (DEP) would have opportunity to comment, and notice of the change would be published in the newspaper. No public comment period would be required and work at the site could continue. Since the ESD procedure may be lengthy, we encourage you to provide complete documentation for the need for the change as soon as possible.

If you have questions regarding the procedure or the type of information to be submitted for our consideration, please call me at (617)573-5780.

Sincerely,



~~Sheila Eckman~~
Remedial Project Manager

cc: Luis Rodriguez, EPA
Bill Walsh-Rogalski, EPA
David Webster, EPA
Rebecca Hewitt, Maine DEP

SEVEE & MAHER ENGINEERS, INC.
Waste Management and Geohydrologic Consultants

March 12, 1990

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Ms. Sheila Eckman, Project Coordinator
U.S. Environmental Protection Agency
90 Canal St.
Boston, MA 02158

Subject: Response to Explanation of Significant
Difference for the Treated Groundwater
Discharge System, McKin Site, Gray, Maine

Dear Ms. Eckman:

On behalf of the Settling Parties, this letter responds to the U.S. Environmental Protection Agency's (U.S.EPA) December 5, 1989 letter requesting information on the proposal to reinject treated groundwater and its February 16, 1990 comments on the "Groundwater Extraction Treatment System Design Report" and "Hydrogeologic Investigation" prepared by Sevee & Maher on behalf of the McKin Site Trust.

We contend that the proposal to reinject treated groundwater on-site is not significantly different from the disposal option proposed in the Record of Decision (ROD). In fact, we believe that reinjection is consistent with the ROD in that it will accelerate remediation. However, in order to facilitate site remediation, we are providing the information requested in your December 5th letter.

In the December 5th letter, U.S.EPA requested six items of information to document an Explanation of Significant Difference (ESD) for reinjection of the treated groundwater. In its February 16th letter, U.S.EPA confirmed that Items 1 and 2 of its December 5th letter have been adequately addressed in the GETS design report. Items 3 through 6 are addressed below.

3. In the ROD, U.S.EPA has approved discharge of treated groundwater to local surface water (the Royal River). However, in light of data obtained since the ROD was signed,

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we now believe that on-site reinjection of the treated groundwater would be more effective in remediating the aquifer. The on-site discharge will occur through chamber systems similar to a septic system leachfield. The discharge will occur within the McKin Site boundaries. This proposed method should accelerate remediation by flushing clean water through the aquifer at a faster rate than would occur naturally through infiltration.

At the time the ROD was signed, U.S.EPA and its consultants anticipated a large flow from the groundwater extraction system and thus, discharge options were necessarily limited to surface water discharge. In the CDM Feasibility Study, it was estimated that up to 800 gallons per minute (gpm) of water could be extracted and treated. Recent hydrogeologic investigations indicate, however, that the quantity of water that can be extracted is approximately 40 to 80 gpm, an order-of-magnitude less than previously anticipated. Consequently, we are now able to consider other discharge options which may provide for more effective groundwater remediation.

More important, based on the recent hydrogeologic evaluations, the reinjection proposal should accelerate remediation of the aquifer. As you know, the ROD sets a five-year goal for meeting the target groundwater performance standard. On-site reinjection of water will aid in flushing of the chemicals from the soil and groundwater and thus, remediate the aquifer faster than through natural processes.

Although the reinjection system will require monitoring for hydraulic mounding, the existing wells within the site boundaries will provide sufficient monitoring data. Monitoring will be required to confirm that the northwesterly groundwater flow direction is maintained to ensure effective flushing of the aquifer. The monitoring frequency will be established in an on-going fashion depending on the initial data. However, we envision that water levels will be taken monthly during the first year after start-up of the GETS.

The construction costs of the on-site reinjection system are approximately the same as the pipeline to the Royal River. As explained above, reinjection will not affect the overall schedule or timing for construction but will accelerate remediation of the aquifer.

4. We have reviewed the CERCLA Compliance With Other Laws Manual, Parts I and II (OSWER Directives 2934.1-01 and

9234.1-02), as well as the list of potential ARARs prepared by the Maine Department of Environmental Protection (MDEP) dated July 14, 1988. Based on our review of these documents, reinjection will not trigger any ARARs.

5. Based on our discussions with U.S.EPA and MDEP staff, other than a permit to excavate in the street, no permits are required for the proposed treatment system if the system meets the agencies' discharge requirements. Specifically, the agencies have determined that no groundwater discharge permit will be required if maximum contaminant levels (MCLs) are met. As you know, the treatment system has been designed to meet MCLs.

We will be applying for the necessary permit from the Maine Department of Transportation in Augusta, Maine.

- 6A. The information provided above and in the GETS design report is significant in that the actual flow rate is approximately ten times less than that previously anticipated. This decrease in flow rate is significant in terms of how the water can be handled. Because of the lower flow rate, the Settling Parties can consider discharge options other than pipelining the treated water to the river. Most important, the smaller flow rate allows the Settling Parties to discharge the treated water through reinjection which should accelerate remediation of the aquifer.
- 6B. The information on the flow rate is not contained elsewhere in the administrative record file because the data became available only during 1989 investigations conducted pursuant to the Consent Order. The results of these investigations were finalized in December 1989 and were only recently available.
- 6C. As discussed in response to 6B, because the flow rate information became available only recently, it could not have been submitted during the public comment period.
- 6D. The information provided above supports the need to change the response action by allowing on-site reinjection of the treated water rather than surface water discharge. Specifically, the two items that support this change in the response action are the low flow rates and the strong chemical adsorption characteristics which indicate that

additional flushing is beneficial in that it will accelerate the clean-up. These data were available only as a result of 1989 hydrogeologic investigations required in the Consent Order.

Very truly yours,

SEVEE & MAHER ENGINEERS, INC.



John E. Sevee, P.E.
Project Coordinator

CC: Ms. Rebecca Hewett, MDEP
Mr. William Shepherd
Mr. Ron Hausmann, Tuttle and Taylor Incorporated
Mr. James Kohler, Sanders Associates, Inc.
Mr. Gary Spengler, Texaco, Inc./Research Center
Mr. Phil Delahunt, Amoco Corporation
Mr. Andrew F. Hodges, Georgia Pacific Corp./Law Department
Ms. Constance P. O'Neil, Esq., Conley, Haley & O'Neil
Mr. Jonathan S. Piper, Esq., Preti, Flaherty, Beliveau & Pachios
Mr. Urmes Kelmser, Chevron, U.S.A., Inc.
Mr. Coke Cherney, Ropes & Gray
Ms. Deborah Schmall, Landels, Ripley & Diamond Attorneys