U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I
OFFICE OF SITE REMEDIATION AND RESTORATION

KEARSARGE METALLURGICAL CORPORATION
FIVE YEAR REVIEW
July 1998

I. INTRODUCTION

A. Authority, Purpose.

EPA Region I conducted this review pursuant to CERCLA Section 121(c), the National Contingency Plan Section 300.400(f)(4)(ii), and OSWER Directives 9355.7-02 (May 23, 1991) and 9355.7-02A (July 26, 1994). This Review is a Statutory Review. The purpose of a five-year review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. This document will become a part of the Site File. Because construction has been completed at the Site and only long-term response remains, this is a Type I review. Congress proposed listing of the Kearsarge Metallurgical Site (the "Site") on the National Priorities List on September 8, 1983 and finalized the listing on September 21, 1984.

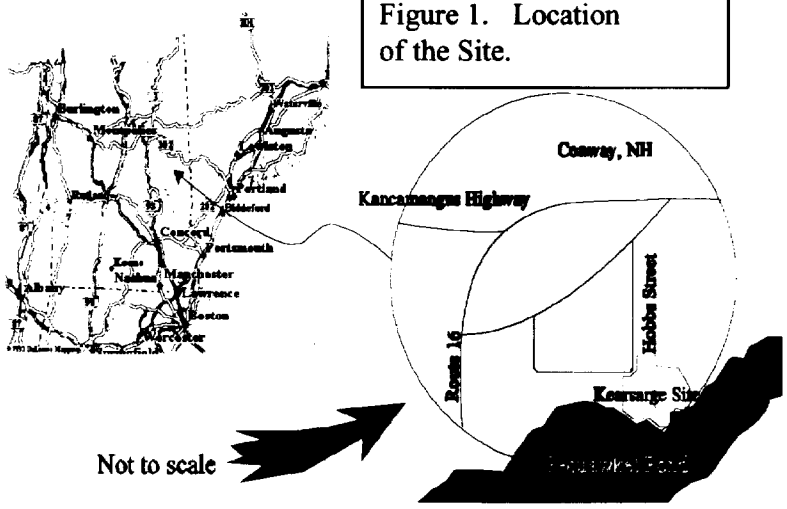


Figure 1. Location of the Site.

B. Site Characteristics.

The Site is located in Carroll County, Conway, New Hampshire. The Site served as a metal foundry from 1964 through 1981 and operated in an area zoned for, and including other, industries.

The operators illegally disposed of solid and liquid hazardous wastes at the Site, creating a health hazard by contaminating the surface soils and the ground water. The ground water contamination consists of volatile organic compounds (VOCs). The Town's water supply well field lies approximately ½ mile to the north of the Site. The EPA and State have performed actions under the Superfund law to cleanup the Site.

Originals in color.

C. Present Status of the Site

No potential for exposure to Site contaminants exists on the surface of the Site. Risks due to exposure from hazardous materials on the surface of the Site were eliminated when EPA removed and disposed of, or destroyed, more than 13,000 tons of contaminated materials associated with the contaminated waste pile and septic system in 1992. The contaminated aquifer is being restored by operation of a ground water treatment plant built by EPA in 1993. Ground water recovery operations are designed to halt the flow of contaminated ground water and therefore protect the Town well field and Pequawket Pond from contamination.

Institutional controls were not called for in the 1990 Record of Decision (ROD). The area is an industrial park, and residents near the Site use municipal drinking water supplied by the Conway Village Fire District. EPA and the State did not believe that institutional controls were necessary due to two factors:

1. All residents near the Site whose wells may be threatened by ground water contamination from the Site receive municipal water; and

2. Ground water contamination migration appears to have been halted onsite, and continued pump-and-treat operations will further diminish the contaminant plume.

II. REMEDIAL OBJECTIVES

A. Remedial Objectives Set in the 1990 Record of Decision

EPA issued a ROD on September 28, 1990, for the final cleanup of the Site. The Site cleanup consisted of a Source Control Component and a Management of Migration Component.

The Remedial Response Objectives in the 1990 ROD for the waste pile and source control component were:

1 to prevent the inhalation of wind-blown, fine, particulate materials from the waste pile;

2. to reduce the risks associated with ingestion of or physical contact with metals in the waste pile;

3. to prevent the possibility of a release of other contaminants that may be present in the waste pile;

4. to prevent the migration of contaminants from the septic system and surrounding soils that could further degrade ground water quality; and

5. to reduce the risk associated with inhalation of VOCs and physical contact with the contents of the septic system or the surrounding soils.

The five objectives above resulted in the following cleanup goals:

Waste pile cleanup level - Total chromium: 1,400 parts per million.[1]
Soil cleanup level - 1,1,1 Trichloroethane: 300 parts per billion.

The Remedial Response Objectives in the 1990 ROD for the management of migration component were:

1. to minimize further horizontal and vertical migration of contaminated ground water from the Site and

2. to minimize any negative impact to Pequawket Pond resulting from discharge of contaminated ground water.

Cleanup goals set for the ground water in the 1990 ROD and developed in response to the second set of remedial objectives include:

GROUND WATER CLEANUP GOALS	
CONTAMINANT	CLEANUP LEVEL (Parts per billion)
1,1,1 TRICHLOROETHANE	200
CHLOROFORM	100
TRICHLOROETHYLENE	5
1,1 DICHLOROETHANE	4
1,2 DICHLOROETHANE	5
1,1 DICHLOROETHYLENE	7
CHROMIUM	50
NICKEL	700

The remedy selected to meet both sets of objectives consisted of:

1. removing the Waste pile and septic system with contaminated soils; and

2. extracting ground water from the aquifer, treating it on-site using air

stripping, filtration and carbon absorption, and then disposing the treated water by recharging it to the aquifer.

On May 9, 1994, EPA documented completing the following actions:

1. The removal of the waste pile, septic system, and other items at the Site contaminated with hazardous materials from the Site and disposal as selected in the 1990 ROD and 1992 Explanation of Significant Differences in *The Remedial Action Report for Operable Unit 1 (Source Control)*, signed by Dennis Huebner, EPA NH & RI Branch Chief, December 30, 1992;

2. The construction of the ground water treatment plant in *The Preliminary Closeout Report,* signed by Dennis Huebner, September 24, 1993; and

3. All remedial activities for the Site, as described in the 1990 ROD, in *The Remedial Action Completion Report,* signed by Dennis Huebner on September 30, 1993.

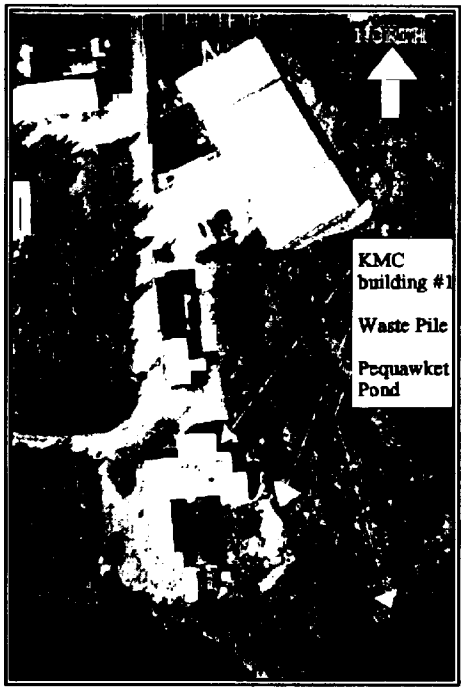
B. Attainment of Objectives

The Site cleanup consisted of two actions, both of which have been implemented. The first was the removal of a waste pile that posed a health threat to people who come into contact with, or breathe, contaminated dust from the pile. The second action was the ground water cleanup, which has protected the Conway municipal well that lies ½ mile to the north. The EPA removed the 13,000 ton waste pile in 1992 at a cost of approximately $1.9 million[2] and built the ground water remedy in 1993 at an approximate cost of $4 million.[3] The State continues to operate the ground water pump-and-treat plant at a cost of approximately $250,000 per year. The ground water treatment plant may need to run until the year 2003 to meet the cleanup requirements.[4] No other actions are needed at the Site to protect human health and the environment.[5]

The ground water extraction system treats an average of 42 gallons per minute of contaminated ground water. The treatment plant removes metals through precipitation and VOCs through air stripping. The VOCs are captured from the resultant air stream from the air stripper on activated carbon. The activated carbon is shipped off-site for incineration and regeneration of the carbon. EPA anticipates that the aquifer will be restored and ground water extraction and treatment will be discontinued in 2003.

All constructed components of the management of migration remedy were completed in 1993. All contaminants from the waste pile and septic system have been disposed of off-site, and therefore, no risk is posed. The attainment of the objectives set forth for management of migration and source control are best shown in the figure on the following page.

Pre-remediation 1985



Post Remediation 1994

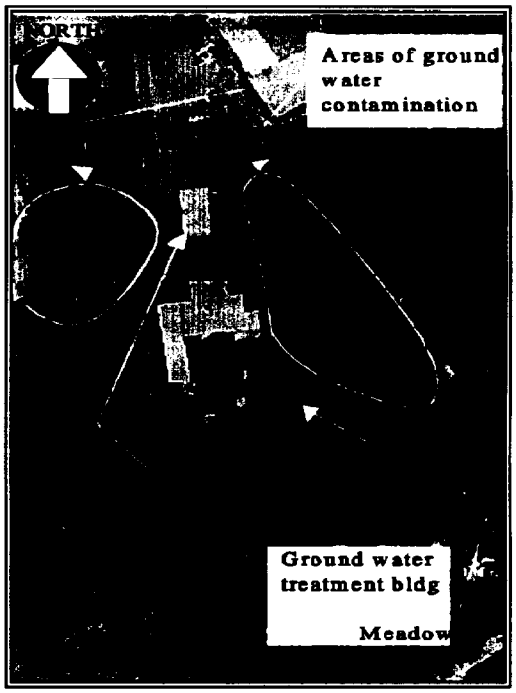
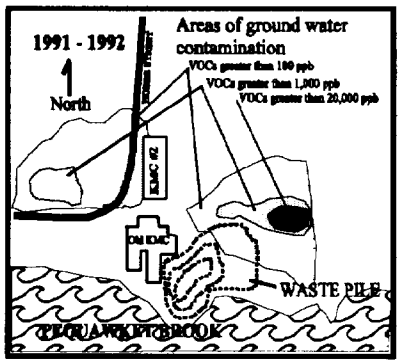
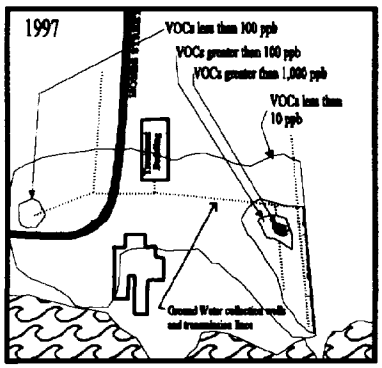


Figure 2. Identical view of the KMC Site, but separated in time. In both views, north is at the top of the photo and the main KMC building (#1) is at the bottom of the photo. Hobbs Street is the curving street on the left and Pequawket Pond is at the bottom. In the 1985 photo the building that lies to the north of building #1 is another old KMC building (#2), to the right (east) of the main building lies the waste pile. In the 1994 photo building #2 was torn down and in its place EPA built a ground water treatment plant. The 1994 photo shows the area of the waste pile to now be a meadow and the location of ground water contamination. Below are line drawing renditions of the same area that show the progress of the ground water cleanup from 1992 to 1997. The treatment plant has run since 1993 treating more than 100 million gallons of contaminated ground water and removing more than 54 pounds of contaminants.





Original includes color coding.

III. ARARs REVIEW

Since the 1990 ROD was signed, there have been no changes in the regulatory standards for any of the compounds with identified cleanup levels and no enacted state or federal laws have affected the protectiveness of the remedy. The State has updated or enacted the following Regulations since the 1990 ROD was signed:

Water Quality Standards, Env-Ws 310-319, 1994. Sets drinking water standards. No change from federal standards in existence, and evaluated in the ROD, in 1990.

Groundwater Protection Rules, Env-Ws 410, February 1993. The State's ground water anti-degradation rules. This regulation serves primarily as a permitting mechanism intended to halt the migration of contaminants, reduce the potential for exposure through institutional controls, and track the ground water contaminant plume migration. No standards have been set that affect the protectiveness of the remedy at the Site.

Surface Water Quality Regulations, Env-Ws 430-438, July 1996. Maintains the ambient water quality criteria contained in the federal regulations in existence, and evaluated in the ROD, in 1990. These regulations do provide for qualitative standards for surface water and sediments; however, surface water contamination has been minimal and very localized at the Site.

Hazardous Waste Rules, Env-Wm 100-1003, August 1994. Maintains the general criteria that the RCRA regulations contained, and evaluated for the ROD, in 1990. Applies to the operation of the facility and the maintenance of the equipment. A review of the regulations and an inspection of the Site revealed no violations.

Rules Governing the Control of Air Pollution, Env-A 100-1700, December 1995. Standards that apply to the air stripper at the Site. Emissions from the air stripper unit lie well within the standards provided in these regulations.

In summary, after review by the State and EPA, no new regulations or standards indicate that the remedy at the Site is not protective of public health and the environment.

IV. SUMMARY OF SITE VISIT

The EPA Site manager, Darryl Luce, conducted a Site inspection on March 31, 1998. Present were Richard C. Boynton, Section Chief of EPA's New Hampshire/Rhode Island Section; Scott Hayes, the treatment plant operator; Richard Pease, New Hampshire Department of Environmental Services; and Paul Lincoln, the State's Project Manager. The inspection revealed that no additional residences have been built in the area that could have placed a well into a

contaminated portion of the aquifer. The inspection also verified that operation of the treatment plant is continuing and that progress in reaching the ground water cleanup goals is occurring.

V. AREAS OF NONCOMPLIANCE

None.

VI. RECOMMENDATIONS

Based on monitoring results and conditions at the Site, the State should continue to operate the ground water extraction and treatment plant. The State should also continue the current ground water monitoring schedule to ensure that protectiveness is maintained.

VII. STATEMENT OF PROTECTIVENESS

I certify that the remedy selected for this Site remains protective of human health and the environment.

VIII. NEXT REVIEW

The next five-year review will be conducted by September 30, 2003 unless all three of the following conditions exist:

1. Final ground water cleanup levels are attained throughout the aquifer at the Site;

2. The residual human health risk is within EPA's acceptable risk range; and

3. The Site is protective of human health and the environment and likely to remain so under an unlimited use and unrestricted exposure scenario.

Patricia L. Meaney, Director
Office of Site Remediation and Restoration, Region I

7/8/98
Date

BIBLIOGRAPHY

1. *Explanation of Significant Differences*, Kearsarge Metallurgical Corporation Site, August 31, 1992.

2. *Itemized Cost Summary Report*, Kearsarge Metallurgical Site, Conway, NH. Site ID = 0163, Total Site costs through 3/31/98.

3. *Itemized Cost Summary Report*, Kearsarge Metallurgical Site, Conway, NH. Site ID = 0163, Total Site costs through 3/31/98.

4. *Record of Decision*, Kearsarge Metallurgical Corporation, September 28, 1990.

5. *Site Review and Update*, Kearsarge Metallurgical Corporation, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, September 13, 1993. Also includes correspondence from EPA project manager, Darryl Luce to ATSDR, on October 28, 1993.