SUPERFUND PROJECT UPDATE

Moss-American Site
Milwaukee, Wisconsin

U.S. EPA Region V
July 1987

INTRODUCTION

The U.S. Environmental Protection Agency (EPA), in cooperation with the Wisconsin Department of Natural Resources (WDNR), will be conducting detailed investigations of the Moss-American Superfund site.

This fact sheet is one in a series of public information materials designed to keep Milwaukee area residents abreast of actions at the site. It includes information about the site and its history. It also describes the Superfund process and future onsite activities expected to begin by August 1987.

EPA will provide advanced notice of a public meeting to be held before work begins. More information about future onsite investigations will be provided during that meeting.

SITE BACKGROUND

Operations at the Moss-American site began in 1921 when two companies — the Moss Tie Company and the American Creosote Company — began to treat railroad ties with creosote (a wood preservative). At the time, waste creosote was disposed of directly to the Little Menomonee River. Around 1941, holding ponds and baffles were installed to treat the creosote wastes before they were discharged to the river.

Between 1963 and 1965, the Kerr-McGee Chemical Corporation purchased both companies and formed the Moss-American Company. In 1966, the Milwaukee Metropolitan Sewerage District (MMSD) collected river water samples near the plant. Based on its results, MMSD advised Kerr-McGee to modify the creosote disposal facility to protect the Little Menomonee River.

In 1970, the Wisconsin Department of Natural Resources (WDNR) ordered Kerr-McGee to pretreat its industrial waste and discharge it to a sanitary sewer. By May 1971, Moss-American had complied with this order.

In June 1971, several people received chemical burns from wading in the river. EPA officials determined that the burns were caused by creosote-related chemicals. Because of these findings, warning signs were posted around the Moss-American site and Kerr McGee dredged and filled eight interconnected waste ponds. Contaminated sediment along 1,700 feet of the riverbed adjacent to the site was also excavated and landfilled near the northeastern corner of the site.

In 1973, EPA provided $320,000 to remove and treat contaminated river sediments for about one mile of the river downstream of the site.

In 1974, EPA filed a suit against Kerr-McGee. In the suit, EPA sought reimbursement for the 1973 cleanup project and an injunction that would order Kerr-McGee to clean up the remainder of the contaminated river sediments. Milwaukee County also filed suit against Kerr-McGee in 1974, seeking compensation for alleged damage to the Little Menomonee River.

In 1976, Kerr-McGee closed the Moss-American site. Meanwhile, EPA continued to investigate the site and gather evidence for its suit. The case, however, was eventually dismissed in 1978 because of erroneous field data. Milwaukee County dropped its pending lawsuit against Kerr-McGee that same year in exchange for 65 acres of the site. This land was added to the Milwaukee County park system for future development. Kerr McGee sold the remaining 23 acres of the site to the Chicago and Northwestern Railroad Company in 1980. The railroad company now uses the parcel as an automobile loading and storage area.

Also, in 1980 U.S. Congress passed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) — otherwise known as "Superfund" (see "Superfund Explained"). By 1983, WDNR had evaluated the Moss-American site, scored it, and proposed it be included on the list of sites slated for investigation and possible cleanup under Superfund. This list is called the National Priorities List (NPL). In 1983, EPA added the site to the NPL.

In 1984, the Milwaukee County Task Force on Pesticides and Herbicides was formed and issued a report about the Moss-American site. The report, presented to Milwaukee County officials, included specific recommendations for the site. The report recommended that Milwaukee County:

- Prohibit public use of the county-owned portion of the site
- Implement a site sampling program
- Explore long-term site management options

The Milwaukee County Board of Supervisors heard these recommendations but did not adopt them.

In 1985, EPA began its planning work for the site by asking the companies past and present owners, thought to be responsible for the contamination, called Potentially Responsible Parties (PRP's), to participate in the Superfund investigations. All PRP's declined this request.

THE PROBLEM

Where is the Site Contaminated?

Because production activities at the Moss-American site ended more than 10 years ago, the exact locations and amounts of waste creosote are not known. However, the site's former layout has been defined and the locations of possible creosote contamination have been identified. These locations include:

- Processing areas
- Drainage ditches
- Holding ponds
- Railroad loading docks
- Storage areas for treated wood
- Contaminated sediment disposal areas

Site sampling completed by the National Enforcement Investigation Center in 1977 confirmed the presence of creosote contamination at several onsite locations and

as far as 4 miles downstream in the Little Menomonee River.

Where are the Contaminants Going?

Contaminants at the Moss-American site have been carried off the site by drainage ditches and the Little Menomonee River. Potential pollution of the river is of particular concern because it is a pathway through which contaminants can come in contact with people or the general environment.

Earlier data indicated that creosote compounds have migrated down the river and have accumulated in river sediments. Samples of sediment collected during the 1980s revealed the presence of oily chemical compounds more than 5 miles downstream of the site.

The groundwater beneath the site appears to be flowing into the Little Menomonee River. Therefore, the groundwater may be transferring site contaminants from the soil into the river. The probability that contaminated groundwater is reaching deep underground aquifers (water-bearing layers) is low. This potential pathway, however, will also be investigated.

Toward a Long-Term Solution.

The general goal of the Superfund program is to propose and implement cost-effective long-term responses to hazardous waste problems to best protect public health and the environment. A detailed study of the Moss-American site — known as a Remedial Investigation (RI) — is the first part of a two-part study used to define the extent of the problem and to suggest possible solutions.

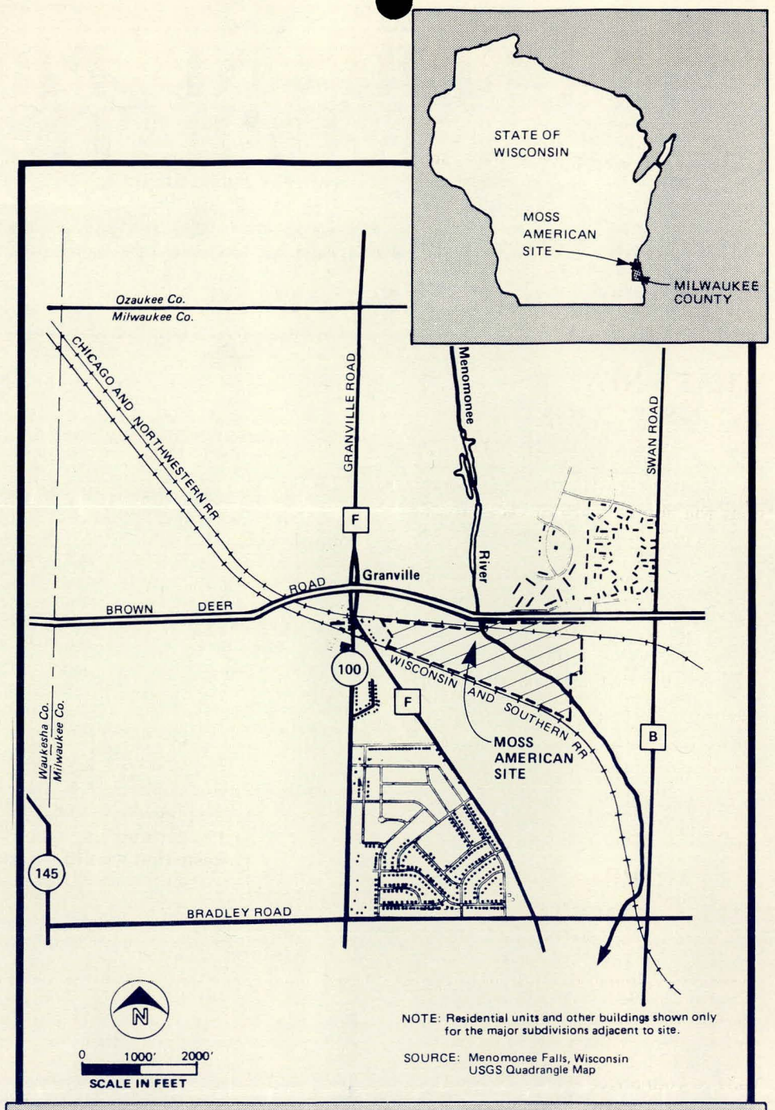
REMEDIAL INVESTIGATION

Detailed plans for the first phase of the RI have been prepared. In addition to procedures used at all Superfund sites, the EPA contractor has developed special laboratory techniques for the Moss-American site. Because the tar-like creosote samples could damage laboratory equipment, EPA contractors had to invent methods to dilute the samples and then analyze them for specific contaminants that may be present in the creosote. EPA is now adjusting its quality assurance plans for the site to take these new procedures into account.

The first phase of RI work will involve onsite work designed to gather data for the RI report. All of the information collected during the RI will be compiled, evaluated, and documented in an RI report. The main objectives of the RI are to:

- Identify the key physical features of the site.
- Locate onsite sources of creosote and other contaminants or hazardous wastes and estimate the amount of the contaminant at each source.
- Determine the extent of contaminated soil, groundwater, and river sediment.
- Identify and evaluate the potential pathways for contaminant movement (surface water, groundwater, and air).
- Estimate the potential short-term and long-term hazards to public health and the environment.

The first phase of RI field investigations are scheduled to begin during the summer of 1987. If necessary, additional phases of RI work will follow if necessary to develop or evaluate suggested remedies.



THE SITE

The Moss-American Superfund site is located in the northwestern part of the City of Milwaukee. The 88-acre site is bounded by the Chicago and Northwestern Railroad and Brown Deer Road to the north and the Wisconsin and Southern Railroad to the south. The Little Menomonee River enters the site through the northern boundary and leaves through the eastern boundary.

The site is the former location of a plant where railroad ties and other wood products were treated with creosote and then stored. The plant, which operated for 55 years, was formerly owned by Kerr-McGee. Now, the site is two separate properties. The Chicago and Northwestern Railroad uses the western 23 acres for automobile storage and loading, and the Milwaukee County Park Commission has designated the remaining 65 acres as a pubic park.

The area owned by the Railroad is fenced on all sides. The area owned by the County is not fenced, but does contain several warning signs that indicate the possible presence of hazardous materials.

WHAT'S NEXT

As RI data become available, EPA and WDNR officials will begin to evaluate the extent of site contamination and the potential for contaminant migration and human exposure. Appropriate short-term actions will also be taken, if necessary, to protect public health and the environment.

During the RI process, EPA will continue to keep the public informed about its progress. Based upon the findings of the RI, alternatives for addressing the contamination will be proposed. During the second major phase of the Superfund study — the Feasibility Study (FS) — the alternatives will be evaluated in detail. EPA and WDNR will then select a preferred alternative that is both environmentally sound and cost-effective. The entire Feasibility Study report will be presented to the public for comments.

FOR MORE INFORMATION

Anyone desiring additional information may consult various EPA documents pertaining to the Moss-American site. Copies of the applicable laws and Work Plans for the RI/FS are available at:

The Mill Road Library
6431 N. 76th Street
Milwaukee, Wisconsin
(414)278-3088

If there are any questions, the following EPA personnel may be contacted:

Frank Rollins
Remedial Project Manager
(312)886-4663

Jon Grand
Office of Pubic Affairs
(312)353-1325

U.S. EPA Region V
230 South Dearborn Street
Chicago, Illinois 60604
Toll Free Number: (800)621-8431
(9:00 to 4:30 weekdays)

MAILING LIST

Anyone wishing to be placed on the Moss-American mailing list, please fill out, detach, and mail this form to:

Office of Public Affairs
U.S. EPA Region V
230 South Dearborn Street
Chicago, Illinois 60604

ADDRESS _____

CITY _____ STATE _____

ZIP _____

AFFILIATION _____

LIABILITY AND LOCAL GOVERNMENTS

Under CERCLA and its 1986 amendments, Potentially Responsible Parties (PRPs) are those who owned or operated a superfund site, transported waste to the site, or generated waste that was transported to the site. Congress said that these parties were jointly and severally liable. The law does not consider motivation (i.e., a local government providing for waste disposal) and it does not excuse local units of government.

ABOUT CREOSOTE

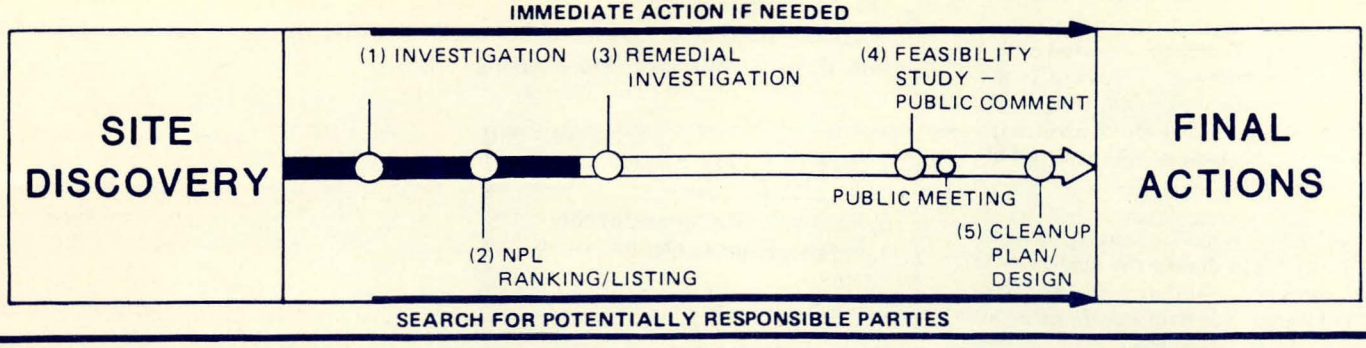
Description — Industrial creosote is a heavy oily liquid with a characteristic sharp, smoky smell and a brownish color. It is produced by distilling wood or coal tar at temperature above 200 degrees Celsius. Although its exact composition varies, creosote usually contains a variety of aromatic compounds (benzene derivatives).

Uses — Creosote, used chiefly as a wood preservative, is also used as a roofing pitch, a waterproofing agent, and as a fuel oil additive. Pure forms of creosote are also used in the pharmaceutical industry as antiseptics or disinfectants.

Health Effects — Creosote and its vapors are strong irritants. Acute (short-term) external exposure to high concentrations of creosote can cause burning, itching, eye injuries, or skin inflammation and discoloration. If ingested, creosote can also have acute toxic effects (cattle, for example, have been poisoned from licking telephone poles treated with creosote).

Suspected carcinogenic (cancer-causing) compounds are often present in creosote. Because its composition varies, however, exact health standards for creosote have not been established. Therefore, the concentrations of the individual components found in a sample of creosote are often used to determine chronic (long-term health risk from exposure.

SUPERFUND PROCESS EXPLAINED



In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) — more commonly known as "Superfund." This act authorized U.S. EPA to investigate and respond to known or threatened releases of hazardous substances. The total funding originally authorized in 1980 was $1.6 billion over 5 years.

In October 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA). This law authorized an additional $8.5 billion over the next 5 years. In the coming months, new funds will become available for work at the sites, such as the Moss-American site, where work has been slowed because of funding shortages.

The figure above provides a simplified explanation of how a Superfund response, like the one for the Moss-American site, works. It shows graphically the steps involved in the process.

After the site is discovered, it is (1) **inspected**, usually by the state. The state then (2) **scores** the site using a system that takes into account:

- Possible risk to population
- Hazard potential of substances at the site
- Potential for contaminating drinking water supplies
- Potential for polluting and harming the environment

If the site's problems are potentially serious enough, it will be listed on the National Priorities List (NPL), which is a roster of the Nation's highest priority waste sites.

Next, EPA (or the Potentially Responsible Parties with EPA supervision) conducts a (3) **Remedial Investigation (RI)**. The RI assesses the extent and severity of the contamination, the types of contaminants present, and who in the community may be at risk.

The RI is followed by a (4) **Feasibility Study** which examines a range of possible remedies for the site's contamination problems.

A (5) **Remedial Action Plan** is then selected and designed. Once this is finished, the actual remedial action can begin.

The time it takes to complete each of these five steps varies with every site. In general, an RI/FS sequence takes approximately 2.5 years. Designing the selected remedy may take 6 months to a year.

Implementing the remedy — the actual containment, treatment, or removal of the contamination — may take several years. If contaminated groundwater is involved, the final remedy may take many years.

Ongoing activities during the process include:

- **Continuous site monitoring** — If a site becomes an imminent threat to public health or the environment, EPA may implement an **immediate action**.
- **Community Relations** — Throughout the Superfund process, U.S. EPA tries to keep citizens and other officials informed. Opportunities for public comment are also available to provide U.S. EPA with information about citizens' questions, concerns, and opinions.
- Search for potentially responsible parties — Once identified, these parties are asked to participate in the process (once before the investigation begins and again before work to implement the final action is undertaken). If they refuse to participate, they may face various legal actions.

GLOSSARY

Acute Exposure — Acute exposure to a hazardous substance refers to an intense exposure occurring over a short period of time. Health effects from an acute exposure can have a sudden onset, a sharp rise, and a short course.

Aromatic Compounds — Organic compounds characterized by their greater tendency to evaporate. Sometimes called "volatile organic compounds," or "VOC's."

Aquifer — A particular zone or layer of rock or soil below the ground surface that is capable of producing usable quantities of groundwater to wells or springs.

Baffles — A system of slats along a drainage route that will cause heavy materials (including certain contaminants) in running water to settle out and accumulate.

Chronic Exposure — Chronic exposure to a hazardous substance generally refers to frequent or constant exposure, often to small quantities of the contaminant, occurring over a long period of time. Chronic health effects may take very long periods of time to appear, or may not be apparent at all.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) — Also known as **Superfund**, this law authorizes the federal government to respond directly to releases (or threatened releases) of hazardous substances that may endanger public health, welfare, or the environment. The U.S. Environmental Protection Agency (EPA) is responsible for managing the Superfund program.

Groundwater — Underground water that fills pores in soil or openings in rocks to the point of saturation.

Migration — Migration refers to the movement of hazardous substances through water, air, or soil.

Pathway — Pathways are routes for contaminant migration (see migration). Most commonly, these pathways include groundwater flow, surface water flow, and air circulation.

Pretreat — When hazardous wastes are "pretreated," they are subjected to special processes prior to disposal into a body of water or a sanitary sewer. Pretreatment does not remove all of the contamination from the waste liquid, but does reduce the "strength" of the discharge. Usually, waste materials collected at a pretreatment facility must be disposed of in some manner.

Toxic — A chemical is toxic if it damages living tissue, impairs the central nervous system, or causes birth defects, illness, or other adverse health effects when eaten, drunk, inhaled, or absorbed through the skin.