



**Missouri Department
of Natural Resources**
Hazardous Waste Program

Both photos by Julieann Warren

Before Cleanup



SUPERFUND

IN MISSOURI



The Kem-Pest Site in Cape Girardeau, After Cleanup

PUB002212

“Superfund’s mission it to protect human health and the environment by cleaning up hazardous substance sites.”

SUPERFUND

The United States Congress established the federal Superfund Program in 1980 to clean up uncontrolled and abandoned hazardous substance sites. A more limited program was established in Missouri in 1983. The United States Environmental Protection Agency (EPA) administers the federal Superfund Program. The Missouri Department of Natural Resources administers the state Superfund Program. The federal and state programs work together to provide financial, legal and technical aid for hazardous substance cleanups.

The Superfund Program addresses sites where hazardous substances were disposed of or spilled many years ago, before there were laws regulating these substances.



DNR photo by Karen Cass

Lead contaminated yards in Jasper County are excavated, filled in with clean soil and re-seeded to protect young children from lead contamination.



DNR file photo

PUBLIC SAFETY COMES FIRST

Special care is taken to protect the public health during all superfund activities. Specialized equipment and trained staff are used for cleanup activities, and strict safety precautions are taken to ensure that contaminants are not spread beyond the site. The federal, state and local health departments work throughout the cleanup to advise on special health concerns.

To make certain that safe procedures are followed, a plan of action is developed for each site. There are several steps involved in the cleanup process. These include preliminary assessments, site investigations, remedial investigations, feasibility studies, public meetings and engineering designs and construction.

Workers wear appropriate protective clothing while on sites and follow strict safety procedures.



Photo by Nancy Priddy

Contaminated pond near Labadie has been cleaned up.

SITE DISCOVERY AND INVESTIGATION

When a possible hazardous substance site is reported, often by a local citizen, the department or the EPA begins an investigation. The agencies will visit the site, talk with neighbors, take photos, check records and then decide if the site warrants additional investigation.

When possible, the agency determines what was buried, dumped or spilled, when the site became contaminated, and who contaminated the site. If the site is a potential threat to human health or the environment, the department will conduct sampling as needed for soil, groundwater and surface water to determine levels of contamination. If the investigation determines that a site warrants cleanup, it may be referred to the state Voluntary Cleanup Program, state Cooperative Program or to EPA for either a Superfund removal action or to be listed on EPA's National Priorities List.

NATIONAL PRIORITY LIST (NPL)

The worst contaminated sites may be recommended for the National Priorities List, a nationwide list of EPA's highest priority sites. Sites may be referred to EPA or may remain with the Department of Natural Resources as lead agency to oversee cleanup.



Photo by Pia Capell

Fencing and plastic covering must be replaced at the Armour Road site in North Kansas City to protect people from exposure to arsenic.



DNR file photo

Soil cap is in place at a former landfill near Trenton.

REGISTRY

Some hazardous waste sites are listed on *Missouri's Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites* (Registry), which protects potential buyers from unknowingly purchasing contaminated property. When a property is placed on the Registry, its history as a hazardous waste disposal area is filed with the Recorder of Deeds. In addition, when property listed on the Registry is being sold, the seller must notify the buyer,

prior to the sale, that the site is listed on the Registry. Property owners often remediate the contamination in order to remove the property from the Registry and to decrease potential liability. If a site is removed from the Registry after cleanup, this change is filed with the Recorder of Deeds. In order to protect the public, the use of property on the Registry may not change substantially without the written approval of the department.



DNR file photo

Removal actions may include digging up contaminated soil and sending it to a hazardous waste landfill or a soil repository.

The Missouri Registry Annual Report, published by the department, provides information about sites that are contaminated with hazardous waste.

WHO PAYS FOR CLEANUPS?

State and federal laws require the Potentially Responsible Parties to assume the financial burden of cleaning up contaminated sites. PRPs are the persons who caused the contamination or may be the property owner. If no PRP can be found, the cleanup can be financed by the federal government.

STEPS TO CLEANUP

The cleanup begins after a site has been placed on the NPL, the Registry, or is deemed a threat to human health and the environment. Some sites require immediate action because of the danger of explosion, fire, chemical poisoning or human contact with the contamination. The department's Emergency Response Team is on call 24 hours a day. Staff will take emergency action when necessary, to remove immediate threats to human health and the environment.

Superfund actions are a possible next step, when short-term action is needed to stabilize or clean up a site. The Department of Natural Resources or the EPA conduct removal actions to prevent further contamination or health hazards. Removal actions take a relatively short time. An example is the excavation and proper disposal of

contaminated soil from residential yards where lead contamination is causing a health problem for the residents. A removal action addresses the most contaminated areas, in order to prevent the hazardous substance from causing a health problem, spreading or seeping off-site or into groundwater.

Complete cleanups may take many years. A Superfund action is designed to comprehensively cleanup a site on the NPL.

Types of sites that typically require remedial actions include old landfills, abandoned manufacturing plants, old lead and zinc mined areas, illegal dumps or pits, and lagoons filled with hazardous chemicals. Before a remedial action begins, a remedial investigation is performed to determine the extent of cleanup needed.



Pacific Metal Finishing is clean after the department's removal action.



In the investigation phase, engineers, hydrologists, geologists, health specialists and other experts study the extent of the contamination, the groundwater flow under the site, surface water runoff and potential health effects at the site.

A feasibility study is performed. Possible technical solutions for the site are identified, and their advantages and disadvantages are determined. During the study, community input is welcomed through public meetings and comment periods. Considering the concerns of the community and other factors, state and federal staff then select a cleanup option that is environmentally sound.

An engineering plan or remedial design is developed next. The remedial action then begins at the site. A contractor; who must be approved by the department or EPA, usually performs the work at Missouri Superfund sites. The department or EPA oversees the entire cleanup process. After remedial work has been completed, sites are often monitored for many years to be sure the contamination has been adequately addressed. The Department of Natural Resources provides oversight for monitoring.



DNR photo by Don Van Dyke

Sampling for Trichloroethylene at the Newton County TCE site south of Joplin

STATE CLEANUPS

The state oversees cleanup of some sites without EPA involvement. The state operated the Voluntary Cleanup Program and the Cooperative Program that allow responsible parties to clean up sites voluntarily and cooperatively through an agreement with the state.



DNR file photo

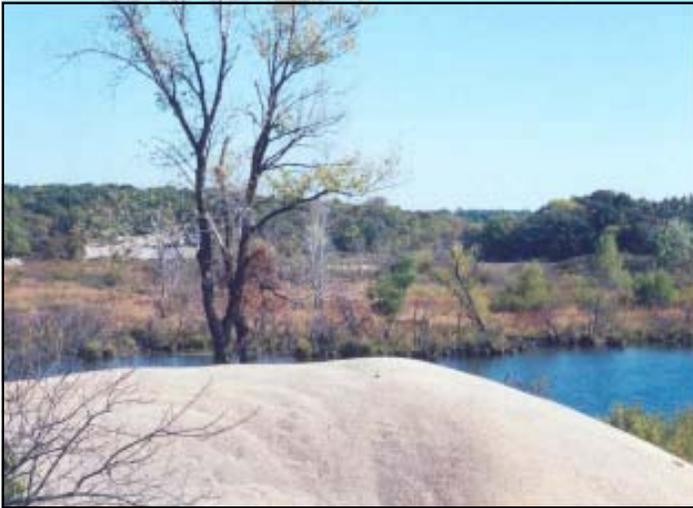
Taking deep soil samples with the GeoProbe®



DNR file photo

While investigative work is ongoing, department staff are available to answer questions from the residents about the process occurring in their neighborhood.

DNR File Photo



Historic lead mining waste includes chat, tailings and subsidence ponds.

DNR file photo



NATURAL RESOURCE DAMAGES

The department director is the trustee for state natural resources. When land or other natural resources are Injured, the trustee is responsible for determining the severity and work with the potentially responsible parties to restore the natural resources to their original condition. The trustee may also recover the momentary value of the injured natural resources. The compensation is then used to restore the injured natural resources to their original condition or to replace them.



DNR photo by Van Beydler

Public meetings provide opportunities for community input into the Superfund process.

COMMUNITY INVOLVEMENT

Community participation is an important ingredient to the Superfund process. Agencies host public meetings or availability sessions to share information with interested citizens. Issues and concerns of local people are considered in the decision making process for Superfund sites. Cleaups are more efficient and fit the needs of the community better when interaction is active between the agencies and citizens. Several communities have formed Community Advisory Groups (CAGs) that are associated with large Superfund sites. CAGs provide structured input into site activities.



DNR photo by Van Beydler

Local citizens share valuable information about history and contamination at the site.



Photo by Don Van Dyke

It takes time to clean up complex environmental problems that have developed over many years. The Superfund Program is working to resolve these hazardous substance problems in Missouri communities and to protect human health and the environment.

**Missouri Department of Natural Resources
Hazardous Waste Program
Superfund Section**

P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-8629 or 1-800-361-4827
www.dnr.mo.gov/env/hwp/sfund/spf



Missouri Department of Natural Resources
Hazardous Waste Program
www.dnr.mo.gov