
SUPERFUND

A Report on Use of the Minnesota Environmental Response, Compensation and Compliance Fund during Fiscal Year 1990



November 1, 1990

The Honorable Gene Merriam, Chair
Senate Finance Committee
Legislative Commission on Waste Management
122 Capitol
St. Paul, Minnesota 55155

Dear Chairman Merriam:

We are pleased to present you with the first report on the status of the state of Minnesota's Superfund Program that has been prepared jointly by the Minnesota Pollution Control Agency (MPCA) and the Minnesota Department of Agriculture (MDA). The joint preparation and format changes in this report on the use of the Environmental Response, Compensation and Compliance Fund during fiscal year 1990 are positive additions that will enhance the report.

The report has been designed primarily to fulfill the requirements of Minn. Stat. § 115B.20, subd. 6. Although the main focus of this report is a summary of fund expenditures during fiscal year 1990, it also includes background on several of the accomplishments that have been made under the state's program. Future goals and recommendations for legislative action are also provided by MPCA and MDA staff.

If you should have any questions concerning the contents of this report, please contact Gary Pulford at the MPCA, 612/296-7290 or David Read at the MDA, 612/297-3997.

Sincerely,



Gerald L. Willet
Commissioner
Minnesota Pollution Control Agency



Jim Nichols
Commissioner
Minnesota Department of Agriculture

GLN/JN:jc

Enclosure

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SUPERFUND

A REPORT ON USE OF THE MINNESOTA ENVIRONMENTAL RESPONSE, COMPENSATION AND COMPLIANCE FUND DURING FISCAL YEAR 1990

November 1990

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Executive Summary

A Report on
Use of the
Minnesota
Environmental
Response,
Compensation
and
Compliance
Fund during
Fiscal Year
1990

The Minnesota Environmental Response and Liability Act (MERLA) of 1983 established the Environmental Response, Compensation and Compliance Fund (Fund) and authorized the Minnesota Pollution Control Agency (MPCA) to spend Fund dollars to investigate and clean up releases of hazardous substances. The Minnesota Comprehensive Groundwater Protection Act of 1989 amended MERLA to authorize the Minnesota Department of Agriculture (MDA) to access the Fund to investigate and clean up incidents involving agricultural chemicals.

The directives of MERLA are carried out through the Minnesota Superfund Program. This report details, as required by Minn. Stat. § 115B.20, subd. 6, the activities for which Fund dollars have been spent during Fiscal Year 1990 (FY 90) by MPCA and MDA and puts forth initiatives for the Fund for FY 91.

To ensure the continued success of the Superfund Program, MPCA and MDA staff offer the following recommendations:

1 Landfills and Traditional Superfund sites

Significant additional resources either within or outside the Fund will be needed in the future to address response actions at landfill sites. Due to political subdivision liability limits, decreasing availability of federal money, bankruptcies among private landfill operators, costs of landfill cleanup, and the sheer number of sites involved, additional money will be needed to ensure that solid waste landfills can be properly closed to protect the public and environmental health of the state.

The growing use of Superfund at a number of different sites may lead, eventually, to the Fund being exhausted. Traditional Superfund sites which are approaching the remedial action phase of cleanup will place a greater demand on the Fund over the coming years.

By the end of FY 93, a shortfall in excess of \$27 million is projected for Superfund to address both landfills and traditional sites. While voluntary cleanups by responsible parties may reduce this shortfall, even if alternative funding to address landfills is found, a shortage of funds for use at traditional sites appears likely. The legislature must address this situation to ensure the continued success of Superfund.

2 Department of Agriculture

MDA has limited staff resources to work on certain Superfund activities, such as pesticide or herbicide releases. In order to address current and future needs for assessing and scoring sites and overseeing/managing fund financed emergencies or long-term investigations and cleanups, MDA needs two additional Superfund positions.

3 Property Transfer Program

Additional staff resources are necessary to conduct state funded Property Transfer efforts. The program continues to grow as the demand for property transfer assistance increases from property owners, bankers, insurers, and lawyers. Demand for cleanup assistance under this program also continues to increase.

November
1990

The following is a summary of expenditures and incomes of the

Superfund Program with a review of Fund accomplishments.

Superfund Program Expenditures and Income

Expenditures from the Fund	FY 90	FY 83 - FY 90 (Cumulative)
MERLA Fund Expenditures	\$5,188,664	\$22,187,251
Unliquidated Obligations	583,360	583,360
Total Expenditures and Obligations	5,772,024	22,770,611
Income to the Fund		
Appropriations	1,000,000	16,400,000
Fines and Reimbursements Paid by Responsible Parties	2,011,967	7,553,680
Hazardous Waste Tax	830,916	6,848,971
Interest	1,878,195	5,835,020
MERLA Fund Balance as of June 30, 1990		\$13,867,060
Federal Superfund Dollars		
Secured	\$12,700,223	\$36,280,223
Expended	\$ 4,838,908	\$15,529,897

Superfund Program Accomplishments

	FY 90	FY 83 - FY 90 (Cumulative)
Sites Added to the State's Permanent List of Priorities	9	165
Sites Deleted from the State's Permanent List of Priorities	1	12
Sites Added to the Federal National Priorities List	2	42
Responsible Party Response Actions Initiated	6	97
MERLA Funded Response Actions Initiated	0	26
Federally Funded Response Actions Initiated	2	17
Remedial Actions Complete or Ongoing	8	52
MPCA Involvement in Lawsuits	5	11
Emergencies	1	21
Abandoned Barrels Secured	76	312
Property Transfer Assistance		
File Search Requests	1692	3500+ (FY 85-90)
Cleanup-Assistance	69	125 (FY 89-90)

Introduction

The Minnesota Environmental Response and Liability Act (MERLA) of 1983 established the Environmental Response, Compensation and Compliance Fund (Fund) and authorized the Minnesota Pollution Control Agency (MPCA) to spend Fund dollars to investigate suspected releases of hazardous substances and clean up releases and threatened releases.

The Minnesota Comprehensive Groundwater Protection Act of 1989 amended MERLA to authorize the Minnesota Department of Finance (MDF) to administer the Fund, but retained the language regarding appropriation of the money to MPCA and the Minnesota Department of Agriculture (MDA). In 1990, changes were made in the appropriation language to give full authority to the Commissioner of Finance.

This reauthorization allows MDA equal access to the Fund to investigate and clean up releases involving agricultural chemicals (typically pesticides and fertilizers). MPCA and MDA jointly propose additions to the state's Permanent List of Priorities (PLP) through the MPCA Citizens Board by publishing in the state register a list put together jointly by the two agencies. MDF, MDA, and MPCA have been working on a Memorandum of Agreement (MOA) to address various concerns involved in this change.

This report outlines the use of the MERLA Fund during FY 90, summarizes the status of the Minnesota Superfund program, and puts forth initiatives for the Fund for FY 91.



The Minnesota Legislature passed the Superfund Law in 1983

Program Overview

The Minnesota Superfund program is composed of the following functions:

1. to discover and conduct preliminary investigations of potential hazardous substance releases from abandoned hazardous waste sites, solid waste sites, or agricultural chemical sites, and to identify responsible parties;
7. to provide assistance to buyers, sellers, bankers, insurers, and others in the transfer of property where potential or real contamination problems and liability issues exist.

The program now includes a wide variety of sites, from traditional industrial sites to solid waste landfills to agricultural chemical sites.

Administrative changes better allow the Superfund program to respond to new information on emerging technologies, changes in federal law, more accurate health risk information, and

"The Superfund program (must) respond to new information on emerging technologies, changes in federal law, more accurate health risk information, and lower detection limits for some contaminants."

lower detection limits for some contaminants. The program also has to remain flexible to accommodate a broader range of sites.

2. to respond to emergency situations, such as a contaminated drinking water supply or drum removal;
3. to initiate remedial investigations and feasibility studies at identified sites;
4. to develop remedial designs and implement remedial actions for the final cleanup of sites;
5. to conduct the administrative activities for the management of response action contractors, the MERLA Fund, and federal Superfund money secured under Cooperative Agreements with the U.S. Environmental Protection Agency (EPA);
6. to conduct public information and community relations activities; and

Preventing environmental damage is a primary focus of the Superfund Program. The money in the Fund protects resources and maintains Minnesota's natural heritage. In addition, public awareness and interest in the Superfund is increasing as concerns over the environment and cleanup efforts become vital in the everyday lives of Minnesota citizens.

Status of the Fund

The status of the Fund as of June 30, 1990, is detailed in Table 1 (General Ledger). The Fund balance at the end of FY 90 is \$13,867,060.

In 1983, the Fund was established with a \$5,000,000 transfer from the General Fund. An additional \$4,500,000 in FY 88 and \$5,900,000 in FY 89 were appropriated from the Water Pollution Control Fund. Another \$1,000,000 was transferred from the General Fund in FY 90. The Fund

investments are managed by the Department of Finance and the Hazardous Waste Tax is collected by the Department of Revenue. MPCA has recovered \$7,553,680 in the form of penalties and reimbursements from responsible parties since the Fund was established.

Table 1 General Ledger Balance as of June 30, 1990
Environmental Response Fund

Appropriations to Date

Original (FY 83)	\$ 5,000,000
Transfers from Water Pollution Control Fund (FY 88 - FY 89)	\$10,400,000

Transfer from General Fund (FY 90)	\$ 1,000,000
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Income to Date (FY 83 - FY 90)

Interest on Investments	\$ 5,835,020
Fines and Reimbursements paid to the Fund by Responsible Parties	\$ 7,553,680
Hazardous Waste Taxes	\$ 6,848,971

Expenditures and Obligations to Date

(FY 83 - FY 90)	\$22,770,611
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Fund Balance as of June 30, 1990	\$13,867,060
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"...greater than fifty percent of the administrative costs ... result in securing response action commitments from responsible parties."

A summary of Fund expenditures during FY 90 is presented in Table 2 below.

Table 2

FY 90 State
Superfund
Expenditures
by MPCA

General MPCA Support Costs	\$ 595,937
Superfund Program Administrative Costs	2,796,995
Regional Offices Support Costs	40,485
Statewide Indirect Costs	55,228
Specific Contractual Costs*	1,700,019
Unliquidated Obligations	583,360
TOTAL	\$5,772,024

* Specific expenditures provided in Table 6.

The General MPCA Support Costs are expended to run the Superfund Program within the agency and include telecommunications, facility rental, and purchasing functions. The Superfund Program Administrative Costs represent salaries for 56 staff, as well as travel, equipment, and supply expenditures associated with responding to emergencies and implementing site cleanups. MPCA staff estimate that greater than fifty percent of the administrative costs that are incurred by MPCA staff are expenditures that result in securing response action commitments from responsible parties.

The legal cost of services rendered by the state Attorney General's Office for non-site specific expenses make up a portion of the MPCA administrative cost. Laboratory costs, a large portion of specific contractual costs, are expenses paid to the Minnesota

Department of Health (MDH) for analytical services.

For MDA, no expenditures have been made from the Fund account in FY 90. The last Fiscal Year has been a transition period for MDA when proper accounts were planned and allocations from the Fund were proposed for FY 91. MDA expenditures from the Fund will begin during FY 91 when Superfund staff are in place. MDA expenditures will be outlined in next year's report.

How the Fund Is Used

The Minnesota Superfund process for hazardous waste site cleanup is diagrammed in Figure 1. Potential Superfund sites are identified by MPCA and MDA through telephone calls from concerned citizens, routine inspections by agency staff, reports of hazardous substance spills, and analyses of drinking water supplies sampled by MDH.

Through a Cooperative Agreement with EPA, MPCA has established a program to assess potential hazardous waste sites in Minnesota. Initially, a preliminary assessment is conducted involving a general review of readily accessible information to characterize a site and to determine if the site warrants further action.

If further action is warranted, a site investigation is conducted. Data collected is used to rank a site using the Hazard Ranking System (HRS). The HRS scores are used to establish relative priorities

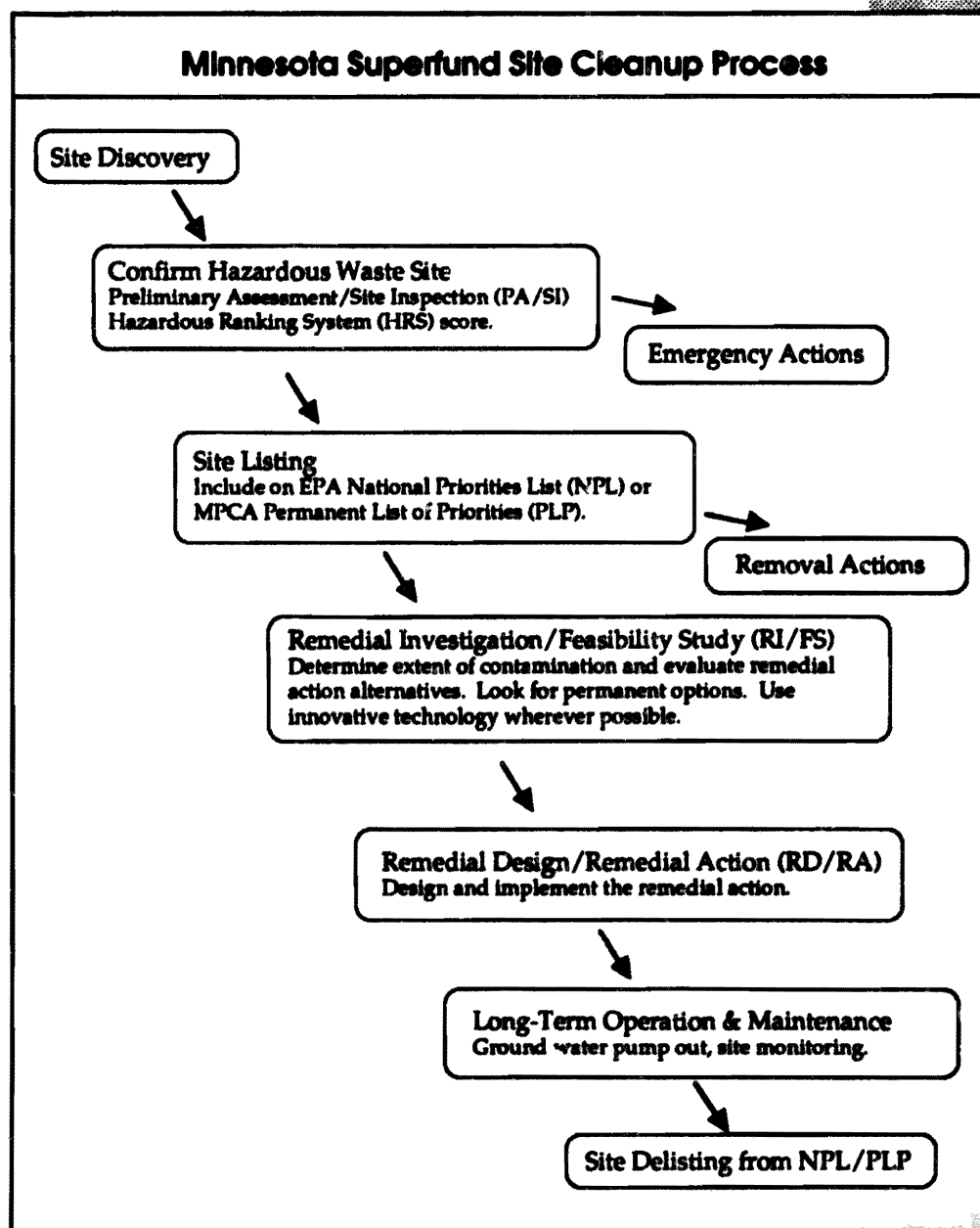


Figure 1: The Minnesota Superfund process

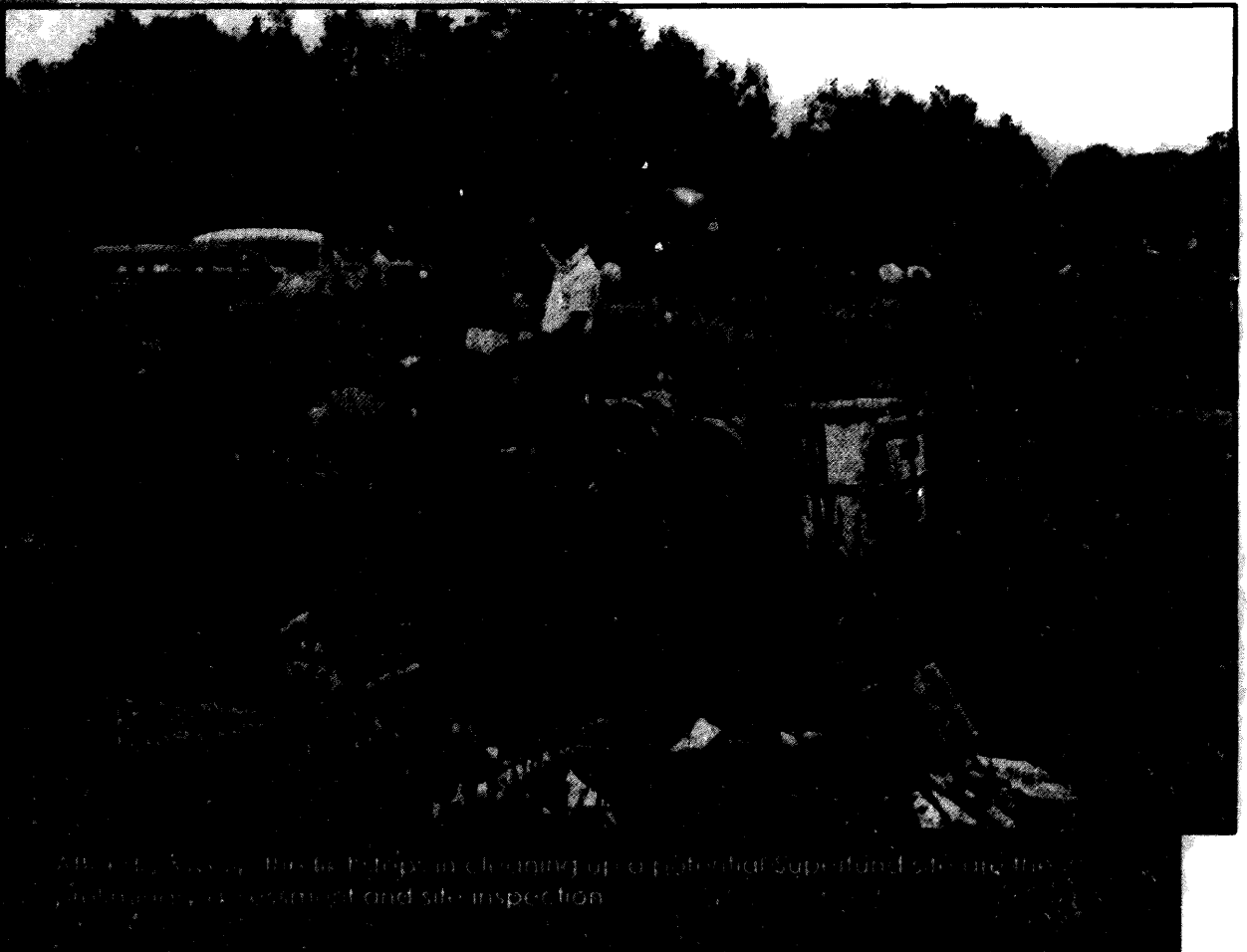
"...a remedial investigation/feasibility study is conducted to determine the extent of contamination and to evaluate remedial action alternatives."

among sites and to determine a site's eligibility for federal and/or state Superfund monies for response actions.

The site may then be added to EPA's and/or MPCA's priorities lists, after which a remedial investigation/feasibility study is conducted to determine the extent of contamination and to evaluate remedial action alternatives.

EPA has developed a new Hazard Ranking System (HRS II) which should operate the same as the current HRS.

MDA essentially performs the same tasks as MPCA, but does not have a comparable cooperative agreement with EPA.



At the site, MDA's first step is cleaning up a potential Superfund site, including the preliminary assessment and site inspection.

Actions Taken Using Fund Dollars

Priority Sites

MPCA has identified and listed 433 sites on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), a nationwide inventory of potential hazardous waste sites. Ten of these sites were added in FY 90. Preliminary assessments have been conducted at 389 of these sites; 17 during FY 90. Fifteen site investigations were completed during FY 90.

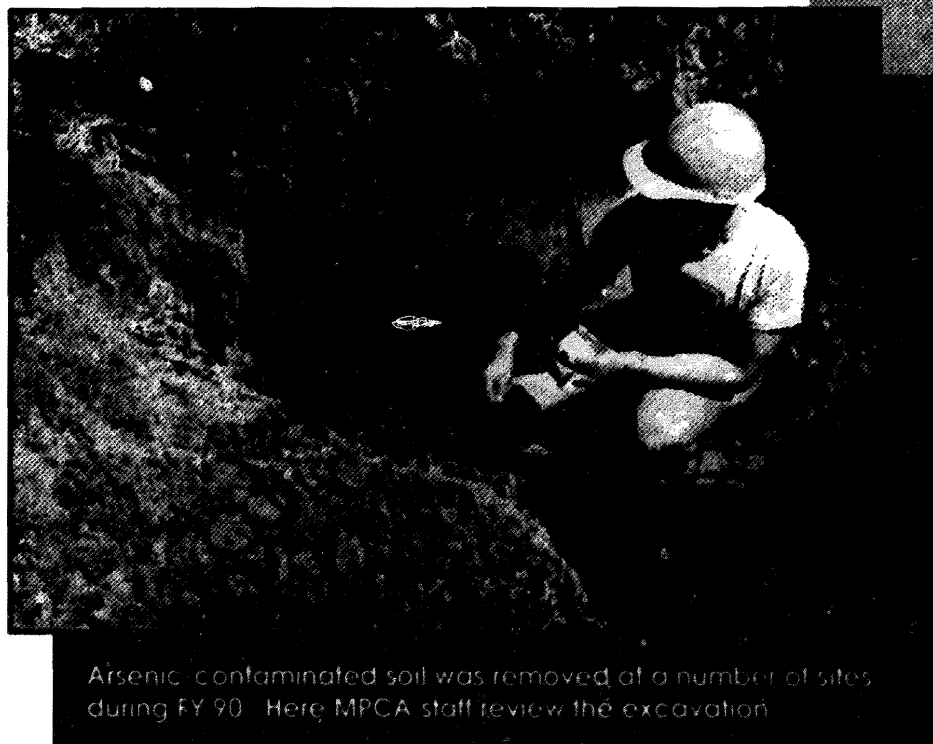
Currently there are 165 sites listed on the PLP for investigation and cleanup, nine of these were added to the list during FY 90. An additional 15 sites are proposed to be added to the PLP in December 1990 and one site is proposed to be deleted for a total of 179 sites. Forty-two of the 165 sites currently listed on the PLP are also included on the federal National Priorities List (NPL); remedial actions at those 42 sites are eligible

for federal funding, if responsible parties are unwilling or unable to do the work and monies are available.

As of October 15, 1990, there were 124 sites in the cleanup process "pipeline" (i.e., response actions initiated which include remedial investigation and feasibility study, remedial design and implementation of final remedial action). Response actions

at 97 of these sites are being conducted by responsible parties. MERLA Fund or federal dollars have been spent at the remainder of the sites for response actions.

Approximately 45,000 pounds of arsenic have been cleaned up at 250 sites since 1984. A number of arsenic-contaminated sites have been cleaned up using MERLA Fund dollars during FY 90. These have



Arsenic-contaminated soil was removed at a number of sites during FY 90. Here MPCA staff review the excavation.

involved actions around the state.

MPCA's arsenic program is divided into three parts: large arsenic site cleanups, discoveries of above ground barrels or other containers of arsenic which can be removed and disposed of elsewhere, and below ground arsenic where soil may be contaminated and must be excavated and disposed of at another location.

"Eight Records of Decision, which select a specific remedial action for a site, were signed in FY 90 for sites around the state."

On June 26, 1990, MPCA Citizens Board approved litigation authority for the commissioner to request the Minnesota Attorney General's Office to initiate legal action against the U.S. Department of Defense (DOD) for past agency costs associated with work on the Former Duluth Air Force Base and the U.S. Naval Industrial Reserve Ordnance Plant (NIROP) in Fridley.

Litigation authority had been previously approved for the Twin Cities Army Ammunition Plant (TCAAP) and the Twin Cities Air Force Reserve Base, two other sites being addressed by the DOD's Installation Restoration Program. MPCA reached a settlement with the Army for the TCAAP site in 1987. Approximately \$200,000 in past MPCA costs are in dispute at the remaining sites, but current cleanup actions at all sites are progressing with varied degrees of cooperation by the responsible military entities.

At the Former Duluth Air Base, the Air Force Tactical Air Command and the National Guard Bureau have completed a site investigation which focused on 10 areas including dump sites, fire training areas, a tank farm, and an area of low-level radioactive wastes. A preliminary cleanup plan will be proposed later in the year.

Records of Decision (RODs)

RODs were signed at eight sites in FY 90. Groundwater pump-out and land treatment of contaminated soil is underway at the Joslyn Manufacturing and Supply Company site in Brooklyn Center.

A ROD was signed at the Isanti Solvent site in Isanti County.

Another groundwater pump-out system is being planned at the Former Windom Municipal Landfill where a clay cap has been constructed to reduce water seeping through the landfill.

An interim pump-out system has been operating at the Honeywell-Golden Valley Site to address contaminated groundwater at the site. The ROD specifies discharge of contaminated groundwater to the Metropolitan Waste Control Commission (MWCC), with a provision for on-site treatment if levels of volatile organic compounds (VOCs) exceed limits established by MWCC.

At the Hunting Elevator Company in Lansing, MPCA has approved a new water supply to replace seven private wells affected by pesticide contamination. The remedy consists of seven new wells in a deeper aquifer.

Contaminated groundwater is being treated at the Control Data Printed Circuits Operation in St. Louis Park by air-stripping. Carbon filtration is being used to eliminate potential air emissions, and water treated to remove all detectable VOCs will be discharged to Minnehaha Creek.

A ROD signed in June for the University of Minnesota Rosemount Research Center site identifies excavation, thermal desorption with on-site incineration as the method for cleaning up and containing soils contaminated with various concentrations of PCBs, furans, dioxins, and lead.

A federally funded Superfund investigation at the Adrian Municipal Well Field site confirmed that contaminants affecting two of the city's wells are petroleum products from underground storage tanks.

Request for Response Action (RFRA)

The MPCA Citizens Board has issued RFRA's at six Minnesota Superfund sites during FY 90.

A RFRA was issued for the Olmsted County Sanitary Landfill in July of 1989. In October, parties responsible for the Waste Disposal Engineering site in Andover were issued a RFRA and the responsible party for the Twin Cities Air Force Reserve Base in Minneapolis was issued a RFRA the following month.

In March, Schloff Chemical in St. Louis Park was issued a RFRA.

At the May meeting, the Board issued RFRA's to several businesses responsible for cleanup of the Arrowhead Refinery site in Hermantown. Used waste oil was processed at the site. A RFRA was issued on June 26 to Ford Motor Company for the Ford Twin Cities Assembly Plant in St. Paul. Solvent and metal contamination have been detected at the Ford Site.

Emergency Actions

Since 1983, the Agency has responded to 19 MERLA-funded emergencies involving contaminated drinking water supplies and has taken action to provide affected residences with alternate drinking water.

MPCA and responsible parties temporarily continue to supply safe drinking water to affected residences at all of these sites. Permanent supplies are planned and action toward that end has begun.

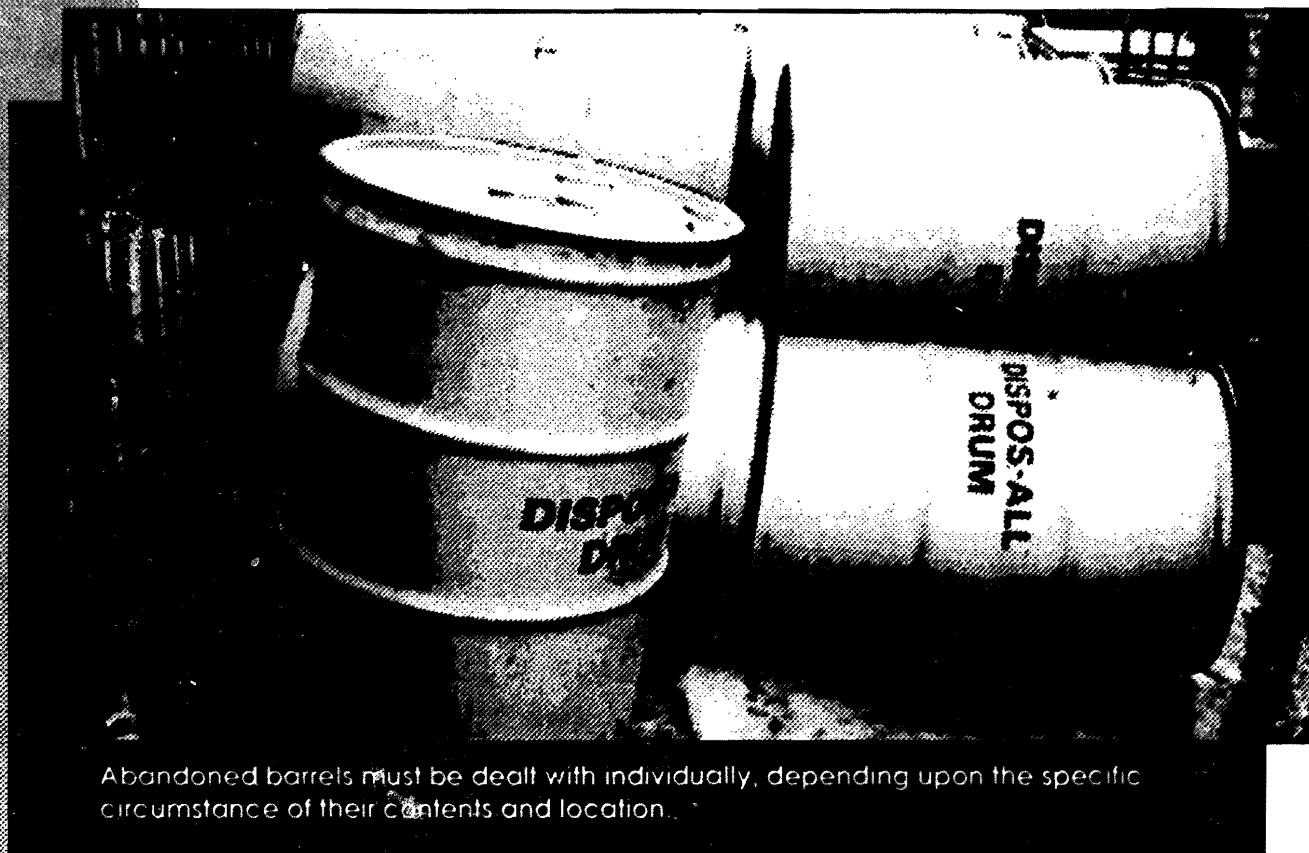
During FY 90, Fund monies were used during the initial stages of an emergency waste tire pile fire near Wawina in Itasca County.

While not a declared emergency, a back-up well is providing City of Rice residents with drinking water. Routine testing of a municipal well in the city revealed levels of the solvent tetrachloroethene above EPA's Maximum Contaminant Levels for drinking water. The well has been shut down while MPCA staff work to determine the source of the contamination.

Communities receiving alternate drinking water

Adrian	Isanti County	New Brighton/Arden Hills
Hermantown	Lakeland/	Northern Township
Askov	Lakeland Shores	Spring Grove
Atwater	Lansing	St. Anthony
Duluth	LeHillier	St. Paul Park
Garfield	Long Prairie	Waite Park
Hadder	Medford	

Abandoned Barrel Program



Abandoned barrels must be dealt with individually, depending upon the specific circumstance of their contents and location.

During FY 90, there were 62 complaints of abandoned barrels. At five sites, leakage from drums was discovered and the cases were transferred to the Spills Unit of MPCA's Hazardous Waste Division. Sixteen other sites required no action. The services of MPCA contractors were required for 41 of the 62 complaints received. Of the 41 cases, six turned out to be non-hazardous waste situations where the drums contained only water and/or dirt. Consequently, 35 of the 62 complaints received in FY 90 involved the abandonment of hazardous wastes.

The following is a breakdown of the 35 cases involving barrels showing the number of cases for the various types of

hazardous wastes dealt with by the Abandoned Barrel Program:

- | | |
|----|---------------------------------|
| 11 | Fuel Oil/Used Oil/Solvents |
| 8 | Paint/Varnishes/Solvents |
| 6 | Unknown Organics |
| 3 | Various (Multiple waste stream) |
| 2 | Pesticide Wastes |
| 2 | Cyanide Containing Wastes |
| 1 | Petroleum Distillates |
| 1 | Coal Tar Emulsion |
| 1 | Sulfamic Acid (pH <1.0) |

A total of 76 abandoned barrels were recovered in FY 90.

Types of Sites in Superfund

Sites on the PLP

All sites listed on the PLP have been assigned to one or more response action classes as required by MPCA rules. Each of the four response action classes is defined as follows:

Class A- Declared Emergencies

This class includes all sites at which an emergency has been declared by the MPCA or MDA Commissioner. An "emergency" means that there is an imminent risk of fire or explosion, that a temporary water supply is needed where an advisory has been issued, or that immediate adverse human health effects may be anticipated due to direct contact or inhalation and an advisory has been issued.

Currently, five sites are listed in Class A. These are emergencies which occurred during FY 90 and have yet to be placed in another class. They include: the Duluth Former City Dump and groundwater contamination at Askov, Lakeland, St. Paul Park, and Winona.

Class B- Response Actions Completed and Operation and Maintenance/Long-term Monitoring Ongoing

This class includes all sites where response actions have been completed and long-term monitoring of these completed actions is in progress. This class also includes all sites where activities are necessary to operate and maintain response actions that have previously been completed. A list of these 32 sites is shown in Table 3.

Table 3 Class B sites on the proposed 1990 PLP

Atwater Municipal Well Field
Boise Cascade Paint Waste Dump, Ranier
Boise Cascade/Medtronic, Fridley
Boise Cascade/Onan, Fridley
Burlington Northern, Brainerd
DNR-Duxbury Pesticide Site
Electric Machinery, St. Cloud
Fairbault Coal Gasification Plant Site, Fairbault
FMC Corp, Fridley
General Mills, Minneapolis
Hopkins Agricultural/Allied Chemicals, Minneapolis
Hutchinson Technology, Inc.
Ironwood Sanitary Landfill, Spring Valley
Jackson Municipal Well Field
Kurt Manufacturing, Fridley
Lund's Farmer Seed and Nursery, St. Cloud

McLaughlin Gormley King Co., Minneapolis
Minneapolis Community Development Agency/FMC
Nutting Truck and Caster, Fairbault
Oakdale Dump
PCI, Inc., Shakopee
Perham Arsenic Site, Otter Tail County
Relly Tar, St. Louis Park
St. Regis Paper, Cass Lake
3M Kerrick Disposal Site, Kerrick
Tonka/Woyke Site, Annandale
Wadena Arsenic Site
Walke Park Groundwater Contamination Site
Weisman Scrap, Winona
West Duluth Industrial Site
Whittaker Corporation, Minneapolis
Winona County Sanitary Landfill

"Sites in Superfund are ranked in Class A, B, C, and D, depending upon their priority status."

Class C- Response Actions Necessary or in Progress or First Year Operation and Maintenance at a Site

This class includes all sites where remedial design and implementation of response actions (other than Class A or B) such as barrel removal, soil decontamination, first year groundwater pump out or monitoring are necessary to effect a permanent remedy or cleanup of a site. There are 146 sites listed in Class C.

Class D- Remedial Investigations and Feasibility Studies (RI/FS) Necessary or in Progress

This class includes all sites which require a remedial investigation (RI) to determine the extent, magnitude, and nature of the release or threatened release, and a feasibility study (FS) to evaluate and select response action(s). There are currently 127 sites listed as Class D.

Since sites may be listed under more than one class depending upon their status, the totals of Class A, B, C, and D sites is much greater than the total number of sites on the PLP. More than one listing indicates the site may have a number of actions pending.

Deleted Sites

Since the PLP was created, 12 sites have been deleted from the list either because cleanup of known contamination at these sites has been completed and no further action is thought to be necessary or the site was combined with another site.

Table 4. Sites deleted from the PLP.

Airco Lime Sludge Pit
DNR-Nett Lake/Orr Pesticide Site
Ecolotech Inc., Minneapolis
Former McKay Manufacturing Company
43 East Water Street
Lost Lake Dump Site
Maple Plain Dump
Morris Arsenic Site
Northern Township Groundwater Contamination
Polymetals Products, Inc.
Portec-Pioneer Division (FY 90)
Sonford Products/Abandoned Trailer Site

Responsible Party Actions

Since the passage of MERLA, responsible parties have committed an estimated \$158 million to the cleanup of hazardous waste sites and have paid penalties and made reimbursements to the Fund of \$7,552,489 to cover costs incurred by MPCA in administering and overseeing the site cleanup activities. During FY 90, \$2,010,776 was reimbursed. Of this amount, \$1,000,000 was paid by 3M after a stipulation agreement was signed in regard to air quality at their Chemolite incinerator.

historical documents, and old fire insurance maps. A database that includes people and companies involved with a site is created to track information.

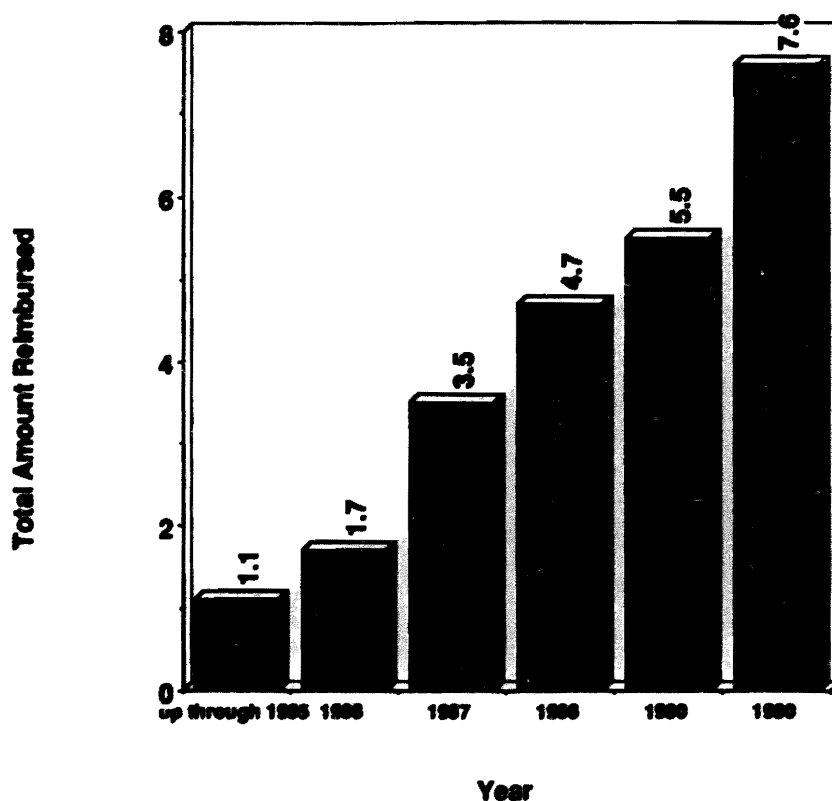
Letters and questionnaires are sent out by the RP search specialists to gather and document further information. The program is expected to enhance MPCA's enforcement efforts and allow for more effective identification of RPs.

The cumulative amount of money being reimbursed to the Fund through Responsible Party Actions is shown in Figure 2.

To assist in identifying responsible parties at NPL sites, federal funds have been secured to allow specific MPCA staff conduct Responsible Party (RP) searches. These RP search specialists work closely with the members of a given Superfund project team.

They identify potential RPs through information gathered from various sources, including area residents, site operators, past and current employees, and local government officials. Other sources include title searches,

Figure 2: Cumulative reimbursement to the Fund by Responsible Parties (in millions of Dollars).



Legal Actions and Superfund

During FY 90 MPCA has been involved, as in previous years, with a number of lawsuits related to Superfund activities.

The lawsuit with Freeway Landfill to recover past MPCA costs was started in FY 88 and motions to determine the defendants' liability were deferred by the court earlier this year. The Attorney General's Office is planning to move the case to trial later this year.

A cost recovery action was also brought against the operator of the South

Andover tire dump that burned in 1989. The state won its costs in district court and the responsible party has appealed.

Staff from MDA, MPCA, and the Attorney General's office are involved in litigation to recover MERLA funds spent to extinguish a fire and clean debris from the Lund's Farmer Seed and Nursery site.

MPCA has also been involved in bankruptcy proceedings regarding the Amdura, MacGillis and Gibbs, Dakhue Sanitary Landfill, Crosby-American Demolition Landfill, and Waste Disposal Engineering sites.

As mentioned earlier, initiation of legal actions at a number of Department of Defense sites has been approved.

Supreme Court Ruling

The Minnesota Supreme Court ruled June 8 that Superfund cleanup costs are covered as property damage under Comprehensive General Liability insurance policies. The 4 - 3 decision ruled in favor of Minnesota Mining and Manufacturing Company (3M), Joslyn Corporation, and Tonka Corporation in their lawsuits against insurance carriers.

The Court found that comprehensive

"The outcome of the ruling will encourage future RPs to undertake cleanup under MPCA supervision and will assist RPs who have already incurred cleanup expenses to recover them from their insurance carriers."

general liability insurance policies do cover the three companies' cleanup expenses as "damages" to state groundwater resources at Superfund sites. MPCA supported the companies' cases.

3M had financed much of a hydrogeologic study and was seeking damages to reimburse MPCA for its work on the site. RFRAs were issued to Joslyn and Tonka.

Joslyn entered into a Consent Order with MPCA in which it agreed to investigate suspected contamination, develop and implement a cleanup plan, and reimburse MPCA for its expenses.

"The state is challenging provisions of the NCP that fail to require stringent clean-up standards and deny a meaningful role in the federal remedy selection process."

Tonka has not entered into a consent order, but has complied with the RFRA by taking the requested actions.

MPCA and the Attorney General's Office filed a "friend of the court" brief in the 3M case and

participated as a party intervening in the Joslyn case.

The outcome will encourage future RPs to undertake cleanup under MPCA supervision and will assist RPs who have already incurred cleanup expenses to recover them from their insurance carriers.

Suit Against EPA

MPCA and the Attorney General's Office, along with eight other states, have sued the EPA in a challenge to the new regulations to administer the federal Superfund program. The state is challenging provisions of the new National Contingency Plan that fail to require stringent cleanup standards and deny the states a meaningful role in the federal remedy selection process.

Future Legal Action

In the next year, it is possible that more cases will lead to court action. MPCA has noted an increasing number of bankruptcies. This typically requires use of the Fund to address response actions.

While voluntary cooperation has proven to be the most efficient means of effecting cleanup, it is anticipated that cost recovery efforts via legal action will be necessary at a growing number of sites.



Superfund sites can restrict land use and legal actions may be required for remediation

Use of Federal Fund Dollars

MPCA has 42 sites on the NPL that are eligible for federal funding based on priority. So far, MPCA has secured a total of \$36,280,223 in federal Superfund dollars (\$12,700,223 secured during FY 90) for:

1. conducting preliminary assessments and preliminary site investigations at Minnesota sites included on the federal inventory (CERCLIS) of potential hazardous waste sites;
2. conducting remedial investigations and feasibility studies or remedial design/remedial action activities at Minnesota sites included on the federal NPL;
3. carrying out response actions at designated sites; and
4. the Core Program which allocates money for administration of Superfund sites by MPCA employees.

The federal dollars secured are to be expended over several fiscal years. State

money is needed to match 10 percent of the amount secured from federal Superfund for remedial actions.

Federal funds will likely be less available in the future.

During FY 90, MPCA spent \$4,838,908 federal Superfund dollars for response action activities at 21 sites. Table 5 details expenditures of federal Superfund dollars by MPCA. In addition, federal Superfund dollars were used to fund salaries for a number of positions during FY 90.

"State money is needed to match 10 percent of the amount secured from federal Superfund for remedial actions."

Site/Program	Amount Spent	Activity
Adrian	\$ 3,791	RI/FS
Agate Lake	1,682	RI/FS
Arrowhead	108,462	Federal RD/State RD, PRP Search, RD/RA Negotiations
Core Program	317,829	Management/Program Development
Dakhue SLF	14,014	RI/FS, PRP Search
Interlake	417,951	RD
Kummer SLF	731,954	RI/FS, RD/RA
LaGrande SLF	33,806	RI/FS
LeHillier	203,120	RA
Long Prairie	42,118	RD
MacGillis & Gibbs	65,317	RI
New Brighton	547,804	RI/FS
Oak Grove SLF	401,132	RI/FS, RD
Olmsted County SLF	8,488	Negotiations
PA/SI	407,205	PA/SI
Perham	11,459	RI/FS
PRP Search	6,885	Enforcement Cooperative Agreement
Reilly	36,709	PRP Search
Ritari	66,137	RI/FS
South Andover	19,692	RI/FS, RD
St. Anthony	1,041,144	RA
St. Augusta SLF	3,284	RI/FS
Union Scrap	306,264	RI/FS, Emergency Removal
WDE SLF	42,661	Negotiations
Total	\$ 4,838,908	

Table 5 FY 90 Expenditures of Federal Superfund Dollars

MERLA Funded Site Cleanups

During FY 90 \$1,700,019 from the Fund was used by MPCA to cover the costs of providing contractors to respond to releases of hazardous substances at 17 sites listed on the PLP and hazardous waste incidents

and to numerous reports of abandoned barrels containing potentially hazardous substances. Table 6 details FY 90 expenditures of MERLA dollars.

Table 6
FY 90
Expenditures
of MERLA
Dollars

Site/Program	Amount Spent	Activity
Arsenic	\$ 45,969	Investigation/cleanup
Abandoned Barrel	135,619	Responded to reports of abandoned drums
Dakhue SLF	28,166	RI/FS
Duluth Dump	958	Bottled drinking water and connection to carbon system
Hazardous Waste	138,750	Response activities to investigate and stabilize spills and complaints
Spill Response		
Hermantown Emergency	21,222	Bottled drinking water/Investigation
Killian SLF/Leech Lake SLF	19,204	Well installation, pre-Remedial Investigation
Kummer SLF	239,078	RA State Matching Funds
Site Specific Laboratory/	200,743	Laboratory Services at Minnesota
Analytical Services		Department of Health
Lakeland	130,124	Bottled drinking water, RI/FS
Lansing	19,693	Bottled drinking water, RI
Site Specific Legal Expenses	111,256	Attorney General support
LTD SSI	17,664	Well Installation
Lund Nursery	24,564	Removal of pesticide contaminated fire debris and MDA staff expenses
11101 Douglas Drive	43,236	Hazardous waste cleanup
Neihorster	93,079	Drum removal from abandoned warehouse
South Andover	18,096	Tire fire emergency response
St. Anthony	218,560	Water filtration system
St. Paul Park	12,542	Bottled drinking water, RI
Wawina	47,971	Tire fire emergency response
Winona	59,997	Emergency response
TCAAP	73,528	Program administration
Total	\$1,700,019	

The MPCA Property Transfer Program

The MPCA Property Transfer Program was created through legislative action in the 1988 Waste Management Act Amendments in response to requests of MPCA from business and industry concerning the liability associated with real estate transactions.

MERLA imposes liability on parties who knew or reasonably should have known that a hazardous substance, pollutant, or contaminant was located on the property at the time right, title, or interest in the property was acquired.

Therefore, buyers associate themselves with the release by their activities on the site.

Buyers, sellers, lending institutions, and insurers request MPCA staff assistance in determining whether property of interest has been the site of a release or threatened release of a hazardous substance, pollutant, or contaminant.

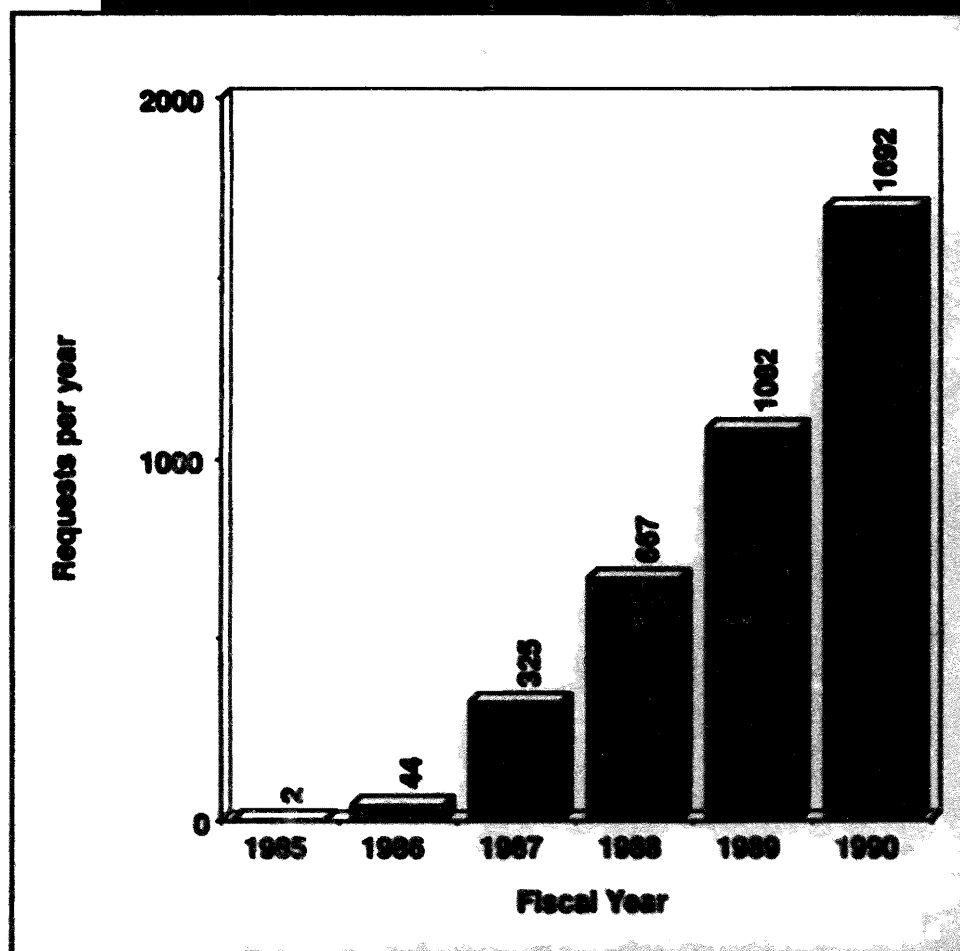


Figure 3 Number of file search requests per year since program began

MPCA assistance consists of conducting file searches, reviewing the investigation and response action work plans, and assisting in or supervising the implementation of reasonable and necessary response actions.

The increase in the number of these requests is shown in Figure 3. In 1986, Congress passed the Superfund

"Since August 1988, Property Transfer Review staff have overseen a total of 125 cleanup projects."

Amendments and Reauthorization Act (SARA) which stimulated a jump in the number of file search requests conducted by MPCA. Property owners, bankers, insurers, and lawyers became increasingly

In addition, MPCA is building a computerized data base for the purpose of automating the file search process. MPCA anticipates that the number of requests for file searches will continue to increase.



Potential hazardous waste on property which may be transferred is investigated by MPCA.

interested in possible hazardous waste releases on property. During FY 90 MPCA responded to 1,692 property transfer assistance requests.

In 1989, legislation authorized MPCA to recover staff costs associated with these requests. MPCA began to charge for the service of conducting file requests in FY 89 and has thus far recovered \$146,281 for the cost of providing the service.

Four positions created by the 1988 legislature are devoted to reviewing investigation and response action work plans and assisting in or supervising the implementation of response actions. Since August 1988, Property Transfer Review staff have overseen a total of 125 cleanup projects.

Thirty-two of these projects were in the investigative stage and 29 projects reached some type

of end point (terminated or cleaned up) as FY 90 came to a close.

MPCA expects to continue reviewing work plans and assisting in the implementation of response actions. These activities are likely to continue to increase during the

MPCA Actions at Sanitary Landfills

MPCA is concerned about the demand landfills will place on the Fund due to the liability limits on political subdivisions, extremely high cleanup costs (potentially \$2-10 million per site), bankruptcy of landfill operators, dwindling federal dollars, and the sheer number of landfills currently on the PLP and predicted to be added.

Most sanitary landfills in Minnesota, especially first-generation unlined facilities, will eventually have groundwater problems; this is inevitably associated with past waste disposal practices. Minnesota has two mechanisms to deal with public health and environmental impacts associated with landfills--the permit process and the Superfund process.

Currently there are 56 landfills on the Superfund PLP. As the number of landfills on the PLP continues to grow, Fund resources are projected to dwindle. While the permit process can be used to properly address some landfill sites, many others will require Superfund actions and funding. At some point, the demand for Fund resources to remediate landfills will exceed the supply.

The Minnesota Superfund Law originally intended to limit the liability of political subdivisions for Superfund actions, however the limits were unclear. The 1989 clarification of Superfund liabilities for political subdivisions at municipally owned and operated landfills made clear the potential demands which will be made on the state Superfund. This clarification has shifted the burden of cleanup costs from political subdivisions to the state Superfund.

As these factors drain the Fund, it is less and less likely that federal funds will be available to make up the shortfall.

Although MPCA aggressively seeks federal funding for landfill sites, only 11 of 56 landfills are on the NPL, and reductions in federal funding are already occurring.



Remedial control measures at Oakton Sanitary Landfill, an NPL site.

"MPCA is concerned about the demand landfills will place on the Fund..."

Although MPCA will continue to propose new landfills for the NPL, the past is probably predictive of the future--in the last three years, only one landfill has been added to the federal Superfund list.

These demands on the Fund challenge MPCA staff working on landfill sites. Each landfill is unique in its circumstances; it can be privately or publicly owned or operated, open or closed, with or without additional responsible parties to bear the cleanup costs. Staff have used combinations of permit responsibilities, working with responsible parties under Superfund law, and working with political subdivisions under Superfund in an attempt to find the right combination for each set of circumstances.

MPCA staff focus on permit responsibilities at open landfills still generating income. While minimum closure requirements at landfills are addressed under the permit, both permit and Superfund responsibilities are combined to deal with other cleanup activities, especially at closed sites. Most of Minnesota's landfills are closed, and many more are closing--74 of Minnesota's 133 permitted landfills are closed and, based on current waste acceptance rates, 32 more are projected to close before the end of 1995.

Considering the demand landfills are placing on the Fund, there are several alternatives available to address the problem of the landfill strain on Superfund. These include:

- Increase the allocation to Superfund and continue cleaning up landfills with that money.
- Another possibility would be to increase the allocation of Superfund to address only closed landfills; cleanup at active landfills would generally be ensured through permit responsibilities.
- Alternatively, a different funding source could be established to deal with the costs of cleaning up and closing landfills.

Other unpermitted dumps in the state--possibly as many as 1,373 in Minnesota--may eventually add to the drain on Superfund. Most of these are not listed in CERCLIS and have not yet been thoroughly assessed for potential public health and environmental damage. It is likely that at least some of these sites will need to be added to the PLP, but less likely that responsible parties will be located to assume cleanup costs on many of these sites.

MDA Superfund Program

The Minnesota Comprehensive Groundwater Protection Act (1989 Laws of Minnesota, Chapter 326, Article 8, and 1990 Laws of Minnesota Chapter 597, Sections 52, 53, and 54) authorized MDA to access the Fund for sites adversely affected by agricultural chemicals (pesticides and fertilizers). MDA has been historically, and is statutorily, the lead state agency for these types of investigations and cleanups. However, when emergency Fund monies were necessary, MDA was required to act with and through MPCA.

While the transfer of projects and funding has occurred, this transaction was cumbersome for both agencies. Allowing MDA direct access to the Fund should streamline the process.

In 1989, the Agricultural Chemical Response and Reimbursement Law (Minnesota Statutes, Chapter 18E) established an account which, in certain circumstances, provides partial reimbursement to eligible persons for investigation and cleanup costs after an agricultural chemical incident is reported.

This account, called the Agricultural Chemical Response and Reimbursement Account (ACRRA), reimburses a portion of cleanup action costs. However, if a responsible party is unwilling or unable to

pay for cleanup costs, or cannot be identified, then Superfund will have to be accessed. ACRRA does not cover the costs of providing an alternative source of drinking water if needed. Such costs must be covered under Superfund.

"...sites with documented groundwater contamination in Castle Rock and Lewiston have been scored by MDA and are currently being proposed for listing on the 1990 PLP."

MDA intends to use ACRRA to the fullest extent, and expects that a majority of projects will be covered by this account, however, some sites may require monies from the state Superfund.

Currently, MDA is providing resources, including staff time, laboratory services, and attorney general support for Superfund activities from accounts funded from sources other than Superfund. MDA project managers have been assigned to agricultural sites currently listed on the PLP, such as Lund's Farmer Seed and Nursery in St. Cloud and Central Cooperative Oil Association in Medford. MDA has provided assistance for sites where MPCA continues to be the lead agency, such as Lansing/Hunting Coop.

Two other sites with documented groundwater contamination in Castle Rock and Lewiston have been scored by MDA

and are currently being proposed for listing on the 1990 PLP. MDA is required to submit reports to the legislature concerning Superfund and other related issues.

In addition, property transfers require timely administration of project cleanups to enable loans and/or sales to be completed. Due to resource constraints, MDA is working on property transfer projects only as time allows.

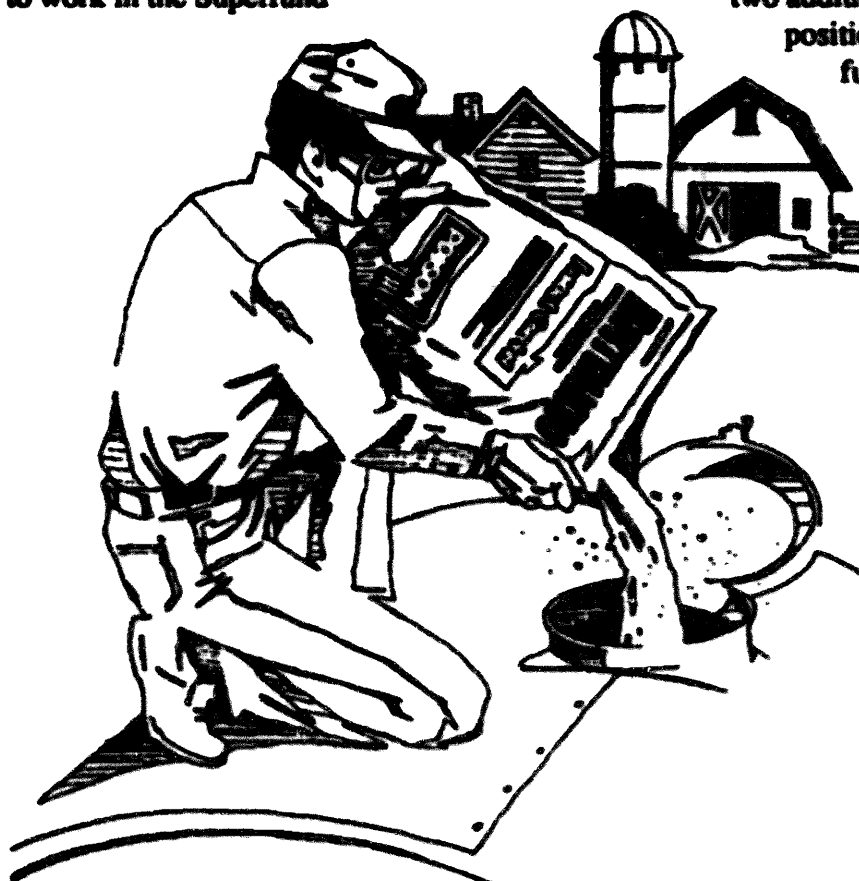
In 1990, the legislature transferred two positions from MPCA to MDA to work in the Superfund

program. MDA anticipates adding additional sites to the PLP, especially where drinking water has been affected.

Future work will also encompass identifying new sites affected by agricultural chemicals and completing a Preliminary Assessment to evaluate each site for further action. Sites requiring further action will be ranked using HRS and reviewed for possible addition to the PLP.

In order to address future departmental resource needs, MDA needs at least two additional Superfund positions. Currently, funding has been

provided for the two MDA Superfund positions at \$55,000 per year. Additional funds are needed to assure a qualified and adequate staff of at least four professionals to perform necessary tasks in the Superfund program.



HAZARDOUS
©DG 1990

The Department of Agriculture responds to hazardous waste contamination resulting from farm chemicals.

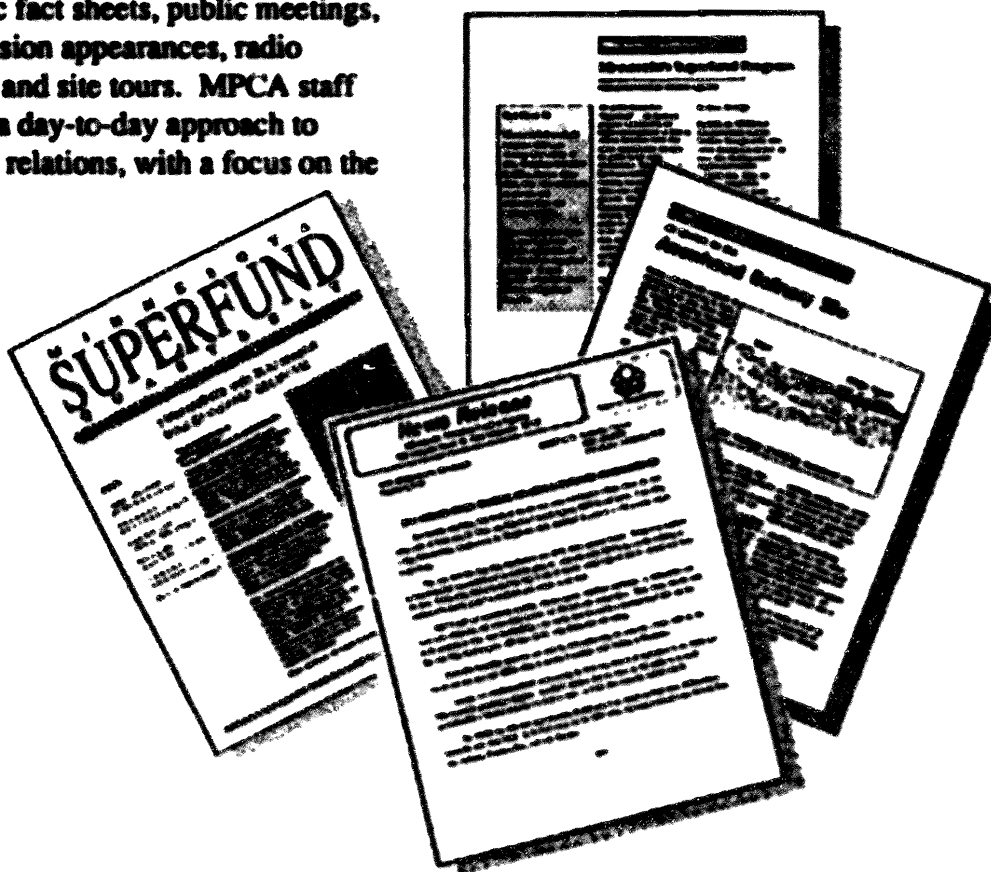
Community Relations and Superfund

Growing public awareness and concern about environmental issues affects the Superfund Program as well as all MPCA programs and services. Program staff, working with the Public Information Office, consult with citizens and offer opportunities for public participation in the Superfund process.

Each Superfund site has an information officer on the project team. Among the activities routinely employed to make sure affected residents, local public officials, community groups, local media, and environmentalists are consulted are phone calls, informal meetings, news releases, site-specific fact sheets, public meetings, cable television appearances, radio interviews, and site tours. MPCA staff emphasize a day-to-day approach to community relations, with a focus on the

local officials and media as important information sources for residents.

The regulated community and other interested parties, such as insurers, bankers, environmental consultants, and lawyers, also require information about policies or trends in the Superfund Program. A set of nine fact sheets describing various aspects of Minnesota's Superfund Program and a new newsletter (*Minnesota Superfund Quarterly*) provide current information and resources to interested parties.



Further Fund Accomplishments

Superfund Memorandum of Agreement

Pursuant to Superfund Amendments Reauthorization Act (SARA) of 1986, the EPA was directed by Congress to encourage state involvement at Superfund sites listed on the federal NPL.

EPA and MPCA continue to work under the Superfund Memorandum of Agreement (SMOA), signed in September 1989, that identifies the roles and responsibilities of the lead and support agencies at these Superfund sites. MPCA's goal of avoiding duplication of efforts and maximizing the number of sites being addressed is met by acting as the lead agency at most NPL sites.

Capacity Assurance

Congress mandated that by 1989 each state must certify that it has 20-year capacity for hazardous waste disposal. States who fail to meet this deadline may lose Superfund funding. The Office of Waste Management, with MPCA assistance, has submitted the required capacity assurance certification to EPA within the required time frame and it has been approved. MPCA continues to cooperate with EPA in setting future guidelines.

Enforcement Cooperative Agreement

MPCA and EPA entered into an Enforcement Cooperative Agreement on September 29, 1989, the first between EPA and any state. The EPA has awarded \$405,000 to MPCA which has been used

for staff activities which include PRP searches and negotiations with RPs at selected NPL sites.

MDA and MPCA Cooperation on Agricultural Chemical Sites

MPCA has been successful in accomplishing many of the directives of Superfund, and now access to the Fund has been expanded to include a new partner. MPCA and MDA will continue efforts to identify new hazardous waste sites in the state.

MDA has now identified 88 sites which have documented agricultural chemical contamination. Approximately 20 of these sites have associated groundwater contamination. These sites have been internally ranked to develop a priority system. Under the authority given to MDA under Minn. Stat. 18D and 18E, work has begun on investigation and cleanup actions. It is likely that some sites will qualify for MERLA funds.

MPCA continues to cooperate with MDA on some aspects of the site response work. The two agencies are currently negotiating a MOA. During late 1989, MDA, in cooperation with MPCA, began to score several sites using the federal HRS. A MPCA hydrologist, on a mobility assignment, worked with MDA staff to assure continuity between agencies for the HRS scoring.

An MDA report was then prepared and submitted to the legislature which analyzed the criteria for HRS and found that HRS is generally appropriate for agricultural chemical sites as well as MPCA sites.

"Any cleanup effort should strive to restore groundwater to drinking water quality and prevent further degradation."

Currently, two MDA sites which may be listed on the PLP have been scored and ranked with the HRS system. MPCA has assisted by reviewing and offering comments on this work.

Contaminated Groundwater Cleanup Criteria

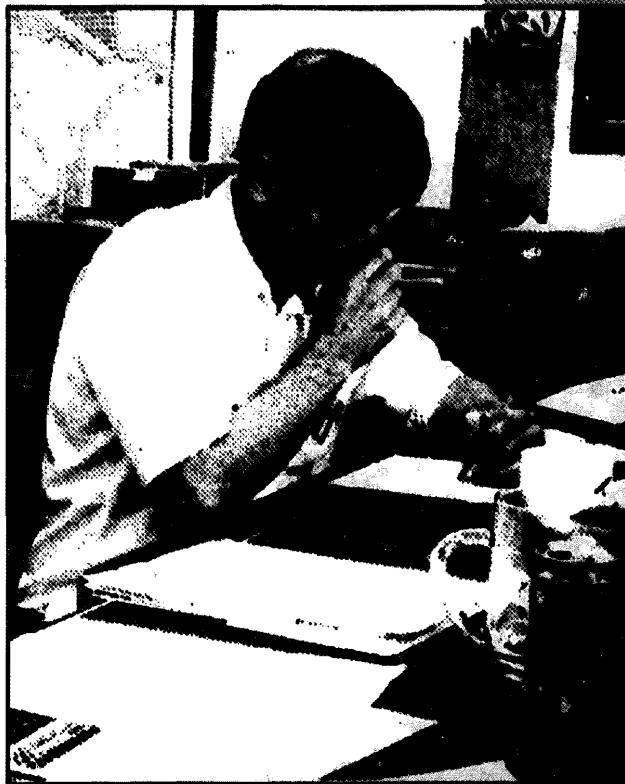
A document was finalized which discusses the cleanup requirements for contaminated groundwater associated with Superfund sites. These criteria take into account Minnesota statutes that direct cleanup efforts to be protective of human health and the environment. Since groundwater is a potable water supply, groundwater must be protected as a drinking water source.

The Recommended Allowable Limits, to be replaced by Health Risk Limits, serve as the minimum standard of acceptance as a potable supply. The 1989 Groundwater Protection Act establishes an even higher goal of degradation prevention where practicable.

Any cleanup effort should strive to restore groundwater to drinking water quality and prevent further degradation. If practicable, more stringent cleanups should also be pursued on the authority of the Groundwater Protection Act.

Contaminated Soils Cleanup Criteria

In an effort to assist responsible parties in their investigations and cleanups of contaminated soils associated with most Superfund sites, MPCA has developed guidance on establishing site-specific soil cleanup goals.



MPCA staff work to apply innovative technologies for Superfund cleanups

A draft soil cleanup strategy document was developed during FY 90 by MPCA staff, with input from other agencies including the Department of Health. MPCA also interacted with staff from other states, including California and New Jersey, and participated in a states/EPA conference to discuss the development of soils cleanup levels. The cleanup goals for a specific NPL site must be consistent with state and EPA policies.

Superfund Program Initiatives

MPCA began in FY 90, and intends to finalize in FY 91, a number of initiatives designed to enhance the Minnesota Superfund Program. A brief discussion of each initiative follows.

MPCA Cleanup Goals and Remedy Selection Criteria

The following cleanup goals and criteria are being used by MPCA staff to evaluate which alternative response actions should be implemented at a site. The ultimate goal of implementing any final response action is to achieve a permanent remedy for the site.

An implemented remedy is considered permanent when it allows for unrestricted use of all land and natural resources impacted by the contamination, does not involve removal of the contaminants to another site, and minimizes exchange of the contaminants to another environmental medium.

- A threshold criterion provides overall protection for the public health, welfare, and the environment. This criterion is met if the response action achieves the site specific response action objectives and cleanup goals identified by the MPCA commissioner. The response action must consider applicable, relevant, and appropriate requirements (ARARs) and other standards.

- Long-term effectiveness is the ability of an alternative to maintain the desired level of protection over time. Permanent remedies provide long-term effectiveness. In the event a permanent remedy is not feasible, evaluated alternatives that alter the contaminants to produce significant

reductions in toxicity, mobility, or volume through treatment are preferred.

- The technical and administrative feasibility of the alternative and the availability of goods and services needed to implement the alternative are evaluated and considered.

- The short-term risks posed as a result of implementing an alternative are expressly considered and weighed against the long-term benefits of the alternative.

- The complete cost of implementation of the alternative including the cost of any long-term monitoring and operation and maintenance is to be evaluated. The future costs to replace the alternative or respond to a future release is also considered in this evaluation.

In addition to the above criteria, the community is consulted regularly in regard to the alternatives available for site remediation. The community must be informed about the hazards of the site and the advantages and disadvantages of various approaches to remediation, and staff must attempt to understand the concerns and desires of the community with regard to remedy selection. The community's concerns and wishes will be expressly considered in selecting a remedy.

Contaminated Soils - Finalizing Cleanup Criteria

During FY 91, MPCA intends to finalize the soils cleanup strategy and continue its involvement in state and national soils cleanup issues.

"MPCA staff will provide the state congressional delegation with MPCA's perspectives on federal Superfund reauthorization issues."

MPCA Involvement in National Superfund Issues

The Minnesota Superfund program is recognized nationally as being very effective at ensuring the cleanup of hazardous waste sites. Minnesota's streamlined approach and emphasis on responsible party involvement early in the response action process is of considerable interest to EPA and other states with developing Superfund programs.

EPA has made changes in its program to more closely reflect the successful programs being conducted at MPCA. In an effort to share our experience and shape national Superfund policy, during FY 91, MPCA staff will:

1) continue leadership in the Association of State and Territorial Solid Waste Management Officials and the State/EPA Superfund Senior Policy Forum Work Groups and

2) provide the state congressional delegation with MPCA's perspectives on federal Superfund reauthorization issues. These efforts will be beneficial to the national Superfund program and the information exchange with EPA and other states will enhance Minnesota's Superfund program.

In addition, Minnesota has entered into litigation with other states against EPA to ensure that the states' administrative involvement in Federal Superfund sites will be meaningful and substantial, and to limit the expense to the state at these sites.

MDA Superfund Program for Agricultural Chemicals

When the Superfund allocation is in place for FY 91, MDA will begin to expend Fund monies on the litigation for cost recovery from the Lund's Farmer Seed and Nursery site, for staff hired to work on Superfund projects and for work done by state contracted environmental consultants in the case of acute emergency releases. MDA will continue to identify new sites affected by agricultural chemicals and perform preliminary assessments.

All sites will be assessed to determine if an eligible party is available to proceed with an investigation and cleanup, and potentially be partially reimbursed through ACRRA.

At this point, the existence of ACRRA has been helpful in obtaining the cooperation of the eligible parties, thereby relieving some of the pressure on Superfund. However, some sites are either ineligible or inappropriate for management through 18B, 18C, 18D, and 18E authorities, and therefore must be managed with authorities and funding under MERLA.

MDA intends to investigate the possibility of entering into a cooperative agreement with the EPA, similar to MPCA's agreement. MDA will also explore the possibility of obtaining additional funding through other federal channels for the MDA Superfund Program.

MPCA and MDA are currently working on a strategy for prioritizing and funding pesticide site cleanups, including updating the PLP, scoring projects with HRS, and

developing the Project List. This strategy will be developed into a Memorandum of Agreement between the agencies.

MPCA Property Transfer

At the beginning of FY 91, MPCA expanded the staffing resources to keep up with the demand and continue to provide a reasonable level of service in the property transaction area. In addition, MPCA staff intend to develop guidance documents to be provided to people involved in property transactions to assist them in conducting investigations and response actions with minimal MPCA oversight until the important decisions regarding level of cleanup need to be made by MPCA.

Property Transfer Review (PTR) staff experience has shown that due to the nature of property transactions, the PTR staff were often requested to attend meetings, review work plans and write response letters within a day after initial request or contact was made.

Unfortunately, because of the large number of requests, the PTR staff are unable to provide this type of service. It is more typical that a meeting will be arranged within two weeks of a request and that review of work plans and reports takes three to four weeks.

Requests for services are accommodated on a first come, first serve basis, and as more people begin to use the service, these turn around times could unfortunately become longer. The PTR staff can best serve the users of the program by timely review and oversight of investigations and response actions.

MDA Property Transfer

Property transfers likely will become a larger part of the workload for MDA in the near future. The Farmers' Home Administration has indicated its inventory contains approximately 115 unsold farms that may be contaminated because of old pesticide-container dump sites.

A number of other requests for file searches have been received by staff. MDA staff have also been working on contaminated agricultural chemical facility sites identified through private property transfer transactions. This would indicate that MDA will need a property transfer program similar to MPCA's to ensure timely cleanup of these sites and to allow the transfers to be completed.

State PA/SI Program

After a reassessment of the state and federal PA/SI program, additional staff may be requested. During FY 89, \$72,000 in MERLA funds were authorized to supplement federal funds for the performance of site investigations at suspected hazardous waste sites.

The funds are to be used for the installation of necessary monitoring wells where the use of federal funds for this activity have been disallowed by the EPA as being beyond the scope of the preliminary site investigation.

So far, MPCA's PA/SI program has been able to use almost 100 percent EPA money for PA/SI work. During FY 90, no MERLA funds were spent to conduct site investigations. However, there is additional PA/SI work which will need to

****(The Streamlining Committee) has implemented ... changes ranging from the modification of ... RFRA's to ... multiple concurrent investigation activities.***

be addressed. MPCA staff believe that if additional staff resources were provided, MERLA funds could be expanded to adequately investigate additional suspected hazardous waste sites. No further money was made available during FY 90.

Superfund Streamlining Committee

Early in 1989, the MPCA established an internal streamlining committee to examine the Superfund process. The objective of the committee is to identify Superfund processes that could be made more effective. To date, the committee has implemented several changes ranging from the modification of exhibits in RFRA's to the scheduling of multiple concurrent investigation activities. The committee has recently finished its review of the cleanup phase of Superfund and is now reviewing the preliminary assessment and investigation phase. The committee expects to make more recommendations that will result in more efficient operation of the Superfund Program.

The Future of the Fund

Based on the number of sites undergoing preliminary assessment at this time and the number of hazardous waste sites historically discovered each year, the agencies project that 204 sites will be on the PLP by the end of FY 93, 39 more sites than in FY 90.

Consistent with the directives of MERLA, MPCA will continue to be aggressive in its efforts to seek out responsible parties and maximize the use of federal Superfund dollars. During FY 91, MPCA will continue its efforts to secure federal Superfund dollars for program

Table 7: General Superfund Projections

	FY 90	FY 91	FY 92	FY93
Sites on PLP	165	174	189	204
Sites undergoing Response Action by RP	97	100	108	116
Sites undergoing Response Action using state or federal Superfund money	30	32	34	36
Total Response Actions	124	134	144	154
Hazardous Waste Site Verification	10	25	25	25
Property Transfer Program				
File Search Requests	1692	1800	1900	2000
Cleanup Assistance	100	100	100	100
Expenditures under Superfund (millions) (cumulative)				
Estimated dollar amount of RP actions	151	181	211	241
Federal Superfund monies secured	23.0	96.5	164.1	171.5
Site specific expenditures from state Superfund	5.21	17.00	29.95	36.48
Agency Administrative expenditures	14.31	17.52	20.72	24.02
RP reimbursement of agency administrative costs	4.30	4.70	5.11	5.52
Agency administrative costs	10.01	12.81	15.61	18.50
Ratio of actual agency administrative costs to estimated RP expenditures	1:15	1:14	1:14	1:13
Nondedicated Revenues (millions)	3.96	1.83	1.83	1.83

"MPCA will continue to place a high priority on those hazardous waste sites where response actions are currently underway."

management and response actions at specific sites. In addition, negotiations are underway with EPA in an effort to obtain federal Superfund dollars for enforcement activities at specific sites.

MPCA will continue to place a high priority on those hazardous waste sites where response actions are currently underway. New site starts will be considered as a lower priority and will be initiated as staff resources and funds become available. These priorities are consistent with the overall program goals to achieve site cleanups which are necessary to protect the public health and achieve permanent environmental remedies.

The costs of cleaning up landfills in accordance with landfill closure rules may need to come from a source other than Superfund, as these costs will increase in coming years as the number of landfills to be closed increases and the owners and other responsible parties are less likely to be able to pay the cost of closure.

Table 8 below demonstrates a possible scenario for the future of Superfund. While the shortfall projected for FY 91 may be compensated for by responsible parties, looking ahead to FY 93, it is unlikely that Superfund will maintain a positive balance.

Table 8 Fiscal Projection of Obligations through FY 93

	FY 90	FY 91	FY 92	FY 93
Balance Forward In	\$13,918,005	\$13,867,059	-\$ 2,211,564	-\$17,786,564
Expenses				
Response Action Costs	2,134,704	14,953,000	14,055,000	7,655,000
Administrative Costs	3,637,320	3,205,623	3,200,000	3,300,000
Total spent	5,772,024	18,158,623	17,255,000	10,955,000
Income				
Property Transfer	146,281	180,000	180,000	180,000
Interest	1,878,195	400,000	0	0
Hazardous Waste Tax	830,916	800,000	800,000	800,000
3M Payment	1,000,000	NA	NA	NA
Appropriation	1,000,000	0	0	0
Income Total	5,721,078	2,080,000	1,680,000	1,680,000
Balance Forward Out	13,867,059	-\$ 2,211,564	-\$17,786,564	-\$27,061,564

Conclusions and Recommendations

The Minnesota Superfund Program has been very effective. Response actions are underway at 124 sites. Responsible parties are undertaking the work at 97 of these sites. MPCA has been successful in its efforts to seek out responsible parties and secure federal dollars to fund cleanup activities.

Despite these efforts, the continued success of the Superfund program is dependent on the availability of Fund dollars to encourage cooperation by responsible parties, provide the state's required 10 percent match for federally funded cleanups, and conduct cleanups of sites not eligible for federal funding.

Landfills are becoming increasingly important within the Superfund program. Fifty-six landfills are currently listed on the PLP and that number will continue to increase. It is anticipated that in the future, significant additional state Fund monies will be necessary to address these sites. Fewer landfills will qualify for federal funding support due to lower scores on the Hazard Ranking System. In addition, municipally-owned landfills have liability caps which shift the burden to the Fund if other RPs cannot be identified.

To ensure the continued success of the Superfund Program, MPCA staff offers the following recommendations:

- Considering the demand landfills are placing on the Superfund Program funding sources (both federal and state

Funds) and the need for cleanup monies to reduce future contamination problems, significant additional resources will be needed in the future to address response actions at these sites.

- The growing use of Superfund at a number of different sites may lead, eventually to the Fund being exhausted. Traditional Superfund sites which are approaching the remedial action phase of cleanup will place a greater demand on the Fund over the coming years.
- MDA staff resources have been focused on initiating and overseeing responsible party site investigations and cleanups. In order to address future and current needs for assessing and scoring sites and overseeing/managing fund financed emergencies or long-term investigations and cleanups, MDA needs two additional Superfund positions. Currently, funding has been provided for MDA at \$55,000 per year, however, additional funds are needed to assure a qualified and adequate staff of four professionals.
- Additional staff resources are necessary to conduct the state funded Property Transfer efforts. Over the past few years the number of requests for file searches has gone from just a few to nearly 1700. The demand for cleanup assistance under this program also continues to increase.

Attachment 1

The tables on the following pages provide information about the status of each Superfund site in Minnesota.

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1990

SITE NAME/LOCATION	HRS SCORE	NPL	RFA ISSUED	CONSENT ORDER	DIR EXECUTED	ROD ISSUED	CERCLAS (MILLION)	MERLAS (MILLION)	ESTIMATE OF RESP. PARTY \$ (MILLION)	CLEANUP PHASE							
										RI / FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M	
ADRIAN MUNICIPAL WELL FIELD	34 **	F				9/30/89	0.590	0.280		XF	XF			XS			
AGATE LAKE SCRAP YARD	30 **	F	1/28/86						0.350	X	X	O	R			R	R
AMERICAN HOIST AND DERRICK, ST. PAUL	13			2/28/89	8/28/90			0.100	0.250	C	R	R	R		O	R	R
ANCHOR GLASS CONTAINER, SHAKOPEE	16								0.750	O	O		O				
ANDERSEN WINDOW, BAYPORT	24			1/27/87					2.000	X	X	X	X		O	O	O
ANOKA MUNICIPAL SANITARY LANDFILL	51			5/30/85					2.000	X	X	X	O		O	R	R
ARROWHEAD REFINERY CO., HERMANTOWN	40 **	F	5/22/90			9/29/86	2.150	0.025		XF	XF	R	R	X	R	R	R
ARSENIC SITES - ABOVE GROUND, STATEWIDE -								0.400		XS		XS	OS				
ARSENIC SITES - BELOW GROUND, STATEWIDE -								0.100		XS			OS				
ASHLAND OIL CO. - COTTAGE GROVE	34	N	3/26/85						0.500	X	X	R	R			R	R
ASHLAND OIL CO. - FINE COUNTY	22		12/18/84						0.500	X	X	R	R			R	R
ASHLAND OIL/PARK PENTAGON/SONFORD PROD., ST. PAUL PARK	32	N							0.100	O	R	R	R				
ASHLAND REFINERY, ST. PAUL PARK	32								0.500	O	R	R	R				
ASKOV GND. WTR. CONTAM. (REFER TO TANKS & SPILLS)	18		10/28/86		4/28/87			0.240	0.425	XS	XS		XS	OS			
									0.300	O	O	R	R		R	R	R
ATWATER MUNICIPAL WELL FIELD	31		12/16/86					0.200		XS	XS	XS	XS	XS		OS	
BASSETT CREEK/IRVING AVENUE DUMP, MINNEAPOLIS	10									O	O						
BATTLE LAKE AREA SAN. LDFL., OTTER TAIL COUNTY	34	N															
BAYTOWN TWP. GND. WTR. CONTAMINATION, WASHINGTON CO.	38	N							0.100	O				O			
BECKER COUNTY SANITARY LANDFILL	28													O			
BONE CASCADE/MEDTRONIC, FRIDLEY	59	F		1/24/84					2.000	C	C	X	X		O	O	O
BONE CASCADE/OMAK, FRIDLEY	59	F		12/28/84					3.000	C	C	X	X		O	O	O
BONE CASCADE PAINT WASTE DUMP, RANIER	17		2/26/85	6/25/85					2.000	X	X	X	X			O	O
BROOKLYN PARK DUMP, HENNEPIN CO.	36																
BUECKERS SANITARY LANDFILL, STEARNS COUNTY	25																
BURLINGTON NORTHERN, BRAINERD	47	F	11/28/83	3/26/85		6/10/86			2.000	X	X	X	O		NO	O	O
BURLINGTON NORTHERN CAR SHOP-BRAINERD	38								0.200	O					O		
BURLINGTON NORTHERN CAR SHOP-WHITE PARK	38		10/22/85						0.500	O	O	R	R		R	R	R
BURNSVILLE SANITARY LANDFILL	43		4/28/87						0.150	O	R	R	R		R	R	R
CENTRAL COOP. OIL, MEDFORD (REFER TO DEPT.OF AG.)	16																

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1990

SITE NAME/LOCATION	HRS SCORE	NPL	RPLA ISSUED	CONSENT ORDER	DIR EXECUTED	ROD ISSUED	CERCLAS (MILLION)	MERLAS (MILLION)	ESTIMATE OF RESP. PARTY \$ (MILLION)	CLEANUP PHASE							
										RI /	FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
CHICAGO-MAITI COUNTY SAN. LDPL., MAITI COUNTY	34	N	6/16/88						0.250	X	O	R	R	X	R	R	R
CLAY COUNTY SANITARY LANDFILL	17																
CONOCO INC. - WRENTHALL REFINERY	41	N	6/23/87						0.500	X	O	R	R		R	R	R
CONTROL DATA CORP. - PRINTED CIRCUITS OPERATION	6			4/26/88		6/12/90			0.500	X	X	X	O		RD	O	O
CROW WING COUNTY SANITARY LANDFILL	14																
DAKOTIE SANITARY LANDFILL, DAKOTA COUNTY	42	F		6/23/87	9/27/88		0.001	0.050	0.300	OF	OF						
DAIR-DUXBURY PESTICIDE SITE	11		12/18/84						0.250	X	X	X	X			O	
DODGE COUNTY SANITARY LANDFILL	25																
DMAR SHOPS, DULUTH (REFER TO HAZ. WASTE DIV.)	11																
DULUTH AIR FORCE BASE	21		8/28/90						2.000		O	R	R				
DULUTH FORMER CITY DUMP	28		8/23/88		11/22/88			0.000	0.150	O	R	R	R	OS	R	R	R
EAST BETHEL DEMOLITION LANDFILL, EAST BETHEL	31	F		4/28/87					0.700	X	O	R	R		R	R	R
EAST MENASA SANITARY LANDFILL, ST. LOUIS COUNTY	14																
ECOLOTECH, INC. - ST. PAUL, MNLS	3							0.000	1.500	X	X	O	O		O	O	
ELECTRIC MACHINERY, SAINT CLOUD	38		3/26/86			1/5/89			2.500	X	X	X	X		RD	C	O
ELECTRONIC INDUSTRIES, INC., NEW HOPE	26			1/24/84					0.150	O	O	C	O		O	O	O
ELK RIVER SANITARY LANDFILL	25																
FARBAULT COAL GASIFICATION PLANT SITE	46		10/28/86	7/26/88		6/87/88			0.500	X	X	X	X			O	O
FARBAULT MUNICIPAL WELL FIELD	36																
FERGUS FALLS SANITARY LANDFILL, OTTERTAIL CO.	25																
FLYING CLOUD SANITARY LANDFILL, EDEN PRAIRIE	40			9/25/85					1.100	X	X	O	R		R	R	R
FMC CORP. - FRIEDLEY PLANT (VAULT)	66	F		6/88/83					6.000	C	C	X	X		O	O	O
(GROUND WATER PUMP/OUT)				10/28/86					0.750	X	X	X	X		O	O	O
FOOT, S.B. TANNING SLUDGE DISPOSAL AREA, RED WING	25																
FORD - TWIN CITIES ASSEMBLY PLANT, ST. PAUL	8		6/26/90						0.500	O		R	R			R	R
FREEMAN SANITARY LANDFILL, BURNSVILLE	46	F	2/25/86					0.105	0.350	O	R	R	R		R	R	R
FRITZ CRAIG SALVAGE OPERATION, PARK RAPIDS	8																
GENERAL COATINGS	10																
GENERAL MILLS, MINNEAPOLIS	39	F		10/23/84					1.500	C	C	X	O		RD	O	O
GLENDALE, MINNEAPOLIS	11																

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1990

SITE NAME/LOCATION	FHS SCORE	NFL	RPRA ISSUED	CONSENT ORDER	DIR EXECUTED	ROD ISSUED	CERCLAS (MILLION)	MERLAS (MILLION)	ESTIMATE OF RESP. PARTY \$ (MILLION)	CLEANUP PHASE							
										RI / FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M	
GOPHER OIL-DELAWARE, MINNEAPOLIS	3																
GOPHER OIL-THORNTON, MINNEAPOLIS	3		8/28/90							O		O		R	R	R	
GOPHER SANITARY LANDFILL, MARTIN COUNTY	26																
GRAND RAPIDS AREA SANITARY LANDFILL	34																
GREATER MORRISON SANITARY LANDFILL, MORRISON COUNTY	29																
HASTINGS FORMER CITY DUMP	31								0.050	O					O		
HONEYWELL, INC.- GOLDEN VALLEY PLANT	31		5/30/85	11/19/85		6/19/90			3.000	C	C	C	O	IO	O	O	
HOPKINS AGRICULTURAL CHEM./ALLIED CHEM., MINNEAPOLIS	3		6/25/85						1.000	X	X	X	X		O	R	
HOPKINS SANITARY LANDFILL	15																
HOUSTON COUNTY SANITARY LANDFILL	25																
HUTCHINSON TECHNOLOGY, INC., HUTCHINSON	9								0.450	C	C	O	O				
HWK ENT./MEERER MFG./DGG. CLS./LITCHFIELD MWS	24																
IRONWOOD SAN. LDPL. (ADV. TRANSFMR.), SPRING VALLEY	34			8/26/86					1.300	X	X	X	X	IO	O	O	
ISANTI MARTIN, ISANTI COUNTY	3			11/12/87					0.150	X	X	R	R	R	R	R	
ISANTI RUMPEL, ISANTI COUNTY	13			11/12/87					0.200	X	X	R	R	R	R	R	
ISANTI SOLVENT SITE, ISANTI COUNTY	30		7/17/83	11/12/87	9/28/83	6/15/90	1.250	0.030	0.250	X	X	R	R	O	R	R	
JACKSON MUNICIPAL WELL FIELD	26							0.020		X					O		
JOSELYN MFG. & SUPPLY CO., BROOKLYN CENTER	44	F	9/27/83	5/30/85		7/31/89			8.000	X	X	O	O	IO	O	O	
KANABEC CO. SANITARY LANDFILL, ARTHUR TWP.	21												O				
KANDIYOH COUNTY SANITARY LANDFILL	41	N															
KAPLAN, H.S. SCRAP IRON AND METAL CO., ST. PAUL	4								0.100	X	O						
KARLSTAD SANITARY LANDFILL, KITTSOON COUNTY	10																
KLUVER SANITARY LANDFILL, DOUGLAS COUNTY	39	N															
KOCH REFINING/N-B-N CORP., ROSEMOUNT	31	F	1/22/85	10/22/85					0.500	X	X	O	R	R			
KOOCHECHING COUNTY SANITARY LANDFILL	27																
KOPPERS COKE, ST. PAUL	55	F	3/25/86						0.500	X	O	R	R	R	R	R	
KUMMER SANITARY LANDFILL, BELTRAMI CO.-DRINKING	42	F	6/26/84		8/28/84	6/12/85	1.900	0.045		XF	XF	OF	OSF	XSF		O	
-COVER						9/30/88	0.400	0.066		XF	XF	OF					
-GND. WATER							1.600	0.150		XF	XF	OF					
KURTZ MANUFACTURING, FRIELEY	31	F	4/24/84	8/24/84		5/13/86			0.500	X	X	O	O	IO	O	O	

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1990

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										RI /	FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
LA GRAND SANITARY LANDFILL, DOUGLAS COUNTY	34	F	7/28/87		9/22/87		0.721			OF	R						
LAKELAND GROUND WATER CONTAMINATION	38	N						0.623		X	X	OS	OS	OS			
LANSING GROUND WATER CONTAMINATION	17		4/21/89					0.403		O	R	R		R	R	R	
LEBON LAKE SANITARY LANDFILL, HUBBARD CO.	25							0.898		XS							
LEWIS/MAKATO	42	F				9/30/85	2.688	0.158		XF	XF	XSF	XSF	XS	XSF	OSF	OSF
LONG PRAIRIE GROUND WATER CONTAMINATION	32	F				6/27/88	0.638	0.238		XF	XF	OF		XS			
LOUISVILLE SANITARY LANDFILL, JORDAN	29		9/23/86						0.388	X	O	R	R		R	R	R
LUND'S FARMER SEED AND NURSERY, ST. CLOUD	14									XS	XS	XS	XS			OS	
MCGILLIS & GIBBS CO., NEW BRIGHTON	48	F	2/28/84		11/28/89		0.519	0.288	0.838	OF	OF	OF					
BELL LUMBER & POLE CO., NEW BRIGHTON	48	F	2/28/84	5/30/85					5.888	X	X	O	R		O	R	R
McGUIRE WIRE SALVAGE SITE, MORA	28		8/28/98		8/28/98			0.818									
McLAUGHLIN GORMLEY KING, MINNEAPOLIS	4		1/22/85	11/19/85		9/28/87			0.588	X	X	X	X		O	O	O
MEeker COUNTY SANITARY LANDFILL	15																
METALS REDUCTION, ST. PAUL	2																
MINNEAPOLIS COMM. DEV. AGENCY/FMC, MINNEAPOLIS	1			11/26/85					1.888	X	X	X	O			O	O
MINNEGASCO, MINNEAPOLIS	42	N	6/24/86						0.588	X	O	O	R			R	R
NL INDUSTRIES/TARACORP/GOLDEN AUTO, ST. LOUIS PARK	48	F	1/11/84	2/26/85		9/23/88			2.888	X	X	X	X			O	O
NORTHWEST REFINERY, FORMER, NEW BRIGHTON	9		4/22/86						0.188	X	X	X	X				
NORTHWOODS SANITARY LANDFILL, ST. LOUIS COUNTY	18																
NUTTING TRUCK & CARTER CO., FAIRBULT	38	F	9/22/83	4/26/84					0.148	X	X	X	X		BO	O	O
OAK GROVE SANITARY LANDFILL-GROUND WATER -FINAL COVER	43	F	8/28/84		9/27/84		1.277			XSF	XF						
OAKDALE DUMP	59	F		7/26/83		9/30/88	0.236	0.878	16.888	C	C	X	X	X	BO	O	O
OLMSTED COUNTY SANITARY LANDFILL	34	F	7/25/89	12/19/89			0.812		0.488	O	R						
OWATONNA CITY DUMP	23							0.818									
PCI, INC., SHAKOPEE	32	N		6/25/85					0.238	C	C	C	X			O	O
PERHAM ARSENIC SITE	38	F	7/26/83		9/22/83		0.815	0.225		OF	OF						
PICKETT SANITARY LANDFILL, HUBBARD COUNTY	34	N	4/26/88						0.238	O	R	R	R		R	R	R
PIO'S EYE LANDFILL	48																
PINE BEND/ROBBY AMERICAN ELP, INVER GROVE HEIGHTS	52	F	10/22/84	4/23/85					3.888	O	R	R	R	R	R	R	R

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1990

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										RI / FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M	
PINE LAKE SANITARY LANDFILL, CHICAGO COUNTY	25																
PIESTONE COUNTY SANITARY LANDFILL	27																
PONDEROSA SANITARY LANDFILL, BLUE EARTH COUNTY	25																
PORTEC-PIONEER DIV. (REFER TO TANKS AND SPILLS DIV.)																	
REDWOOD COUNTY SANITARY LANDFILL	15																
REILLY TAR, ST. LOUIS PARK	59	F	12/18/84	9/22/86		9/28/90	0.908		5.000	O	O	O	O	NO	O	O	
RIITANI POST AND POLE, WADENA COUNTY	30	F	2/25/86		4/22/86		0.663			OF	R	R	R		R	R	
ROBINSDALE DEVELOPMENT SITE, ROBINSDALE	36	N							0.100	O							
ST. AUGUSTA SAN. LANDFILL/ENGEN DUMP, STEARNS COUNTY	34	F						0.010	6.120								
ST. LOUIS RIVER/INTERLAKE, DULUTH	32	F					0.800			XF	OF						
ST. LOUIS RIVER/U.S. STEEL, DULUTH	32	F	9/27/83	3/26/85		2/17/89			2.000	X	X	X	O		R	R	
ST. PAUL PARK GROUND WATER CONTAMINATION	36	N	6/27/89					0.200		XS	OS	R	R	OS			
ST. REGIS PAPER, CASS LAKE	53	F	4/24/84	2/26/85					10.000	X	X	X	X		O	O	
SALOL SANITARY LANDFILL, ROSEAU CO.	22																
SAUK CENTRE SANITARY LANDFILL	38	N	9/27/88						0.250	O	R	R	R	X	R	R	
SCHLOFF CHEMICAL, ST. LOUIS PARK	7		3/27/90						0.030	O	O	R	R		R	R	
SCHWITZER IRON & METAL CO., ST. PAUL	10			7/28/87					0.500	O	R	R	R		R	R	
SHAFER METAL RECYCLING, MINNEAPOLIS	41									O	O						
SHIELDHILL, NORTHFIELD	21								0.425								
SIBLEY COUNTY SANITARY LANDFILL	9																
SOUTH ANDOVER, ANDOVER	35	F	6/26/84			3/30/88	1.503	0.100		OF	OF	OS					
SPRING GROVE MUNICIPAL WELL FIELD	28			3/23/88		2/23/88			0.800	C	C	C	C	NO	O	O	
SUPERIOR PLATING, INC., MINNEAPOLIS	6								0.200	O							
TELLPOON SANITARY LANDFILL	17																
TM CHEMOLITE DISPOSAL SITE, COTTAGE GROVE	33		1/22/85	5/30/85					0.500	X	X	X	X		O	C	
TM KERRICK DISPOSAL SITE, KERRICK	9			1/25/84					0.200	C	C	O	O		O	O	
TONKA MAIN PLANT, MOUND	31		7/22/86						0.600	X	X	X	X		O	O	
TONKA/WOTKE SITE, ANNANDALE	9		5/30/85	11/25/86					0.500	X	X	X	X		O	O	
TOWER ASPHALT, LAKELAND	40								0.040	O							
TRIO SOLVENT SITE, NEW BRIGHTON	21		8/26/86		1/24/89				0.350	X	X	O	R		R	R	

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										RI / FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
TWIN CITIES AIR FORCE RESERVE BASE, MINNEAPOLIS TCAAP/NEW BRIGHTON/ARDEN HILLS/ST. ANTHONY SITE OFF TCAAP: -GROUND WATER -SEWER -ARDEN MANOR -NEW BRIGHTON WELL #7	34 39	F F	11/28/89	12/31/87			2.000 2.200	0.041	0.650 35.000	O O XF	R R R	R R R		R R X	R R	R R
-NEW BRIGHTON CARBON(TEMPERARY 1983) -ARDEN HILLS PIPELINE -YEPMA CONNECTION -ST. ANTHONY INTERCONNECTION -NEW BRIGHTON PERMEANT CARBON -ST. ANTHONY CARBON							0.237 0.140 2.000	0.024 0.004 0.014		XF XF XF XF	XF XF XF XF	XF XS XS XS X				
ON TCAAP:			6/28/83 10/25/83 1/24/84 3/26/85 4/23/85 9/26/86	12/31/87		9/25/87				O/R O/R O/R O/R	O/R O/R O/R O/R	O O/R	O/R	R	R	R
-EMPLOYEES													X			
UNION SCRAP IRON AND METAL CO., MINNEAPOLIS U.S. NAVAL INDUS. RES. ORD. FLT. (NROP), FRIELEY U OF MINNESOTA - ROSEMOUNT RESEARCH CENTER VALETTE-CLARK, ST. PAUL WABAMIA COUNTY SANITARY LANDFILL	48 43 46 4 22	F F F	1/28/86 3/22/84 9/25/84	5/30/85	3/25/86 9/28/80	6/29/80	1.200	0.059	5.000 2.000 0.150	XF X X O	XF X X	XF R		R RD	R R	R R
WADENA ARSENIC SITE WADENA SANITARY LANDFILL WAITE PARK GROUND WATER CONTAMINATION WABAMIA COUNTY SANITARY LANDFILL WASHINGTON COUNTY LANDFILL, LAKE ELMO	25 25 32 13 42	F F F	1/26/83 10/22/83		9/23/83 11/23/86			0.277 0.200	3.000 1.000	XS X C	XS X C	XS X X		RD O RD	OS O O	

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1990

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										RI /	FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M
WASTE DISPOSAL ENGINEERING, ANDOVER	51	F	7/24/84 11/24/87 1/26/88 10/24/89	3/21/84	10/23/84 3/22/88	12/31/87	0.883		3.680	X	X	O	R		R	R	R
WEISMAN SCRAP, WINONA	25		3/23/86						0.300	X	X	X	O		O	O	R
WEST DULUTH INDUSTRIAL SITE	11		1/28/86	9/88/86	3/26/86			1.100	0.700	X	X	XS	XS		O	O	O
W. LAKE SUPERIOR SANITARY DISTRICT LDPL/DULUTH DUMP	34								0.600	X	X	O	O		IO	R	R
WHITE BEAR LAKE TOWNSHIP DUMP - (HWY. 96 DUMP)	31	N	7/22/86						0.300	X	X	X	X		IO	O	O
WHITTAKER CORPORATION, MINNEAPOLIS	48	F	4/23/85														
WINDOM DUMP	38	F	6/24/86			4/7/89			1.800	X	X	O	O		IO	O	R
WINONA COUNTY SANITARY LANDFILL	34		3/26/85						0.400	X/R	X/R	X	X				
WINONA GROUND WATER CONTAMINATION	25							0.015		OS	OS			O			
WOODLAKE SANITARY LANDFILL, MEDINA	16																
YONAK SANITARY LANDFILL, WRIGHT COUNTY	28																

SITES DELETED FROM THE PLP

AIRCO LIME MFG. COMPANY
 ONE NETT LAKE/ORA PESTICIDE SITE
 FORMER MCKAY MFG. COMPANY
 41 E. WATER STREET
 LOST LAKE DUMP SITE
 MAPLE PLAIN DUMP
 MORIS ARSENIC SITE
 NORTHERN TOWNSHIP GROUND WATER CONTAMINATION
 POLYMETALS PRODUCTS INC.
 SONFORD PRODUCTS ABANDONED TRAILER SITE

NON PLP SUPERFUND SITES

1500 BLOCK N. WASHINGTON AVENUE
 HAFNER GREENHOUSE
 KILLIAN SANITARY LANDFILL
 RICE
 SENECA
 SUPERWOOD

STATUS OF MINNESOTA HAZARDOUS WASTE SITES

OCTOBER 1989

SITE NAME/LOCATION	HRS SCORE	NPL	RFRA ISSUED	CONSENT ORDER	DIR EXECUTED	ROD ISSUED	CERCLAS (MILLION)	MERLAS (MILLION)	ESTIMATE OF RESP. PARTY \$ (MILLION)	CLEANUP PHASE							
										RI / FS	RD	RA	DRINK- ING WATER	GROUND WATER RA	RA MONITOR	RA O&M	
									O	31	17	28	21	8	16	48	34
									X	32	44	32	25	7	0	0	0
									C	13	11	4	1	0	0	0	0
									OS	1	2	2	2	4	0	3	0
									OF	6	5	3	0	0	0	0	0
									XS	8	5	5	0	3	0	0	1
									XF	10	14	5	2	1	0	0	0
									XSF	1	0	1	3	3	1	0	0
									OSF	0	0	0	2	1	1	1	1
									R	2	19	33	41	2	30	48	43
									ID	0	0	0	0	4	18	0	0
TOTAL	163	69	70	47	18	39	29.313	8.129	136.21	124	119	107	104	33	67	94	89

LEGEND

F - LISTED AS FINAL ON NPL
P - PROPOSED FOR LISTING ON NPL
N - NOMINATED FOR LISTING ON NPL

LIST OF ACRONYMS

HRS - HAZARD RANKING SYSTEM
NPL - NATIONAL PRIORITIES LIST
RFRA - REQUEST FOR RESPONSE ACTION
DIR - DETERMINATION OF INADEQUATE RESPONSE
CERCLA - COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT
MERLA - MINNESOTA ENVIRONMENTAL RESPONSE AND LIABILITY ACT
RI - REMEDIAL INVESTIGATION
FS - FEASIBILITY STUDY
RD - REMEDIAL DESIGN
RA - REMEDIAL ACTION
O&M - OPERATION & MAINTENANCE

* - EPA LEAD
** - STATE LEAD
- - OFFICIALLY NOT ON THE STATE
PERMANENT LIST OF PRIORITIES
** - PRE-REMEDIAL DESIGN

RESPONSIBLE PARTY CODES

X - COMPLETED
O - ON GOING
C - COMPLETED PRIOR TO CONSENT ORDER
R - REQUIRED UNDER CONSENT ORDER, STIPULATION AGREEMENT OR RFRA
ID - INSTALLED AND OPERATING

GOVERNMENT-FINANCED CODES

OS - ON GOING-USING STATE SUPERFUND MONIES
OF - ON GOING-USING FEDERAL SUPERFUND MONIES
XS - COMPLETED-USING STATE SUPERFUND MONIES
XF - COMPLETED-USING FEDERAL SUPERFUND MONIES
XSF - COMPLETED-USING STATE AND FEDERAL SUPERFUND MONIES
OSF - ON GOING-USING STATE AND FEDERAL SUPERFUND MONIES