Use of the Remediation Fund for Emergency Response, Superfund, and Voluntary Cleanup Activities

April 2010

Minnesota Pollution Control Agency

MINNESOTA DEPARTMENT OF AGRICULTURE

Legislative Charge

Minn. Stat. § 115B.20, subd. 6

Report to legislature.

Each year, the commissioner of agriculture and the agency shall submit to the senate Finance Committee, the house of representatives Ways and Means Committee, the Environment and Natural Resources Committees of the senate and house of representatives, the Finance Division of the senate Committee on Environment and Natural Resources, and the house of representatives Committee on Environment and Natural Resources Finance, and the Environmental Quality Board a report detailing the activities for which money has been spent pursuant to this section during the previous fiscal year.

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Foreword

The Minnesota Environmental Response and Liability Act (MERLA, the State "Superfund" law) of 1983 established the Environmental Response, Compensation, and Compliance Account (Account), and authorized the Minnesota Pollution Control Agency (MPCA) to spend funds from the Account to investigate and clean up releases of hazardous substances or contaminants.

The Minnesota Comprehensive Ground Water Protection Act of 1989 amended MERLA to authorize the Minnesota Department of Agriculture (MDA) access to the Account and the authority to investigate and clean up contamination from agricultural chemicals. The Account was established in the environmental fund in the State Treasury. The Minnesota Department of Finance administered the Account.

During the 2003 legislative session, the Minnesota Legislature (Legislature) altered the Environmental Fund in the State Treasury, eliminating the Environmental Response, Compensation, and Compliance Account. The Legislature created a new Remediation Fund (Fund) in the State Treasury, to provide a more reliable source of funding for investigation and cleanup of hazardous waste sites, and for management of closed landfills.

The Legislature transferred all amounts remaining in the Environmental Response, Compensation, and Compliance Account to the Remediation Fund. The MPCA and MDA Commissioners access money appropriated from the Fund to accomplish the same types of investigation and cleanup work that were completed using the Environmental Response, Compensation, and Compliance Account. The Remediation Fund also contains two special accounts, the Drycleaner Environmental Response and Reimbursement Account and the Metropolitan Landfill Contingency Action Trust. This report does not apply to expenditures from those special accounts.

The MPCA and MDA use the authorities granted under state and federal Superfund laws to identify, evaluate, and clean up (or direct the cleanup of) sites which pose hazards to public health, welfare, and the environment. As required by M.S. 115B.20, Subd. 6, this report details activities for which Remediation Fund dollars have been spent during Fiscal Year (FY) 2009 (FY09: July 1, 2008 – June 30, 2009) by the MPCA and the MDA for emergency response, Superfund, and voluntary-cleanup-related activities. The table on page three details expenditures for FY09.

The MPCA's and MDA's administrative costs represented salaries for 25 full-time equivalent positions (21 MPCA and four MDA), as well as for travel, equipment, non-site-specific legal costs, and supply expenditures associated with responding to emergencies and implementing site cleanups. FY09 Fund figures are current as of August 21, 2009. All cumulative income and expenditure figures are approximations. Staff costs to research, write, and review this report totaled approximately $3,375.

Executive Summary

MERLA responsibilities

The MPCA/MDA Superfund programs fulfill functions specified in the Minnesota Environmental Response and Liability Act (MERLA) for the 77 sites currently on the state's Permanent List of Priorities (PLP), as well as for the 19 non-listed sites being addressed by voluntary responsible parties. An additional 480 MPCA projects and 49 MDA projects are currently being addressed under voluntary investigation and cleanup programs authorized by the Land Recycling Act of 1992 and performed according to respective agency protocols.

Responding to emergencies and spills

Emergency response teams at the MPCA and MDA are on call and available to respond to environmental emergencies 24 hours a day, seven days a week, 365 days a year. The MPCA received 4,044 incident reports from the Minnesota Duty Officer in fiscal year 2009 (FY09). These incident reports are triaged and some transferred to other MPCA programs for follow up. The emergency response team directly handled approximately 3,000 incident reports. The remaining reports were other types of releases, such as air, wastewater, and petroleum related to tanks and were transferred to other MPCA programs. The MDA received approximately 148 agricultural chemical incident reports. In FY09, The MPCA emergency response team declared 72 emergencies and authorized the spending of approximately $400,000 under MERLA authorities. The MDA did not declare any emergencies under MERLA authorities.

The MPCA and MDA emergency response teams' roles are to provide advice and oversee cleanups performed by responsible parties. In some situations where a responsible party cannot be identified or is unable or unwilling to perform the cleanup, Superfund monies are used to respond to the situation. Examples include fuel spills from unknown sources, mercury spills affecting sensitive populations, mystery chemicals infiltrating a sump in a home, abandoned containers of chemicals or oil, or other situations in which the Commissioner of either the MPCA or MDA (or their delegates) have declared emergencies.

Abandoned chemical or oil spills continue to be a problem, as do mercury spills. Fuel spills from trucks and unknown responsible parties are an ongoing problem. Mercury spills that jeopardize sensitive populations, such as children and pregnant women, have been problematic. The number of abandoned drums and containers of waste chemicals, and especially waste oil have been decreasing.

Natural disaster and terror preparedness is an important part of state emergency response programs. Contingency planning and preparation in regard to managing abandoned chemicals, oils, wastes, and contaminated or infected debris are done in concert with local officials. When a disaster occurs, the MPCA and MDA assist the locals and may utilize MERLA funds to recover scattered chemicals, materials, and containers. During the 2009 flood in northwestern Minnesota, emergency responders from both agencies were involved for weeks in assisting with flood preparations and follow-up activities.

Voluntary Investigation and Cleanup

Minnesota has long been at the forefront of the national movement to return property with known or suspected environmental problems to productive use. The voluntary cleanup programs of the MPCA and the MDA to varying degrees are involved in most of Minnesota's redevelopment projects on "brownfield" properties. Under the Land Recycling Act these two programs offer a menu of assurances regarding potential liabilities that responsible and/or voluntary parties may obtain after their investigation of, and, if necessary, cleanup of contaminated sites.

Since 1988, the MPCA's Voluntary Investigation and Cleanup (VIC) Program has overseen 3,363 projects. Of those, 2,761 have been cleaned up; found acceptable for purchase, refinancing, or redevelopment; been transferred to other regulatory programs for appropriate action; or become inactive. Over 50,000 acres of land have been returned to productive use as a result of assurances provided by the VIC Program. About 100 new sites enter the VIC Program each year.

During FY09, 12 new sites entered the MDA's Agriculture Voluntary Investigation and Cleanup (AgVIC) Program. Currently, 49 sites are "open" cases. The AgVIC Program has closed a total of 275 sites to date, of which 15 were closed in FY09. The combination of liability assurances available under MERLA and eligibility for partial reimbursement of corrective-action costs from the Agricultural Chemical Response and Reimbursement Account (ACRRA) offer a unique, incentive-driven program. This opportunity has been positively received by MDA clientele.

Superfund Investigation and Cleanup

Potential Superfund sites are identified by or reported to the MPCA or the MDA, and those which responsible parties do not volunteer to investigate or clean up, enter a formal assessment process for possible addition to the MPCA's Permanent List of Priorities (PLP, the state Superfund list) and/or the U.S. Environmental Protection Agency's (U.S. EPA's) National Priorities List (NPL, or federal Superfund list).

Listing a site on the state PLP does not qualify it for being listed on the NPL. The U.S. EPA has developed NPL listing and delisting procedures. However, prior to a site's being listed, responsible parties, landowners, or facility operators are provided an opportunity to conduct an investigation and cleanup under the oversight of the MPCA or the MDA. Should the responsible party be unwilling or unable to conduct the necessary investigations and/or cleanup, the MPCA or MDA conducts the cleanup action with MERLA funding and seeks cost recovery from the responsible party.

Responsible parties who have not initiated response actions may be requested by the MDA to conduct cleanups. Responsible parties will usually qualify for partial reimbursement of their cleanup costs from the Agricultural Chemical Response and Reimbursement Account (ACRRA). If responsible parties are unwilling or unable to clean up, the MDA can score and possibly list the site on the PLP and/or NPL. Presently the MDA is the lead state agency for site responses being performed at the South Minneapolis Residential Soil Contamination NPL Site and three PLP Sites: the Cedar Service Site in north Minneapolis, the Kettle River Co. Creosote Plant Site in Sandstone, and the CMC Heartland Lite Yard Site in south Minneapolis.

There are currently 75 sites on the PLP. During FY09 two sites were removed. A detailed summary of past delisted sites is available from the MPCA. Of the 75 PLP-listed sites, 25 are also on the Federal National Priorities List (NPL). In addition to sites listed on the PLP, the MPCA provides oversight of Superfund actions by responsible parties at 19 other sites

After the listing of a site on the PLP or the NPL, and if a responsible party either cannot be identified or is unable or unwilling to take requested action, the MPCA or MDA may use the Fund to conduct a site response. The agencies usually follow an established process in their site responses.

A remedial investigation/feasibility study is conducted to determine the extent of contamination and evaluate cleanup alternatives. Following a decision on the needed activities, a plan for remedial design/remedial action is developed and implemented. If financially viable responsible parties are identified at any point during investigation or cleanup, the state may attempt to secure their cooperation and recover costs from them. Such cooperation or cost recovery leverages private funds for cleanups, conserving state funds for truly "orphan" sites, for which no viable responsible party can be identified.

After cleanup is complete, or when a site no longer poses risks to public health or the environment, the site may be "delisted" from the PLP or the NPL. Conditions at some sites may require continued monitoring or maintenance for years following delisting, to ensure that risks have been eliminated or controlled.

State Superfund site-specific and administrative costs in FY09

Arrowhead	93,806
Baytown	327,678
Blaine	11,764
BN Tie Plant	3,592
Cedar Services (MDA)	2,300
CMC Heartland (MDA)	2,241
DeFours	20,138
Duluth Dump	66,891
Edina Wellfield	42,819
Esko Groundwater	158,689
Farmington	31,796
Isanti Solvent	25,918
Kettle River (MDA)	950,937
LeHillier	4,675
Littlefork	300,000
Long Prairie	212,448
McGillis	100,000
Mankato Plating	229,198
Perham	101,265
Peter Pan	59,144
Pigs Eye	25,472
Pilgram Cleaners	28,721
Reserve Mining	1,100,866
Ritari	93,403
Rochester Ground Water	58,016
Valentine Clark	383,426
Whiteway	13,674
Westling	30,000
Winona	193,266
Emergencies	736,843
Harmful substance	21,334
Vapor Intrusion	447,527
Non Emergency Removals	94,876
NRDA	118,386
PA/SI	136,267
PA/SI (MDA)	49,952
PFC Analysis	155,037
PFC Technical Assistance	115,954
Technical Assistance	160,994
Well Abandonment	10,270
Subtotal (site-specific)	**6,719,583**
Site-specific legal expenses (MPCA)	116,546
Site-specific legal expenses (MDA)	6,747
Site-specific lab analytical services (MPCA)	84,806
Site-specific lab analytical services (MDA)	90
Subtotal (site-specific support)	**208,189**
Total FY09 site-specific expenditures	**6,927,772**
Total FY09 administrative costs (MDA = $490,919)	**3,524,898**
Total FY09 site-specific expenditures	**10,452,670**

Minnesota's 25 NPL sites are eligible for federal funding for cleanup activities based on national priority. But, in return for access to these funds, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, the federal Superfund law) requires states to match either ten percent of the cost of site-specific remedial actions (when no state or local government has been identified as a responsible party) or contribute 50 percent (if the site was owned or operated by a state or local governmental entity). During FY09, $100,000 was spent on state-match requirements for site cleanup.

Due to the successful efforts of the Superfund Site Assessment Program, most potential Superfund sites in Minnesota have been discovered. Most of the worst Superfund sites in Minnesota have already been listed on the PLP, and many have been cleaned up or are currently undergoing response actions. The Superfund Program remains responsible for identifying and addressing contamination which continues to pose health and environmental threats to Minnesotans. Figure 1 on page seven shows the number of sites delisted from the PLP each year since the beginning of the Superfund Program, the total number of delisted sites, and the number of active sites.

The MPCA and the MDA continue to manage site cleanups and move them to a monitoring or maintenance level, as appropriate. As the rapid pace of development in Minnesota continues, new sites with contamination will be discovered, and old ones will be redeveloped. Lower detection limits and changing health-based standards sometimes may trigger investigation or cleanup at sites where action was not previously required. Sites that involve issues, such as perfluorochemicals and intrusion of chemical vapors into buildings, may require similar actions.

Institutional controls will also help to ensure that exposure to residual contaminants does not occur as a result of inappropriate land use at former Superfund and VIC sites. The MPCA is developing institutional control tracking mechanisms for former sites to ensure that citizens and local units of government are aware of, and honor, any such controls already in place.

Vapor intrusion impacts at Superfund sites

In FY09, the MPCA began to evaluate the potential impact of vapor intrusion into buildings due to Volatile Organic Compound (VOC) contamination in sub-surface soils and/or groundwater. Vapors from this VOC contamination can migrate through pore spaces in sub-surface soils and can seep into below-ground structures, such as basements or utility corridors. MPCA Superfund staff developed a system/matrix for screening previously closed sites for potential vapor intrusion concern. A Quality Assurance Project Plan (QAPP) for soil-vapor intrusion assessment was also created. Files were then reviewed to determine whether sites had potential risk for vapor intrusion. The three main chemicals of concern based on the file reviews were tetrachloroethene (PCE), trichloroethene (TCE), and benzene. A total of 131 file reviews/site screenings were completed. Seventeen of these screened sites were selected for follow-up investigations: 12 sites that showed the highest risk for vapor intrusion were field sampled along with five sites that showed lower risk (to verify effectiveness of the screening matrix). Of these 17 sites from the initial investigations, nine were chosen for more in-depth study based on the preliminary results. Currently, these nine sites are being sampled and the results are not yet available. Results of the file reviews and all of the sampling activities have been incorporated into GIS shape files for future use in larger agency projects.

Perfluorochemicals (PFCs) at Superfund sites

Perfluorochemicals (PFCs), a family of chemicals made by the 3M Company (3M) and others that have been used for decades to make products that resist heat, oil, stains, grease, and water. PFCs were not known to cause environmental problems until 2004, when the Minnesota Pollution Control Agency (MPCA) found PFCs in drinking water supplies in parts of the eastern Twin Cities metropolitan area. Since then, PFCs have been a high priority for the MPCA as it has sought to identify source areas and secure safe drinking water. The Minnesota Department of Health (MDH) developed health-based criteria for three of the chemicals.

Staff from the MPCA's Superfund and Closed Landfill programs investigated source areas and remediation activities. Four sites where 3M had legally disposed of PFC manufacturing wastes in the past were quickly identified. They included the 3M Oakdale site, the 3M Woodbury site, the 3M Cottage Grove site, and the closed Washington County Landfill. Eventually, nearly all the PFC contamination in east-metro drinking-water supplies was traced to these sites. Remediation of the three 3M sites is managed by the Superfund Program; remediation of the Washington County Landfill is handled by the MPCA's Closed Landfill Program.

In May 2007, the MPCA Citizens' Board approved a Settlement Agreement and Consent Order (CO) negotiated between MPCA staff and 3M. The CO is a legally binding document which lays out timetables, deliverables, and other requirements, including funding, for investigating and cleaning up PFCs at the three 3M sites. Since the Washington County site is in the Closed Landfill Program, 3M has no legal liability for the site, but did agree under the CO to provide up to $8 million to help fund the state's cleanup of the site. MPCA staff and management provide periodic progress reports to the Citizens' Board on implementation of the CO. MPCA staff and management have also provided updates to the East Metro PFC Oversight Working Group established by the Legislature.

As of March 2010, the MPCA Commissioner had approved cleanup plans for the Washington County Landfill and each of the three 3M sites. Construction of the selected remedies has begun at the Washington County Landfill and at the 3M Woodbury and Cottage Grove sites. Construction activities are scheduled to begin at the 3M Oakdale site in the fall of 2010. Excavated material from the 3M sites is being disposed and managed at the SKB Industrial Landfill in Rosemount. 3M funded the construction of a lined cell at SKB to contain the excavated PFC material from the 3M sites, and this cell will only be used for the excavated 3M PFC waste material.

Cleanup plans for the four sites share basic similarities of (1) institutional controls, (2) excavation of remaining source areas, (3) continued and/or enhanced groundwater extraction and treatment, and (4) long-term monitoring. 3M provides quarterly progress reports to the MPCA regarding activities required under the CO. These progress reports along with all of the site-specific reports for the 3M sites can be found at www.pca.state.mn.us/cleanup/pfc/pfcsites.html.

Plans for all four sites have gone through the MPCA's public participation process used in Superfund cleanups. Public participation is not required in the Closed Landfill Program, but since all four sites are in similar situations, MPCA management chose to apply the Superfund public participation process to the Washington County site as well. All work performed at the 3M sites and MPCA expenses under the Superfund program are funded by 3M under the CO's cost recovery provisions.

News events regarding PFCs illustrate that, as the disposal sites and east-metro drinking-water problems have come under control, the MPCA's investigations into PFCs in the state's ambient environment have broadened. For example, findings of PFCs in the tissue of fish living in metro-area lakes have led the MDH to issue new fish-consumption advisories based on PFCs. The MPCA is conducting more than a dozen such research projects on PFCs in the ambient environment, which have been summarized in a report titled "PFCs in the Ambient Environment: 2008 Progress Report" (available on the Web at http://www.pca.state.mn.us/cleanup/pfc/index.html). 3M is funding the majority of the projects with up to $5 million the company committed in the CO to provide to the MPCA for research.

A significant effort by the MPCA into the use of PFCs has been a statewide investigation into the use of fire-fighting foams containing PFCs. The MPCA initially sent questionnaires about their use of foams containing PFCs to 785 municipal fire departments and an additional 16 fire training facilities, along with airports and refineries with dedicated fire departments. Following review of responses received, the MPCA began on-site investigations at 22 of the fire training sites. Results of those investigations, along with investigations done at large fire incidents in which PFC foams were used, are currently under review. The MPCA intends to compile the information gathered from these investigations and prepare a report of the findings.

Reserve Mining and Valentine Clark

During the 2005 Legislative Special Session, as part of the funding appropriation for the MPCA's Remediation Program, the Legislature directed the MPCA to conduct response actions at the Reserve Mining and Valentine Clark Superfund sites. Response actions were conducted over the subsequent four state fiscal years, with completion of these response actions during FY2009. The MPCA incurred just over $12 million to complete response actions at the Reserve Mining site. Over 12,500 barrels of hazardous waste material were removed and disposed off-site. This project was the largest cleanup in terms of cost to the state since the inception of the State Superfund Program.

For the Valentine Clark site, the MPCA incurred just over $2 million for investigations and cleanup actions in response to contaminant releases from the site. The MPCA reconstructed a portion of Bridal Veil Creek and Pond area along Kasota Avenue in Minneapolis and created an open space and wetland in a primarily industrial area of the city. This project received awards from the Minnesota Environmental Initiative and American Council of Engineering Companies for its Green Remediation approach.

The MPCA worked closely with the city of Minneapolis and the local community group in the planning and development of response actions at the Bridal Veil Open Space, which had soil and sediment contamination as result of releases of wood-treating chemicals from the Valentine Clark Superfund site.

Figure 1. Superfund PLP-listed sites in Minnesota

1984-2009