



# Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, MN 55155-4194 | 651-296-6300 | 800-657-3864 | 651-282-5332 TTY | [www.pca.state.mn.us](http://www.pca.state.mn.us)

April 13, 2007

TO: BOARD MEMBERS AND INTERESTED PARTIES

RE: Request for Issuance of a Request for Response Action (RFRA) to the 3M Company:  
For the Release and Threatened Release of Hazardous Substances from the 3M Chemolite Disposal Site, 3M Oakdale Disposal Site, and 3M Woodbury Disposal Site

Enclosed for your information are two sets of information for the above referenced board item. The first set of information (Part A) includes copies of the Minnesota Pollution Control Agency (MPCA) Citizens' Board (Board) Items for the above-referenced Superfund projects and a copy of the Board Agenda. Each Board Item includes a site location map, the RFRA with schedule and exhibits, RFRA definitions, attachments and site specific information to support staff recommendations.

These Board Items will be presented at the MPCA Board Meeting. Please refer to the enclosed Board Agenda for specific location, date, and time. We encourage your attendance at the Board Meeting.

The second set of information (Part B) includes supplemental information and 3M's submittal for the Board Item. Part B includes a copy of the PFC presentation that was made at the February 27, 2007, Board meeting (Enclosure #1), the March 28, 2007, letter from Commissioner Moore to Dr. Katherine Reed regarding 3M's March 27, 2007, letter of response to RFRA Notice Letters (Enclosure #2) and 3M's April 10, 2007, response to the March 28, 2007, letter (Enclosure #3).

If you have any questions regarding the enclosed Board Item or the specifics of the meeting, please feel free to contact Doug Wetzstein of my staff at 651-297-8609.

Sincerely,

Kathryn J. Sather  
Director  
Remediation Division

KJS:csa

Enclosures

**Exhibit  
2768**

State of Minnesota v. 3M Co.,  
Court File No. 27-CV-10-28862

MINNESOTA POLLUTION CONTROL AGENCY

Remediation Division  
Superfund and Emergency Response Section

Board Item Cover Sheet

MEETING DATE: April 24, 2007 DATE MAILED: April 13, 2007

Presenter(s): Gary Krueger *GJK* Phone Number: 651-296-6139

Supervisor: Doug Wetzstein *DWJ* *KGS* Phone Number: 651-297-8609

Manager: Michael Kanner *MK* *TKS* Phone Number: 651-297-8564

Attorney: Alan Williams Phone Number: 651-296-7200

TITLE OF BOARD ITEM: 3M Company (formerly known as Minnesota Mining and Manufacturing)  
Request for Issuance of a Request for Response Action for the Release and  
Threatened Release of Perfluorooctanoic Acid and Perfluorooctane  
Sulfonate from the 3M Chemolite Disposal Site

LOCATION: Cottage Grove Washington  
City/Township County

TYPE OF ACTION: Issuance of a Request for Response Action

RECOMMENDED ACTION: The Minnesota Pollution Control Agency (MPCA) Commissioner and staff  
recommend that the MPCA Citizens Board adopt the suggested staff resolution.

ISSUE STATEMENT:

The 3M Chemolite Disposal Site (Site) (also known as the 3M Cottage Grove facility), in the city of Cottage Grove, Washington County, Minnesota, is a Site where industrial wastes containing perfluorochemicals (PFCs), specifically perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), have been disposed and where PFOA and PFOS have been released into the environment. The Site was listed on the State's Superfund Permanent List of Priorities (State Superfund List) in October 1984. On January 22, 1985, the Minnesota Pollution Control Agency (MPCA) issued a Request for Response Action (RFRA) to 3M under the Minnesota Environmental Response and Liability Act (MERLA) to address contamination by volatile organic compounds (VOCs) as a result of disposal of hazardous substances in disposal pits on the Site. On May 30, 1985, the MPCA and 3M entered into a Response Order by Consent (Consent Order) under MERLA which required 3M to investigate the releases of VOCs and implement appropriate response actions. Neither the RFRA nor the Consent Order addressed the investigation and implementation of response actions concerning the release of PFOA or PFOS or other PFCs, because releases of those substances, and the potential hazards of such releases to human health or the environment, were not known to the MPCA at the time the RFRA was issued and the Consent Order entered into.

In February 2002, 3M informed the MPCA that PFOA and PFOS had been detected in on-site ground water production wells. Subsequent investigations conducted by 3M, with oversight by the MPCA, in 2005 and 2006 documented releases of PFOA and PFOS to ground water, soil, surface water and sediments on the Site and in the adjacent Mississippi River.

The MPCA staff has reviewed information that provides evidence and support for the issuance of a RFRA to 3M to address the release and threatened release of PFOA and PFOS at and from the Site. For the reasons set forth in this Board Item, the MPCA Commissioner recommends that the MPCA Citizens' Board (Board) issue a RFRA to 3M for the release of PFOA and PFOS at and from the Site pursuant to the MERLA, Minn. Stat. §§ 115B.01 to 115B.20 (2006). The RFRA requests 3M to complete Remedial Investigations and Feasibility Studies, prepare Remedial Designs, and to implement appropriate Response Actions for the release of PFOA and PFOS at and from the Site.

**ATTACHMENTS:**

1. Site Location Map
2. RFRA with Schedule and Exhibits
3. Definitions
4. January 22, 1985 RFRA
5. May 30, 1985 Consent Order
6. 3M Report Executive Summaries and MPCA Correspondence
7. Commissioner Notice Letter and 3M Response
8. Minnesota Department of Health Information
9. PFC Health Information from other agencies
10. MPCA/MDH Memorandum of Agreement Information

**MINNESOTA POLLUTION CONTROL AGENCY**

*Remediation Division  
Superfund and Emergency Response Section*

*3M Company (formerly known as Minnesota Mining and Manufacturing) –  
Request for Issuance of a Request for Response Action for the Release and Threatened Release of  
Perfluorooctanoic Acid and Perfluorooctane Sulfonate from the  
3M Chemolite Disposal Site*

*April 24, 2007*

**ISSUE STATEMENT**

The 3M Chemolite Disposal Site (Site) (also known as 3M Cottage Grove), in the city of Cottage Grove, Washington County, Minnesota, is a Site where industrial wastes containing perfluorochemicals (PFCs), specifically perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), have been disposed and where PFOA and PFOS have been released into the environment. The Site was listed on the State's Superfund Permanent List of Priorities (PLP) (State Superfund List) in October 1984. On January 22, 1985, the Minnesota Pollution Control Agency (MPCA) issued a Request for Response Action (RFRA) to 3M under the Minnesota Environmental Response and Liability Act (MERLA) to address contamination by volatile organic compounds (VOCs) as a result of disposal of hazardous substances in disposal pits on the Site. On May 30, 1985, the MPCA and 3M entered into a Response Order by Consent (Consent Order) under MERLA which required 3M to investigate the releases of VOCs and implement appropriate response actions. Neither the RFRA nor the Consent Order addressed the investigation and implementation of response actions concerning the release of PFOA or PFOS, because releases of those substances, and the potential hazards of such releases to human health or the environment, were not known to the MPCA at the time the RFRA was issued and the Consent Order entered into. In February 2002, 3M informed the MPCA that PFOA and PFOS had been detected in on-site ground water production wells. Subsequent investigations conducted by 3M, with oversight by the MPCA, in 2005 and 2006 documented releases of PFOA and PFOS to ground water, soil, surface water and sediments on the Site and in the adjacent Mississippi River.

The MPCA staff has reviewed information that provides evidence and support for the issuance of a RFRA to 3M to address the release and threatened release of PFOA and PFOS at and from the Site. For the reasons set forth in this Memorandum, the MPCA Commissioner recommends that the MPCA Citizens' Board issue a RFRA to 3M for the release of PFOA and PFOS at and from the Site pursuant to the MERLA, Minn. Stat. §§ 115B.01 to 115 B.20 (2006). The RFRA requests 3M to complete Remedial Investigations and Feasibility Studies, prepare Remedial Designs, and to implement appropriate Response Actions for the release of PFOA and PFOS at and from the Site.

**I. BACKGROUND:**

**A. Site History**

The 3M Chemolite Disposal Site (Site) is in the city of Cottage Grove, Washington County, Minnesota. The Site location is shown in Attachment 1(Figure 2-1):

- The Site was listed on the State's Superfund Permanent List of Priorities (State Superfund List) in October 1984.
- On January 22, 1985, the MPCA issued a RFRA to 3M to address VOC contamination as a result of disposal of hazardous substances in disposal pits on the Site. (Attachment 4).
- On May 30, 1985, the MPCA and 3M entered into a Consent Order which required 3M to investigate the releases of VOCs and implement appropriate response actions. (Attachment 5).
- Releases or threatened releases of PFOA or PFOS, and the potential hazards of such releases to human health or the environment, were not known to the MPCA when the RFRA was issued and the Consent Order entered into. Therefore, neither the RFRA nor the Consent Order addressed the investigation and implementation of response actions concerning the release of PFOA or PFOS.

The Consent Order, Part XXII, provides in part as follows:

Nothing in this Order shall preclude the MPCA from exercising any administrative, legal, and equitable remedies available to it to require additional actions by 3M in the event that:

A. The MPCA discovers conditions at the 3M Chemolite Site that were unknown or receives information relating to releases sought to be remedied by this Order that was not available on the effective date of the Order.

The Consent Order does not affect the MPCA's authority to issue the proposed RFRA.

**B. Background Underlying this Request for Response Action: Releases of PFOA and PFOS**

Perfluorochemicals or PFCs constitute a family of synthetic chemicals in which all of the carbon-hydrogen bonds in a parent hydrocarbon molecule are replaced with carbon-fluorine bonds to create chemicals that are extremely stable and do not easily break down in the environment. PFOA and PFOS are PFCs which consist of a string of eight carbon atoms bonded to fluorine atoms and are sometimes referred to as "C-8" chemicals. 3M and DuPont are or were the principal manufacturers of PFOA and PFOS in the U.S. 3M produced PFCs at its Chemolite facility at this Site for approximately 50 years until about 2002. Since approximately 2000, PFOA and PFOS have been the subject of extensive review by the U.S. Environmental Protection Agency (USEPA) under the Toxic Substance Control Act. Review has also been initiated by other countries and international organizations, and extensive studies have been conducted on the presence of PFOA and PFOS in animals and humans around the world, and on potential health risks posed by these chemicals.

For the purposes of this Board Item and the RFRA proposed herein, PFOA includes perfluorooctanoic acid and the specific chemical substances identified by Chemical Abstract Service (CAS) numbers in the document entitled DATA FOR DERIVATION OF GROUND WATER HEALTH BASED VALUE (HBV), which is attached to the February 26, 2007 Minnesota Department of Health (MDH) Memorandum establishing an HBV for PFOA. Similarly, PFOS includes perfluorooctane sulfonate and the specific chemical substances identified by CAS numbers in the attachment to the February 26, 2007 MDH Memorandum establishing an HBV for PFOS.

In February 2002, 3M informed the MPCA staff that PFOA and PFOS had been detected in on-site ground-water production wells at the 3M Chemolite facility. Subsequent sampling requested by MPCA staff confirmed ground-water contamination by PFOA and PFOS near one of the on-site disposal areas on February 13, 2003. MPCA staff subsequently requested that 3M conduct a facility-wide assessment to determine extent and magnitude of potential releases of PFOA and PFOS to the environment.

In December 2004, 3M submitted a facility-wide work plan to assess releases of PFCs at the 3M Chemolite facility. This work plan was approved by the MPCA staff in January 2005. This work plan,

implemented in 2005, documented releases of PFOA and PFOS to ground water, soil, surface water, and sediments on the 3M Chemolite facility and in the adjacent Mississippi River (April 2006 report). Based on the information gathered during this first PFC investigation, in June 2006, the MPCA staff requested that 3M conduct a second phase investigation to determine the extent and magnitude of releases of PFOA and PFOS to the environment, and to evaluate appropriate response actions to address the releases. This request included the requirement that 3M was to expand the sample analyte list for additional PFCs. This expanded list included Perfluorobutanic Acid (PFBA); and was to be used for all future investigations at the Chemolite Site, the 3M Oakdale Disposal Site and 3M Woodbury Disposal Site.

3M submitted a work plan in response to MPCA staff's request (August 2006), which was subsequently approved by the MPCA staff in September 2006. Sampling activities have been completed for this second phase, with results and the evaluation of appropriate response actions expected to be submitted to the MPCA staff by the end of June 2007. (Executive summaries of 3M submittals, along with MPCA staff responses are included in Attachment 6).

The MPCA staff has requested reimbursement of its oversight cost expenses incurred for 2004 through 2006 related to the PFC investigations and 3M has reimbursed the MPCA for these oversight costs.

The MPCA staff also requested that 3M evaluate interim response actions that could be implemented at the Site to reduce risks or migration of hazardous substances from the Site. 3M has submitted an interim response action proposal to install an engineered cap over three of the on-site disposal areas. This would be done to reduce the potential for water to filter through the contaminated waste material and soil, and migrate to nearby surface water. Ground water would be monitored around these disposal areas, with additional ground water controls installed to control migration of hazardous substances to nearby surface water bodies. The design of these caps is currently under review by the MPCA staff.

On March 13, 2007, the Commissioner of the MPCA notified 3M of the Commissioner's intention to ask the Board to issue a RFRA to 3M to complete necessary investigations and take appropriate response actions regarding the release of PFOA and PFOS at and from the Site.

The Commissioner's Notice Letter (CNL) also stated that an enforceable Consent Order could provide an alternative way to formalize the process for taking additional response actions under MERLA. 3M was asked to respond to the CNL by March 27, 2007, including information regarding 3M's willingness to enter into a Consent Order under MERLA.

3M submitted a letter on March 27, 2007, responding to the CNL. 3M's response stated the company's view that a RFRA is unnecessary to assure that 3M will take appropriate actions at the Site or that MPCA will recover its costs related to the Site. 3M also expressed willingness to enter into an enforceable "consent agreement" to address releases of PFOA and PFOS at the Site. 3M's response also disputed the proposed determination by MPCA that PFOA and PFOS are hazardous substances under MERLA (Attachment 7). In a letter responding to 3M dated March 28, 2007, the MPCA Commissioner indicated that 3M could present alternatives to the RFRA, such as a proposed Consent Order, to the MPCA Board for its consideration. However, the Commissioner indicated that he would not discuss or negotiate a Consent Order prior to Board consideration of the RFRAs on April 24, 2007.

On April 10, 2007, 3M submitted a packet of material to the MPCA and requested that this material be included with the information submitted to the MPCA Board in this matter. The material submitted by 3M has been provided to the Board as an enclosure with the MPCA staff cover letter transmitting these materials to the Board. The 3M material includes: a cover letter from Dr. Katherine E. Reed, dated April 10, 2007; a copy of 3M's March 27, 2007 response to the CNL; a draft "Settlement Agreement and Consent Order" for the Site (and for the two other sites being considered for RFRA issuance along this Site); a "3M White Paper" entitled "Procedures Required to Designate a Hazardous Waste;" and a copy of a letter dated April 6, 2007, (with enclosures) submitted by 3M to Attorney General Lori Swanson regarding PFC-related issues. The MPCA Commissioner and staff have not discussed 3M's draft Consent Orders with the company, but are providing them in the form drafted and submitted by 3M.

## **II. REQUEST FOR RESPONSE ACTION:**

MERLA establishes procedures through which the MPCA can protect the public health or welfare or the environment from the release or threatened release of hazardous substances and pollutants or

contaminants. The operative provisions of MERLA with respect to removal and remedial action are contained in Minn. Stat. § 115B.17, subd. 1, which provides that:

Whenever there is a release or substantial threat of release from a facility of any pollutant or contaminant which presents an imminent and substantial danger to the public health or welfare or the environment or whenever a hazardous substance is released or there is a threatened release of a hazardous substance from a facility:

(a) The agency may take any removal or remedial action relating to the hazardous substance, or pollutant or contaminant, which the agency deems necessary to protect the public health, or welfare or the environment. Before taking any action the agency shall:

(1) Request any responsible party known to the agency to take actions which the agency deems reasonable and necessary to protect the public health or welfare or the environment, stating the reasons for the actions, a reasonable time for beginning and completing the actions taking into account the urgency of the actions for protecting the public health or welfare or the environment, and the intention of the agency to take action if the requested actions are not taken as requested;

(2) Notify the owner of real property where the facility is located or where response actions are proposed to be taken, if the owner is not a responsible party, that responsible parties have been requested to take response actions and that the owner's cooperation will be required in order for responsible parties or the agency to take those actions; and

(3) Determine that the actions requested by the agency will not be taken by any known responsible party in the manner and within the time requested.

In summary, Minn. Stat. § 115B.17, subd. 1, provides authority for MPCA to use money from the State Remediation Fund to take response actions to address releases of hazardous substances, or pollutants or contaminants. Before the MPCA may take such actions, Minn. Stat. § 115B.17, subd. 1 requires the MPCA to: (1) request all known responsible parties (RPs) to take the response actions; (2) notify the owners of the property where response actions are proposed to be taken (if the owners are not responsible parties); and, (3) determine that no known responsible party will take the requested response actions within the time and manner requested.

Under Minn. Stat. § 115B.17, in order to issue a RFRA, the MPCA must find that: (1) there is a release or threatened release; (2) there is a facility; (3) the release or threatened release is from that facility; (4) the release or threatened release involves either (a) a pollutant or contaminant that presents imminent or substantial danger to the public health, welfare, or the environment or (b) a hazardous substance; and, (5) the person(s) to whom the RFRA is to be directed are responsible parties. The terms

release, facility, pollutant or contaminant, hazardous substance, and responsible person are all defined in MERLA. These definitions are set out in Attachment 3 to this Board Item and discussed below.

The proposed RFRA (Attachment 2) serves as a request to responsible parties under both Minn. Stat. §§ 115B.17 and 115B.18. Among other things, Minn. Stat. § 115B.18 establishes procedures for bringing actions in court against responsible parties who fail to take requested response actions, including actions to compel responsible persons to perform requested response actions and to impose civil penalties for failure to take requested response actions.

Below is a brief summary of the information that supports the five determinations that the MPCA is required to make in order to issue a RFRA under MERLA.

A. There is a Release

A "release" means "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment which occurred at a point in time or which continues to occur." Minn. Stat. § 115B.02, subd. 15. Exceptions to this definition are not applicable in this case. Sampling results submitted by 3M, including reports submitted in 2003 and 2006 have documented that releases of PFOA and PFOS to ground water, soil, surface water, and sediments have occurred at or from the Site (See attachment 6). These substances have been released into the environment as defined by Minn. Stat. § 115B.02, subd. 15.

B. There is a Facility

Minn. Stat. § 115B.02, subd. 5 defines a "facility" as:

- (1) Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft;
- (2) Any watercraft of any description, or other artificial contrivance used or capable of being used as a means of transportation on water; or
- (3) Any site or area where a hazardous substance, or a pollutant or contaminant, has been deposited, stored, disposed of, or placed, or otherwise come to be located.

"Facility" does not include any consumer product in consumer use.

The Site includes a number of identified disposal pits where wastes containing PFCs including PFOA and PFOS were disposed of and other areas where these PFCs have come to be located. The Site is

a site or area where a hazardous substance has been deposited, disposed of, or placed, or otherwise come to be located, and therefore constitutes a facility as described in Minn. Stat. § 115B.02, subd. 5(3).

C. The Release or Threatened Release is from the Facility

Analysis of samples collected from the Site and from the Mississippi River which adjoins the Site indicate that ground water, soil, surface water, and sediments are contaminated with PFOA and PFOS, as a result of disposal and other deposit of wastes containing PFOA and PFOS at the Site.

Therefore, it is reasonable to conclude that the release of hazardous substances is from the facilities.

D. The Release Involves Hazardous Substances

Minn. Stat. § 115B.02, subd. 8 defines a "Hazardous Substance" as:

- (1) Any commercial chemical designated pursuant to the Federal Water Pollution Control Act, under United States Code, title 33, section 1321 (b)(2)(A);
- (2) Any hazardous air pollutant listed pursuant to the Clean Air Act, under United States Code, title 42, section 7412; and
- (3) Any hazardous waste.

Statutory exceptions to this definition do not apply at this Site.

"Hazardous waste", which is included in the definition of "hazardous substance" under subdivision 8(3), is defined in Minn. Stat. § 115B.02, subd. 9, as:

- (1) Any hazardous waste as defined in section 116.06, subdivision 11, and any substance identified as a hazardous waste pursuant to rules adopted by the agency under section 116.07; and
- (2) Any hazardous waste as defined in the Resource Conservation and Recovery Act, under United States Code, title 42, section 6903, which is listed or has the characteristics identified under United States Code, title 42, section 6921, not including any hazardous waste the regulation of which has been suspended by act of Congress.

PFOA and PFOS found in the releases and threatened releases at and from the Site are substances that meet the definition of hazardous waste under the State statutory definition of hazardous waste in Minn. Stat. § 116.06, subd. 11, clause (b). Minn. Stat. § 116.06, subd. 11, reads in relevant part as follows:

Hazardous waste" means any refuse, sludge, or other waste material or combinations of refuse, sludge or other waste materials in solid, semisolid, liquid, or contained gaseous form which because of its quantity, concentration, or chemical, physical, or infectious characteristics may . . . (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

On November 20, 2002, the MDH, in response to a request from MPCA staff,<sup>1</sup> established Interim Soil Reference Values (SRVs) for PFOA and PFOS in soil. At the same time, MDH established HBVs for PFOA and PFOS in drinking water. The SRVs were set for both industrial and residential use. Industrial SRVs were set at 200 parts per million (ppm) for PFOA and 40 ppm for PFOS. Residential SRVs were set at 30 ppm for PFOA and 6 ppm for PFOS. The 2002 HBVs for drinking water were set at 7 parts per billion (ppb) for PFOA and 1 ppb for PFOS. On February 26, 2007, MDH established more stringent HBVs for PFOA and PFOS. The current HBV for drinking water for PFOA is 0.5 ppb, and for PFOS is 0.3 ppb. MDH has used the HBVs as the basis to issue recommendations to residents with private wells to not drink the water or use it for cooking if PFOA or PFOS in their wells exceeds the HBVs (See Attachment 8).

In addition to the HBVs for PFOA and PFOS established by the MDH for drinking water, health-based values for PFOA and PFOS have also been developed by other agencies in the United States and in Europe, including the USEPA, the New Jersey Department of Environmental Protection (NJDEP), the United Kingdom Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment, and the German Drinking Water Commission. The drinking water values derived from these other health risk assessments range from 0.04 ppb to 9 ppb for PFOA, and from 0.1 ppb to 0.9 ppb for PFOS. The MDH values for PFOA and PFOS are comparable to values determined by the USEPA and the German Drinking Water Commission, and are within the range of values cited above. The determinations from the other four agencies are briefly summarized below and supporting documents are included as an attachment to this Board Item as noted (See Attachment 9).

In 2007, the NJDEP developed preliminary guidance to assess the public health implications of detections of PFOA in the ground water used to provide drinking water by the Pennsgrove Water Supply

---

<sup>1</sup> See MPCA staff memorandum, dated August 6, 2002. From the inception of the state Superfund Program in 1983, the MPCA and the Minnesota Department (MDH) have worked as partners on various issues related to state and federal Superfund sites. In 1995, the agencies entered into a formal agreement known as a Memorandum of Agreement (MOA) to describe their respective roles and responsibilities. The purpose of the MOA was three-fold: 1) responding to contamination in private supply wells; 2) responding to contamination in municipal water supplies; and 3) establishing Special Well Construction Areas. The MOA between MPCA and MDH which is currently in effect is dated July 27, 2005. Over time, the purpose of the MOA has expanded to allow: 1) MPCA to request and MDH to establish Health Based Values for Superfund sites, and 2) agency sharing of laboratory data from drinking water wells that have detections of contaminants (see Attachment 10).

Company in Salem County, New Jersey. The NJDEP recommended a preliminary health-based guidance for PFOA in drinking water of 0.04 ppb, which is the lower end of the range of several values derived from non-cancer and cancer endpoints in different species. The drinking water value developed by the NJDEP is based on comparisons between the actual or predicted blood levels of PFOA in experimental animals associated with adverse effects from ingesting PFOA and the blood levels of PFOA in the general human population. This approach is different from the more standard health risk assessment method used by MDH to set HBVs for PFOA and PFOS. In addition, MDH relied on lab data from studies of primates rather than rats, which MPCA believes is more relevant to assessing risk to humans.

In 2006, the USEPA set a site-specific drinking water action level for PFOA of 0.5 ppb for the communities whose water supplies were affected by releases from the DuPont Washington Works Facility in West Virginia. This 0.5 ppb value was incorporated into a Consent Order between USEPA and DuPont, which required DuPont to treat PFOA-contaminated drinking water in affected communities. In Paragraph 39 of the Consent Order, USEPA stated as follows:

As required by Section 1431 of the SDWA [Safe Drinking Water Act] and for purposes of this Order, U.S. EPA has determined that C-8 [PFOA and its salts] is a contaminant present in or likely to enter a PWA [public water system] or a USDW [under ground source of drinking water] which may present an imminent and substantial endangerment to human health at concentrations at or above 0.50 ppb in drinking water.

In 2006, the German Drinking Water Commission, part of the Ministry of Health, established maximum tolerable concentrations for combined total exposure to PFOA and PFOS in drinking water and recommended that concentrations of PFOA and PFOS be combined in evaluations as they are considered to have comparable toxicity (See <http://www.umweltbundesamt.de/uba-info-presse-e/hintergrund/pft-in-drinkingwater.pdf>). The Commission issued a "strictly health-based guide value" for combined total exposure to PFOA and PFOS in drinking water of 0.3 ppb. As a "health-based precautionary value," the Commission established a drinking water value of 0.1 ppb to account for exposure to other perfluorocarbons in addition to PFOA and PFOS due to the possibility of toxic risks which have yet to be identified and which may be attributed to additional perfluorocarbons with shorter or longer carbon chains than PFOA and PFOS. The German Drinking Water Commission recommended that efforts be made to reduce composite perfluorocarbon levels to less than the health-based precautionary value.

Finally, in 2006, the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment of the United Kingdom (UK) recommended provisional tolerable daily intakes (TDIs) of 3 ppb per day PFOA and 0.3 ppb per day PFOS. The UK values represent limits on dietary intakes, but drinking water values can be derived from the TDIs by applying World Health Exposure assumptions. The resulting drinking water values are 9 ppb for PFOA and 0.9 ppb for PFOS. The evaluation conducted by the UK agency was based on the same experimental studies relied on by MDH in setting HBVs for PFOA and PFOS, except that the UK method did not include a dose-metric adjustment to account for the fact that the half-life of PFOA and PFOS in humans is higher (these compounds remain in the human body longer) than in lab animals.

PFOA and PFOS are found in releases to ground water at the Site at levels ranging from 150 ppb to 1,863 ppb for PFOA, and from 80 ppb to 324 ppb for PFOS. These levels exceed HBVs of 0.5 ppb for PFOA and 0.3 ppb for PFOS set by MDH, as well as health values issued by other agencies in the U.S. and abroad. MDH has also issued a fish consumption advisory recommending a limitation of human consumption of certain fish, including bluegill sunfish, found in Pool #2 in the Mississippi River due to the levels of PFOS in the fish. Ground water, surface water and waste water from the 3M Chemolite Disposal Site discharge into Pool #2.

In a memo to MPCA dated April 4, 2007 MDH provides additional background on its HBVs and on its issuance of drinking water and fish consumption advisories related to PFOA and PFOS. (See Attachment 8). At the conclusion of its memo, MDH states that "we believe these compounds pose a substantial present or potential hazard to human health."

Taken together, the information cited in this section D supports a determination by the Board that PFOA and PFOS found in releases at and from the Site, are waste materials which, because of their quantity, concentration, or chemical characteristics, may pose a substantial present or potential hazard to human health or the environment when improperly managed, and are therefore hazardous wastes as defined in Minn. Stat. § 116.06, subd. 11, clause (b). Because PFOA and PFOS found in releases and threatened releases at and from the Site meet the definition of a hazardous waste under Minn. Stat. § 116.06, subd. 11, they are therefore hazardous substances under MERLA, Minn. Stat. § 115B.02, subd. 8.

On April 10, 2007, 3M submitted a "White Paper" to the MPCA entitled *Procedures Required To Designate a 'Hazardous Substance.'* In this paper, 3M argues that in order to issue a RFRA for releases of PFOA and PFOS, it is not sufficient for MPCA to determine that PFOA and PFOS are hazardous wastes under the statutory definition in Minn. Stat. § 116.06, subd. 11, as the Commissioner has requested in this Board Item. According to 3M, MPCA also must find that PFOA and PFOS are identified as hazardous wastes under MPCA's hazardous waste rules. Because PFOS and PFOA are not so identified in current rules, 3M argues that MPCA must amend the rules or allow 3M a contested case in order to bring these substances under MPCA rules.

MPCA disagrees with 3M's interpretation. The relevant portion of the MERLA definition of hazardous waste reads as follows:

"Hazardous waste" means:

- 1) Any hazardous waste as defined in [Minnesota Statutes] section 116.06, subdivision 11, and any substance identified as a hazardous waste pursuant to rules adopted by the agency under [Minnesota Statutes] section 116.07.

Clearly, this language creates two categories of substances that are considered to be hazardous wastes under MERLA: hazardous wastes that meet the statutory definition in Section 116.06, subd. 11, and those substances identified as hazardous wastes under MPCA's hazardous waste rules. A substance only needs to fall into one category to be considered a hazardous waste under MERLA. In this RFRA Board Item, the MPCA Board is being asked to determine that PFOA and PFOS found in the releases and threatened releases at this Site fall into the first category of hazardous waste because they meet the statutory definition in Section 116.06, subd. 11. There is no requirement in MERLA that PFOA and PFOS must also fall into a second category of hazardous wastes under MPCA rules before the Board can act under MERLA. MPCA's reading of the MERLA definition of hazardous waste is both consistent with the words of the statute, and with the purpose and intent of MERLA, which is to provide broad authority to MPCA to take prompt and effective action to address releases that pose a threat to public health and the environment.

3M cites one Minnesota Court of Appeals case to support its interpretation of MERLA's hazardous waste definition (*Jindra v. city of St. Anthony*, 533 N.W.2d 645(Minn. CT. App. 1995)).

However, the facts of that case are very different from the RFRA matter currently before the Board. The *Jindra* case involved a homeowner suing a city under MERLA for a sewer backup in their home. MPCA was not a party to the lawsuit, and the case is not about MPCA's authority under the MERLA to make hazardous waste determinations when issuing a RFRA. In addition, raw sewage is expressly exempted from MPCA's hazardous waste rules. The homeowner in the *Jindra* case was trying to use the statutory definition of hazardous waste to hold the city liable for a sewage release under MERLA despite the fact that MPCA specifically exempted sewage from its hazardous waste rules. In issuing this RFRA, the Board is asked to apply the statutory definition of hazardous waste to designate particular releases of PFOA and PFOS as hazardous wastes in order to take actions under MERLA's cleanup authorities. The action is necessary and appropriate because MPCA rules do not address these compounds. The issuance of RFRA's will not change the regulatory status of PFOA or PFOS, or wastes containing those substances, under MPCA's hazardous waste rules.

Finally, in at least one RFRA issued by the MPCA in the past, to the Hunting Elevator Company in 1989, the MPCA Board applied the statutory definition of hazardous waste as allowed by MERLA to address a release of certain pesticides that were not identified as hazardous wastes under any rule or regulation. A copy of this RFRA was provided to 3M.

E. 3M is a Responsible Person as Defined by MERLA

A "Responsible Person" is defined by Minn. Stat. § 115B.03, subd. 1, as a person or persons who:

(1) owned or operated the facility: (i) when the hazardous substance, or pollutant or contaminant, was placed or came to be located in or on the facility; (ii) when the hazardous substance, or pollutant or contaminant, was located in or on the facility but before the release; or (iii) during the time of the release or threatened release; or

(2) owned or possessed the hazardous substance, or pollutant or contaminant, and arranged, by contract, agreement or otherwise, for the disposal, treatment or transport for disposal or treatment of the hazardous substance, or pollutant or contaminant [.]

Additionally, under Minn. Stat. § 115B. 03, subd. 3(2), an owner of real property is deemed a responsible person for a release at or from the property if the owner "knowingly permitted any person to make regular use of the facility for disposal of waste."

3M was the owner and operator of the 3M Chemolite facility during the time when wastes containing PFOA and PFOS were disposed of at the Site. As an owner of the real property at the Site where the release occurred, 3M knowingly permitted the regular disposal of waste, including wastes containing PFOA and PFOS. 3M is therefore a responsible person as defined in Minn. Stat. § 115B.03, subd. 1(1) and subd. 3(2) for the release of PFOA and PFOS at the Site.

F. The Requested Response Actions are Reasonable and Necessary

The proposed RFRA (Attachment 2) describes a series of response actions to be taken at the Site. These response actions are intended to prevent, minimize, mitigate or eliminate releases of hazardous substances from the Site into the environment. Therefore these response actions are reasonable and necessary to protect the public health, welfare, and the environment.

The MPCA staff has evaluated the estimated length of time needed to accomplish the actions specified in the proposed RFRA, has considered the urgency of the situation, and established a reasonable schedule for completing these actions commensurate with these considerations.

G. The Actions taken by the MPCA after a Request for Response Action is Issued

After the Board issues a RFRA, 3M either: (a) undertakes the actions specified in the RFRA, or (b) refuses to undertake the requested actions. If 3M refuses to perform the requested actions, the MPCA may make a determination that 3M will not undertake the actions requested in the manner and within time set forth in the RFRA. Such a determination may then lead to other actions, including MPCA using money from the Remediation Fund to take the requested actions and later seeking to recover these expenditures from 3M, or legal action to compel 3M to take the requested actions or to pay civil penalties for failure to take them.

Currently, the MPCA is able to test for 13 different PFCs in ground water, including PFOA and PFOS. PFCs in addition to PFOA and PFOS have been found in the releases and threatened releases at and from the Site, and other PFCs may be found in the future as tests become available to identify them. Risks posed to human health and the environment by releases of PFCs other than PFOA and PFOS, including risks posed by releases of multiple PFCs, are not well understood at this time. Some releases or

threatened releases of PFCs other than PFOA and PFOS at or from the Site may be addressed as a result of response actions taken to address releases or threatened releases of PFOA or PFOS. If, during implementation of response actions pursuant to this RFRA, the Commissioner, after consultation with MDH, believes that a release or threatened release of any PFC other than PFOA and PFOS (including a release of multiple PFCs), at or from the Site meets the requirements for taking action under MERLA and that the RFRA should be amended to specifically address such release or threatened release, the Commissioner will notify 3M of his intent to amend the RFRA. The Commissioner will also give notice to the Board and to any person who has requested notice of MPCA actions regarding the Site. The Commissioner will provide a reasonable period for comment on the proposed RFRA amendment. After considering any timely comments, and unless the matter has been referred to the Board for a decision, the Commissioner may amend the RFRA to address the release or threatened release.

**IV. CONCLUSIONS:**

The 3M Chemolite Disposal Site located in Cottage Grove, Washington County, Minnesota, constitutes a facility within the meaning of Minn. Stat. § 115B.02, subd. 5.

There have been one or more releases within the meaning of Minn. Stat. § 115B.02, subd. 15 and continue to be releases and threatened releases of hazardous substances at or from the Site.

The substances released, specifically PFOA and PFOS, are hazardous substances within the meaning of Minn. Stat. § 115B.02, subd. 8.

These releases and threatened releases are from one or more facilities.

3M is a responsible person within the meaning of Minn. Stat. § 115B.03, subd. 1(1) and subd. (3)(2).

The response actions requested in the RFRA for the Site are reasonable and necessary to protect public health or welfare or the environment.

The schedule for the requested actions in the attached proposed RFRA for the Site is reasonable taking into account the actions necessary to protect the public health or welfare or the environment.

**V. RECOMMENDATION:**

The MPCA Commissioner recommends that the Board adopt the suggested staff resolution.



## SUGGESTED STAFF RESOLUTION

**BE IT RESOLVED**, that the MPCA makes the following determinations:

1. The 3M Chemolite Disposal Site located in Cottage Grove, Washington County, Minnesota, constitutes a facility within the meaning of Minn. Stat. § 115B.02, subd. 5.
2. There have been one or more releases within the meaning of Minn. Stat. § 115B.02, subd. 15, and there continue to be releases and threatened releases of hazardous substances at or from the Site.
3. The substances released, specifically PFOS and PFOA, are hazardous substances within the meaning of Minn. Stat. § 115B.02, subd. 8.
4. The releases and threatened releases are from the facility.
5. With respect to these releases or threatened releases, 3M is a responsible person within the meaning of Minn. Stat. § 115B.03, subd. 1(1) and subd. 3(2).
6. The actions requested in the proposed RFRA Action for the Site are reasonable and necessary to protect public health or welfare or the environment.
7. The schedule for the requested actions in the proposed RFRA for the Site is reasonable taking into account the urgency of actions necessary to protect the public health or welfare or the environment.

**BE IT FURTHER RESOLVED**, that based on these determinations, the MPCA hereby issues the RFRA to 3M to address releases and threatened releases of hazardous substances at and from the 3M Chemolite Disposal Site, located in Cottage Grove, Washington County. The Commissioner of the MPCA is authorized to execute the RFRA on behalf of the MPCA.

**BE IT FURTHER RESOLVED**, that in issuing the RFRA, the MPCA adopts the factual determinations and reasons set forth in the attached Board Item.