Sierra Club Great Lakes Program
Toxic Air Pollution Education Series

A Narrative Report on Minnesota's Statutes and Rules Affecting Toxic Air Pollutants

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Forward

This document is one in a series produced for the Sierra Club Great Lakes Program in order to facilitate and increase public understanding of toxic substance issues and the connection between toxic air pollution, Great Lakes water pollution and effects on human health and the environment.

In this document, we brief the reader on current provisions in Minnesota statutes, state administrative codes and unpromulgated agency guidance documents addressing the matter of toxic air pollution. Our exclusive focus is on policies that go beyond minimum federal requirements in controlling toxic air pollution. The Sierra Club Great Lakes Program hopes that these educational materials will assist citizens in their use of these regulations and stimulate discussion about potential changes in Minnesota policy to more fully protect public health and the environment.

The Sierra Club Great Lakes Program wishes to acknowledge a generous grant from the Joyce Foundation of Chicago to make these efforts possible.

Note to Readers:

This document assumes understanding of some terms and some of the basic science of air quality regulation and toxicology that is explained in the Sierra Club Great Lakes Program Airborne Toxicant Education Series document entitled "An Introduction to Airborne Toxicant Evaluation and Regulation."

Persons who are not already familiar with basic concepts of air quality regulation and toxicology should first read that introductory briefing paper before reading this document.

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1. Introduction

The purpose of this document is to brief the reader on current Minnesota statutory and regulatory requirements for toxic air pollution **that exceed minimum requirements under the Federal Clean Air Act and current EPA regulations**. The Sierra Club Great Lakes Program is interested in evaluating whether the current Minnesota air rules and regulations protect public health, the environment and the Great Lakes from toxic air pollutants. The Program also wishes to provide the public with background to allow Minnesota's commitment on toxic air pollution control and evaluation to be compared to requirements other Great Lakes states.

A public policy agenda document in this series entitled "Minnesota Should Significantly Strengthen its Toxic Air Pollution Regulations" articulates the most significant criticisms of Minnesota's toxic air pollution activities and lays out the Sierra Club's agenda to protect public health and environment by improving controls over toxic air pollution in Minnesota.

This review includes Minnesota statutes, Minnesota Pollution Control Agency administrative rules, emerging rulemaking and unpromulgated agency guidance documents on toxic air pollution.

2. Minnesota's Statutes Addressing Toxic Air Pollution

The writer conducted a review of all Minnesota Statutes from Chapter 103A through Chapter 116I, covering both Water and Environmental Protection as major chapter grouping categories. The results follow.

2.1 Minnesota's Water Pollution Control Act Provisions on Recognize the Potential of Toxic Air Pollution as a Cause of Water Pollution

Minnesota's Water Pollution Control Act grants the Minnesota Pollution Control Agency (MPCA) the authority to regulate any source of water pollution. Sources of air pollution can also be sources of water pollution insofar as the chemicals emitted are deposited in water bodies and pollute them as well. Water bodies are particularly susceptible to the air deposition of persistent bioaccumulative chemicals. The language used in the Water Pollution Control act appears to give the MPCA the authority to regulate air pollution as a cause of water pollution.

This statutory provision could conceivably be used by citizens to hold that an air discharge permit actually also constituted a water discharge permit in a situation where an allegation was made that the deposition from an air discharge source might violate

water quality standards. As a result, water pollution regulation in such a case might cause the need for additional emission controls to avoid causing water quality violations.

Under the "powers and duties" section applicable to the Minnesota Pollution Control Agency, the following powers are specified:

> "e) To adopt, issue, reissue, modify, deny, or revoke, enter into or enforce reasonable orders, permits, variances, standards, rules, schedules of compliance, and stipulation agreements, under such conditions as it may prescribe, in order to prevent, control or abate water pollution, or for the installation or operation of disposal systems or parts thereof, or for other equipment and facilities;
>
> > (1) Requiring the discontinuance of the *discharge* of sewage, *industrial waste* or other wastes into any waters of the state resulting in *pollution* in *excess of the applicable pollution standard* established under this chapter;
> >
> > (2) *Prohibiting or directing the abatement* of any discharge of sewage, *industrial waste*, or other wastes, into *any waters of the state* or the deposit thereof or the discharge into any municipal disposal system where the same is likely to get into any waters of the state in violation of this chapter and, with respect to the pollution of waters of the state, chapter 116, or standards or rules promulgated or permits issued pursuant thereto, and specifying the schedule of compliance within which such prohibition or abatement must be accomplished;
> >
> > (3) Prohibiting the storage of any liquid or solid substance or *other pollutant* in a manner which does not reasonably assure proper retention against entry into any waters of the state that would be *likely to pollute* any waters of the state;
> >
> > (4) Requiring the construction, installation, maintenance, and operation by any person of any *disposal system* or any part thereof, *or other equipment and facilities*, or the reconstruction, alteration, or enlargement of its existing disposal system or any part thereof, or the adoption of other remedial measures to prevent, control or abate any *discharge* or deposit of sewage, *industrial waste* or other wastes by any person;"[1]

Accordingly, the statute defines "water pollution," "industrial waste," "other wastes," "disposal system," and "discharge" and specifies the authority of the MPCA in such a manner that gaseous air pollution discharges and the process equipment that produce such air discharges that cause pollution of Minnesota surface waters can be

[1] Minn Statutes §115.03(1)(e)(1-4)

subject to permitting, prohibitions and regulations by MPCA under the Water Pollution Control Act.

Under Minnesota's Water Pollution Control Act, the term "water pollution" is defined as follows:

> "'Pollution of water,' 'water pollution,' or 'pollute the water' means:
>
> (a) the discharge of any *pollutant* into any waters of the state or the contamination of any waters of the state so as to create a nuisance or render such waters unclean, or noxious, or impure so as to be actually or potentially harmful or detrimental or injurious to public health, safety or welfare, to domestic, agricultural, commercial, industrial, recreational or other legitimate uses, or to livestock, animals, birds, fish or other aquatic life; or
>
> (b) the alteration made or induced by human activity of the chemical, physical, biological, or radiological integrity of waters of the state."[2] (Emphasis added)

Under the Act, "pollutant" is defined:

> "'Pollutant' means any 'sewage,' *'industrial waste,'* or *'other wastes,'* as defined in this chapter, discharged into a disposal system or to waters of the state."[3] (Emphasis added)

"Industrial Waste" is defined:

> "Industrial waste' means any liquid, *gaseous* or solid waste substance resulting from *any process* of industry, manufacturing trade or business or from the development of any natural resource."[4] (Emphasis added)

"Other wastes" is defined:

> "Other wastes" mean garbage, municipal refuse, decayed wood, sawdust, shavings, bark, lime, sand, ashes, offal, oil, tar, *chemicals,* dredged spoil, solid waste, *incinerator residue,* sewage sludge, munitions, *chemical wastes,* biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, cellar dirt or municipal or agricultural waste, and *all other substances not included*

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[2] Minn Statutes §115.01(13)

[3] Minn Statutes §115.01(12)

[4] Minn Statutes §115.01(8)

> *within the definitions of sewage and industrial waste set forth in this chapter which may pollute or tend to pollute the waters of the state.*"[5] (Emphasis added)

Under the statute, a "disposal system" is defined:

> "'Disposal system' means a system for disposing of sewage, *industrial waste* and other wastes, and includes sewer systems and treatment works."[6] (Emphasis added)

Further, "discharge" is defined:

> "'Discharge' means the addition of *any pollutant* to the waters of the state or to *any disposal system*."[7] (Emphasis added)

This analysis does intend to suggest that air emission sources of pollutants, such as persistent and/or bioaccumulative chemical toxicants that impair and pollute Minnesota waters, are presently regulated using the authorities cited by the Minnesota Pollution Control Agency. It does mean that the Minnesota Legislature has authorized this type of water pollution control activity under the statute, and that the MPCA could enact rules requiring that air discharges be subject to water pollution control requirements.

Although the "powers and duties" section appears intended more to provide authorization for agency action rather than specific duties, another provision of the water statute contains a self-executing ban on operation and/or installation of "disposal system" without a permit. This section potentially could be extended under the definitions to "disposal systems" for air discharges that pollute Minnesota surface waters:

> "Obtain permit. It shall be unlawful for any person to construct, install or operate a *disposal system*, or any part thereof, until plans therefor shall have been submitted to the agency unless the agency shall have waived the submission thereof to it and a written permit therefor shall have been granted by the agency."[8] (Emphasis added)

To the writer's knowledge, no one has yet attempted to use the Water Pollution Control Act to impose controls on a "disposal system" as an air pollution source under this particular section of law.

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[5] Minn Statutes §115.01(9)

[6] Minn Statutes §115.01(5)

[7] Minn Statutes §115.01(4)

[8] Minn Statutes §115.07(1)

2.2 Waste Management and Consumer Product Statutes Potentially Affecting Emissions of Toxic Air Pollutants

2.2.1 Waste Management Source Reduction Report and Toxic Air Pollution

Under Minnesota's Waste Management Act, the Office of Environmental Assistance of the MPCA must prepare reports which addresses waste management issues. The statute provides:

> " Beginning in 1997, and every sixth year thereafter, the report shall be expanded to include the metropolitan area solid waste policy plan required in section 473.149, subdivision 1, and strategies for the office to advance the goals of this chapter, to manage waste as a resource, to further reduce the need for expenditures on resource recovery and disposal facilities, and to further reduce long-term environmental and financial liabilities. The expanded report must include strategies for: ....
>
> (4) eliminating or reducing toxic or hazardous components in compost from municipal solid waste composting facilities, in *ash from municipal solid waste incinerators*, and in leachate and *air emissions from municipal solid waste landfills*, in order to reduce the potential liability of waste generators, facility owners and operators, and taxpayers;"[9] (Emphasis supplied)

2.2.2 Minnesota Waste Tire Policies

Minnesota statutes define tire dumps, which can cause catastrophic fires that release large amounts of toxic air and water pollutants, as public nuisances:

> "A tire dump unreasonably endangers the health, safety, and comfort of individuals and the public and is a nuisance."[10]

The statute provides abatement and enforcement measures to prohibit land disposal of tires and remediation of existing tire piles.[11]

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[9] Minn Statutes §115A.411(2)(b) and §115A.411(2)(b)(4)

[10] Minn Statutes §115A.906(1)

[11] See Minn Statutes §115A.904 and §115A.906, generally

2.2.3 Waste Battery Management Policy with Implications for Toxic Air Pollution

Minnesota law bans disposal of lead acid batteries in mixed municipal waste streams and further requires that such batteries be delivered to a recycling facility.[12] .

State law bans government agencies, industrial facilities, communication firms and medical facilities from disposing waste dry cell batteries containing mercuric oxide, silver, nickel, cadmium or lead in mixed municipal waste streams.[13] Manufactures of these types of batteries for the named institutions must provide a system for the proper collection, transportation and processing of waste batteries.[14]

Minnesota law prohibits any person from disposing nickel-cadmium rechargeable batteries in mixed municipal solid waste streams. Rechargeable battery manufacturers must provide a collection, management and processing program to keep such waste batteries out of solid waste incineration streams.[15]

All of these Minnesota waste battery control measures reduce lead emissions from municipal waste incinerators and incinerator ash landfills.

2.2.4 Regulation on Waste Disposal Involving Mercury, Major Appliances, Auto Fluids and Household Hazardous Waste

Minnesota's policies attempt to divert certain problematic wastes from the general mixed municipal waste stream in order to avoid releases of waste-related pollutants.

Minnesota has stringent prohibitions on disposal of waste electrical devices containing mercury in order to keep this material out of waste streams where it may enter the environment directly or as a result of waste incineration:

> "(a) A person may not place mercury or a thermostat, thermometer, electric switch, appliance, gauge, medical or scientific instrument, or electric relay or other electrical device from which the mercury has not been removed for reuse or recycling:
>
> (1) in solid waste; or

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[12] See Minn Statutes §115A.915 and §115A.9152

[13] See Minn Statutes §115A.9155(1)

[14] See Minn Statutes §115A.9155(2)

[15] See Minn Statutes §115A.9157, generally

(2) in a wastewater disposal system.

(b) A person may not knowingly place mercury or a thermostat, thermometer, electric switch, appliance, gauge, medical or scientific instrument, or electric relay or other electrical device from which the mercury has not been removed for reuse or recycling:

(1) in a solid waste processing facility; or
(2) in a solid waste disposal facility, as defined in section 115.01, sub.4.

(c) A person may not knowingly place a fluorescent or high intensity discharge lamp:

(1) in solid waste; or
(2) in a solid waste facility, except a household hazardous waste collection or recycling facility.

This paragraph does not apply to waste lamps generated by households until August 1, 1994."[16]

An entity other than a generator of household hazardous waste is subject to the full Waste Management Statute enforcement authority and penalties for violating the mercury waste disposal requirements. Household hazardous waste violations carry administrative penalties of up to $700 per violation incident.[17]

Minnesota law prohibits disposal of major appliances in mixed municipal waste streams or in landfills. A mandatory recycling requirement requires removal of capacitors and ballasts that may contain poly-chlorinated biphenyls, removal of chlorofluorocarbon refrigerant gases and the recycling or reuse of metals, including mercury.[18]

Under Minnesota statutes, a person may not knowingly place motor oil, brake fluid, power steering fluid, transmission fluid, motor oil filters or motor vehicle antifreeze in general mixed solid waste streams; these materials must instead be taken to designated collection centers.[19]

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[16] Minn Statutes §115A.932(1)

[17] Minn Statutes §115A.935(2)

[18] Minn Statutes §115A.9561

[19] See Minn Statutes §115A.916

Minnesota law provides for household hazardous waste management programs, but there are no explicit management requirements imposed on generators of household hazardous waste, other than previously mention requirements for electrical equipment containing mercury.[20]

2.2.5 Toxic Contents in Packaging and Consumer Products

Concern about incinerator emissions and toxic releases from consumer and industrial products motivated the Minnesota Legislature to pass certain restrictions and prohibitions involving the presence of lead, cadmium, mercury and hexavalent chromium in both product packaging and consumer and industrial products.

Under the law:

> "As soon as feasible but not later than August 1, 1993, no manufacturer or distributor may sell or offer for sale or for promotional purposes in this state packaging or a product that is contained in packaging if the packaging itself, or any inks, dyes, pigments, adhesives, stabilizers, or any other additives to the packaging contain any lead, cadmium, mercury, or hexavalent chromium that has been intentionally introduced as an element during manufacture or distribution of the packaging."[21]

The statute restricts the total concentration of lead, cadmium, mercury and hexavalent chromium to 100 parts per million after August 1, 1995.[22] Certain exemptions, reporting requirements and manufacturer certifications also apply under the law.[23] [24]

The statute also provides methods to potentially control these four metals in consumer products with a "listed products" designation. The statute established a Listed Metals Advisory Council to make recommendations on which products containing the metals should be "listed products" and subject to a ban on distribution for sale and/or use after July 1, 1998. The statute also provides for specifying "essential products"

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[20] See Minn Statutes §115A.96

[21] Minn Statutes §115A.965(1)(a)

[22] See Minn Statutes §115A.965(2)(3)

[23] See Minn Statutes §115A.965 generally

[24] A report of MPCA on the program concerning the toxic metal content of packaging is available at http://www.pca.state.mn.us/hot/legislature/reports/toxicspack.pdf

containing the listed metals, a certification system, review of new products and a system of product review reports.[25] [26] [27]

2.2.6 Incinerator Ash Analysis and Disposal; Keeping Toxics Out of Municipal Solid Waste Incinerators

Minnesota waste law imposes certain monitoring and toxic content reduction requirements on municipal solid waste incinerators through waste and ash testing and toxics reduction planning requirements.

Applications, including renewal applications, for a permit to build or operate a municipal solid waste incinerator must clearly indicate how the applicant will reduce the toxic content of waste received by the facility and the incinerator ash produced by the facility.[28] Counties that incinerate municipal solid waste must include procedures and goals to reduce the toxic contents of incinerator ash in their solid waste plans.[29]

The statute authorizes MPCA to regulate the non-combustible fraction of mixed municipal solid waste prior to incineration or processing into refuse-derived fuel as well as the testing, management and disposal of incinerator ash.[30] Proper disposal techniques must be used to prevent waste incinerator ash from becoming airborne during transport, disposal and management operations because of the toxic constituents of this waste stream..

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[25] See Minn Statutes §115A.9651 generally.

[26] Administrative rules on the listed products program can be found at http://www.revisor.leg.state.mn.us/arule/7039/

[27] Further information on MPCA program activities on listed products can be found at http://www.pca.state.mn.us/waste/listedmetals.html

[28] See Minn Statutes §115A.97(6)

[29] See Minn Statutes §115A.97(5)

[30] See Minn Statutes §115A.97(3)

2.3 Minnesota Environmental Response and Liability Law and Toxic Air Releases

Minnesota's Environmental Response and Liability law governing the remediation of site contamination and abandoned waste sites specifically addresses airborne pollutants.[31]

Under the Environmental Response Statute, a "release" of a pollutant or contaminant is defined:

> "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."[32]

However, some potential toxic air pollutants from waste sites are excluded. For example, the law exempts releases of nuclear material, uranium mill tailings and application of fertilizer, agricultural or silvacultural chemicals.

2.4 Minnesota Statutory Pollution Prevention Requirements

The Minnesota Toxic Pollution Prevention Act requires facilities that submit toxic release inventories to also submit toxic pollution prevention plans. Such plans have specific required elements:

> (a) Each toxic pollution prevention plan must establish a program identifying the specific technically and economically practicable steps that could be taken during at least the three years following the date the plan is due, to eliminate or reduce the generation or release of toxic pollutants reported by the facility. Toxic pollutants resulting solely from research and development activities need not be included in the plan.
>
> (b) At a minimum, each plan must include:
>
> > (1) a policy statement articulating upper management support for eliminating or reducing the generation or release of toxic pollutants at the facility;

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[31] See definition of "pollutant or contaminant," Minn Statutes §115B.02(13)

[32] See Minn Statutes §115B.02(15)

> (2) a description of the current processes generating or releasing toxic pollutants that specifically describes the types, sources, and quantities of toxic pollutants currently being generated or released by the facility;
>
> (3) a description of the current and past practices used to eliminate or reduce the generation or release of toxic pollutants at the facility and an evaluation of the effectiveness of these practices;
>
> (4) an assessment of technically and economically practicable options available to eliminate or reduce the generation or release of toxic pollutants at the facility, including options such as changing the raw materials, operating techniques, equipment and technology, personnel training, and other practices used at the facility. The assessment may include a cost benefit analysis of the available options;
>
> (5) a statement of objectives based on the assessment in clause (4) and a schedule for achieving those objectives. Wherever technically and economically practicable, the objectives for eliminating or reducing the generation or release of each toxic pollutant at the facility must be expressed in numeric terms based on a specified base year that is no earlier than 1987. Otherwise, the objectives must include a clearly stated list of actions designed to lead to the establishment of numeric objectives as soon as practicable;
>
> (6) an explanation of the rationale for each objective established for the facility;
>
> (7) a listing of options that were considered not to be economically and technically practicable; and
>
> (8) a certification, signed and dated by the facility manager and an officer of the company under penalty of section 609.63, attesting to the accuracy of the information in the plan."[33]

Although the citizen and community members would likely find such toxic pollution prevention plants very informative, the statute nevertheless provides that the MPCA shall hold these materials confidential.[34]

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[33] Minn Statutes §115D.07(2)

[34] See Minn Statutes §115D.09

Those who submit toxic pollution prevention plans must submit annual progress reports that the MPCA must review and approve. The annual progress reports must meet the following criteria:

> " (1) a summary of each objective established in the plan, including the base year for any objective stated in numeric terms, and the schedule for meeting each objective;
>
> (2) a summary of progress made during the past year, if any, toward meeting each objective established in the plan including the quantity of each toxic pollutant eliminated or reduced;
>
> (3) a statement of the methods through which elimination or reduction has been achieved;
>
> (4) if necessary, an explanation of the reasons objectives were not achieved during the previous year, including identification of any technological, economic, or other impediments the facility faced in its efforts to achieve its objectives; and
>
> (5) a certification, signed and dated by the facility manager and an officer of the company under penalty of section 609.63, attesting that a plan meeting the requirements of section 115D.07 has been prepared and also attesting to the accuracy of the information in the progress report."[35]

Progress reports from regulated industry may be drafted in a way that omits "proprietary" information. The MPCA must review the submitted progress reports to make sure the above criteria are met. MPCA must make a written decision concerning the adequacy of such progress reports. If MPCA determines a submitted report is not adequate, it shall schedule a public meeting in the county where the facility is located. After the public meeting and after the regulated party has a 30 day period to amend its progress report, MPCA can commence an enforcement action to compel compliance.[36]

The Act requires that MPCA report to the Legislature on toxic air pollution matters. An initial report in 1995 required a five year strategy to protect public health and environment from emissions of toxic air contaminants and a list to prioritize and categorize toxic air contamination sources.[37] Every two years, beginning in 1997, MPCA must issue a continuing toxic air pollution report to the Legislature with the following information:

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[35] Minn Statutes §115D.08(1)(b)(1-5)

[36] See Minn Statutes §115D.08(2)

[37] See Minn Statutes §115D.15(1)

"(1) an analysis of the achievements, shortfalls, and resource needs for implementing the agency's strategy under subdivision 1, clause (1);

(2) an analysis of the data collected from the agency's statewide monitoring and inventory program under section 116.454;

(3) an analysis of reductions in emissions of toxic air contaminants; and

(4) an updated list prioritizing and categorizing facilities emitting toxic air contaminants."[38]

The most recent copy of this latter continuing report is available at the MPCA web site.[39]

2.5 Minnesota's Statutory Air Pollution Regulation

Most of Minnesota's statutory provisions explicitly controlling air pollution are contained in Chapter 116, which governs operations of the Minnesota Pollution Control Agency (MPCA). Chapter 116 is a poorly organized amalgam of air, water and waste regulatory provisions, all jumbled together, with very little specific organization along environmental media regulatory sectors.

Some of the air-related provisions affecting toxic air pollution are described below.

2.5.1 Definition of Air Pollution, Air Contaminant

The Act provides a definition of air pollution:

"Air pollution" means the presence in the outdoor atmosphere of any air contaminant or combination thereof in such quantity, of such nature and duration, and under such conditions as would be injurious to human health or welfare, to animal or plant life, or to property, or to interfere unreasonably with the enjoyment of life or property."[40]

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[38] Minn Statutes §115D.15(2)(1-4)

[39] 1999 Toxic Air Pollutant Update report to the Legislature is available at http://www.pca.state.mn.us/hot/legislature/reports/1999/airtoxics.pdf

[40] Minn Statutes §116.06(4)

Also provided is a definition of "air contaminant:"

> ""Air contaminant" or "air contamination" means the presence in the outdoor atmosphere of any dust, fume, mist, smoke, vapor, gas, or other gaseous, fluid, or particulate substance differing in composition from or exceeding in concentration the natural components of the atmosphere."[41]

Although these are fairly clear, unambiguous definitions, unfortunately there are no overall general duty provisions clearly found in Minnesota law that makes these concepts operative. There is no provision, for example, that clearly and unambiguously prohibits "air pollution" by "air contaminants" in a manner that is self-executing. This failure to provide a clear general duty to control air contaminants and air pollution is a critical failure of current Minnesota statutes over the control of toxic air pollution.

A general duty to abate "air pollution" is found in a section on issuance and revocation of permits:

> a) The pollution control agency may issue, continue in effect or deny permits, under such conditions as it may prescribe for the *prevention of pollution*, for the emission of air contaminants, or for the installation or operation of any emission facility, air contaminant treatment facility, treatment facility, potential air contaminant storage facility, or storage facility, or any part thereof. .....
>
> ..... The pollution control agency may revoke or modify any permit issued under this subdivision and section 116.081whenever it is necessary, in the opinion of the agency, *to prevent or abate pollution*."[42] (Emphasis supplied)

2.5.2 Air Pollution Emissions, Notification and Abatement

Under the statute, a person who controls the source of an excessive emission must follow the following procedures:

> "(a) A person who controls the source of an emission must notify the agency immediately of excessive or abnormal unpermitted emissions that:
>
> (1) may cause air pollution endangering human health;
> (2) may cause air pollution damaging property; or
> (3) cause obnoxious odors constituting a public nuisance.

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[41] Minn Statutes §116.06(2)

[42] Minn Statutes §116.07(4a)(a), in part

(b) If a person who controls the source of an emission has knowledge of an event that has occurred and that will subsequently cause an emission described in paragraph (a), the person must notify the agency when the event occurs.

Subd. 2. Abatement required. A person who is required to notify the agency under subdivision 1 must take immediate and reasonable steps to minimize the emissions or abate the air pollution and obnoxious odors caused by the emissions."[43]

However, the requirement above doesn't apply under certain exemptions, including an exemption for certain agricultural operations and emissions from sources that are regulated by MPCA emitting routine and authorized emissions.[44]

2.5.3 Adoption of Minnesota Standards for Air Quality and Emission Control

MPCA is authorized to adopt standards for air quality (which are presumably ambient, community air quality standards) under sections providing for the powers and duties section under "adoption of standards.". However, the criteria for setting air quality standards (which would presumably include ambient standards that protect the public and the environment from the adverse effects of toxic air pollution) are confusing, vague and may produce non-uniform results.[45]

For example, the statute requires that:

"no single standard of purity of air is applicable to all areas of the state. In adopting standards the pollution control agency shall give due recognition to the fact that the quantity or characteristics of air contaminants or the duration of their presence in the atmosphere, which may cause air pollution in one area of the state, may cause less or not cause any air pollution in another area of the state, and it shall take into consideration in this connection such factors, including others which it may deem proper, as existing physical conditions, zoning classifications, topography, prevailing wind directions and velocities, and the fact that a standard of air quality which may be proper as to an essentially residential area of the state, may not be proper as to a highly developed industrial area of the state. Such standards of air quality shall be premised upon scientific knowledge of causes as well as effects based on technically substantiated criteria and commonly accepted

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[43] Minn Statutes §116.061(1-2)

[44] See. Minn Statutes §116.061(3)(3-4)

[45] See Minn Statutes §116.07(2)

practices. No local government unit shall set standards of air quality which are more stringent than those set by the pollution control agency."[46]

Similar vague language subject to widely varying interpretations governs environmental conduct of hazardous waste and solid waste standard setting. There is no clear health-based content of the standard setting criteria.

Language later in the same section going to "rules and standards" provides criteria to adopt emission standards, but these provisions appear contradictory to the previously cited language on adoption of air quality standards:

> ".....the pollution control agency may adopt, amend and rescind rules and standards having the force of law.....for the prevention, abatement, or control of air pollution. Any such rule or standard may be of general application throughout the state, or may be limited as to times, places, circumstances, or conditions in order to make due allowance for variations therein. Without limitation, rules or standards may relate to sources or emissions of air contamination or air pollution, to the quality or composition of such emissions, or to the quality of or composition of the ambient air or outdoor atmosphere or to any other matter relevant to the prevention, abatement, or control of air pollution.....
>
> "..... As to any matters subject to this chapter, local units of government may set emission regulations with respect to stationary sources which are more stringent than those set by the pollution control agency."[47]

The statute is vague, contradictory, rambling, confuses ambient standards with emission standards and attempts to regulate too many media in a single section. The statutory language does not provide clear, unambiguous criteria for decisions by the MPCA. Part of the problem appears to be an attempt to protect industrial and agricultural interests in the text of the law that compromises the ability of the statute to unambiguously protect public health and environment.

2.5.4 Hydrogen Sulfide from Agricultural Animal Feeding Operations

A recent amendment to Chapter 116 requires the MPCA to monitor and identify potential livestock facility violations of Minnesota's ambient air quality standards for

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[46] Ibid

[47] Minn Statutes §116.07(4), in part

hydrogen sulfide, and to take certain compliance assistance and enforcement actions provided under the statute.[48]

2.5.5 Taconite Mining Waste Disposal Emissions

The presence of asbestos fibers motivates concerns about fugitive dust emissions from taconite mining waste disposal areas. However, the statute provides that a permit may allow disposal of these fine tailings in former mine pits as long as the applicant:

> "....demonstrates through an environmental impact statement and risk assessment that the deposition will not pose and unreasonable risk for pollution or degradation of groundwater."[49]

2.5.6 Air Permits and Particulate Matter

Minnesota statutory provisions on permitting for particulate matter sources potentially conflict with the Federal Clean Air Act and federal regulations for state implementation plans. Two provisions are at issue:

> "Limit on basis for action. The agency shall not issue or deny a permit or amendment or impose control requirements based solely on computer models projecting compliance or noncompliance with the secondary particulate matter standard."[50]

> Rule variance. The pollution control agency may issue a permit without regard to the maximum annual geometric mean standards for particulate matter or the primary maximum 24 hour concentrate standard for particulate matter."[51]

The writer speculates that the reason for these two statutory provisions are to deregulate certain environmental impacts and emissions from the mining industry in Minnesota.

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[48] Minn Statutes §116.0713 (1-2)

[49] Minn Statutes §116.0717

[50] Minn Statutes §116.0715

[51] Minn Statutes §116.0716

2.6 Minnesota Law on Open Burning

Open burning can be a significant source of toxic pollutants that can damage public health, cause public nuisance and release large quantities of persistent and bioaccumulative toxic substances.

In Minnesota, the fundamental law on open burning is found in forestry law and controls on wildfires. Such controls apply in "wildfire areas" which are defined:

> "Every county now or hereafter having within its boundaries any tract or area of 1,000, or more, contiguous acres of trees, brush, grasslands, or other vegetative material where the potential for wildfire exists, is hereby declared to be a wildfire area."[52]

A local government bringing a legal complaint for violation of the open burning statutes does not have to assert that an area is a wildfire area, but the accused may raise as a defense a factual claim that the county is not a wildfire area.[53] Given the definition, the writer expects that most counties in Minnesota are will probably be wildfire areas.

Specific open burning practices are banned under the law during all times of the year. Open burning of oil, rubber, plastics, chemically treated materials, or other materials which produce excessive or noxious smoke including, but not limited to, tires, railroad ties, chemically treated lumber, composite shingles, tar paper, insulation, composition board, sheetrock, wiring, paint, or paint filters is prohibited. In response to an oil spill, the MPCA may authorize open burning of oil and the burning of other prohibited materials may be allowed when the Commissioner of Health makes a determination that such burning is necessary to abate public health hazards.[54]

No person may burn hazardous waste,[55] industrial waste[56] (except in the case of raw untreated wood where other recycling and land disposal is not feasible[57]), or demolition debris from commercial or institutional structures (farm structures may be

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[52] Minn Statutes §88.01(6)

[53] See Minn Statutes §88.03

[54] See Minn Statutes §88.171(2)

[55] See Minn Statutes §88.171(3)

[56] See Minn Statutes §88.171(4)(a)

[57] See Minn Statutes §88.171(4)(b)

burned).[58] Open burning from salvage operations[59] and motor vehicle salvage[60] is prohibited.

Open burning of garbage generated from the handling of food is prohibited unless the county board of supervisors certifies that organized garbage collection is not available and then it is allowed from private residences.[61] Farmers may burn solid waste generated from a farming operation as long as it is done in a manner that is "nuisance free, pollution free, and aesthetic manner on the land used for farming." However, a farmer is explicitly prohibited from open burning plastics (other than plastic bailing twine), tires, hazardous waste, appliances, household batteries, used motor oil and lead acid batteries.[62]

Subject to permitting requirements or other fire bans, a city located outside of metropolitan areas[63] may authorize leaf burning by adoption of an ordinance for time intervals from September 15 through December 1. Ordinances are supposed to limit nuisance conditions, fire dangers and minimize air pollution; a copy of the ordinance must be sent to MPCA.[64]

Persons who wish to burn vegetative and other materials that are not otherwise banned for burning must get a permit from a fire warden, forest officer or authorized MPCA agent. Permits must set forth the time and place of the open burning, the conditions under which the fire may be started and the materials that are to be open burned.[65]

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[58] See Minn Statutes §88.171(5)

[59] See Minn Statutes §88.171(6)

[60] See Minn Statutes §88.171(7)

[61] See Minn Statutes §88.171(8)

[62] See Minn Statutes §17.135 and §88.171(8)

[63] Defined as counties of Anoka, Carver, Dakota excluding the city of Northfield, Hennepin, excluding the city of Hanover, Ramsey, Scott excluding the city of New Prague, and Washington See Minn Statutes §473.121(2)

[64] See Minn Statutes §116.082

[65] See Minn Statutes §88.17(1)

2.7 Imminent Risks from Toxic Air Pollution

Toxic air pollution risks that are immediately hazardous to life and health are regulated under MPCA's emergency powers provision:

> "If there is imminent and substantial danger to the health and welfare of the people of the state, or of any of them, as a result of the pollution of air, land, or water, the agency may by emergency order direct the immediate discontinuance or abatement of the pollution without notice and without a hearing or at the request of the agency, the attorney general may bring an action in the name of the state in the appropriate district court for a temporary restraining order to immediately abate or prevent the pollution. The agency order or temporary restraining order shall remain effective until notice, hearing, and determination pursuant to other provisions of law, or, in the interim, as otherwise ordered. A final order of the agency in these cases shall be appealable in accordance with chapter 14."[66]

Please note that chronic health hazards and non-life threatening health damages and non-catastrophic environmental damages are not addressed through such imminent risk provisions.

2.8 Statutory Provisions on Poly-Chlorinated Biphenyls

The Minnesota Legislature adopted the following policy statement on the burning of poly-chlorinated biphenyls (PCBs):

> "State policy. The legislature finds that risks to human health must be adequately evaluated before a facility may burn PCBs. The legislature also finds that if there is a risk to human health, all human health must be treated with equal concern, and facilities that cause risks to human health must not be allowed to operate in sparsely populated areas if they would not be allowed to operate in heavily populated areas."[67]

However, the only specific regulatory requirement that was adopted concerned the requirement for the preparation of Environmental Impact Statements on new or renewed PCB waste burning permits:

> "The pollution control agency may not allow burning of wastes containing 50 ppm or greater PCBs by permit or otherwise unless an environmental impact statement

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[66] Minn Statutes §116.11

[67] Minn Statutes §116.38(1)

is completed. It may not renew a permit for burning wastes containing 50 ppm or greater PCBs until an environmental impact statement is completed. This section does not apply to experimental burning of small quantities of waste containing 50 ppm or greater PCBs."[68]

2.9 Toxic Substances Deposition Requirements

The Minnesota Legislature has enacted a "toxic substances deposition" provision of state law, but the nearly exclusive focus of that provision is for the control of acid rain. The provision addresses airborne wet or dry deposition of chemical compounds having the potential to form an aqueous solution with a pH level lower than the level considered normal under natural conditions or lower than 5.6.[69]

Under the statute, MPCA must publish a list of counties that contain natural resources sensitive to the impacts of acid deposition. As of 1986, MPCA was required to publish a standard for acid deposition in those counties and to adopt an acid deposition control plan to attain and maintain the standard. The plan must address sources inside and outside of Minnesota that emit more than 100 tons of sulfur dioxide per year. As of 1990, all sources within Minnesota were to be in compliance with the acid deposition control plan.[70]

Finally, as of July, 1993, MPCA is required under the law to:

"....establish a statewide monitoring program for, and inventory of probable sources of, releases into the air, ambient concentrations in the air, and deposition from the air of toxic substances."[71]

This provision does not appear exclusively restricted to acid deposition. More information about MPCA toxic air pollution ambient monitoring program is available at the MPCA web site.[72]

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[68] Minn Statutes §116.38(2)

[69] See Minn Statutes §116.42

[70] See Minn Statutes §116.44

[71] Minn Statutes §116.454

[72] See http://www.pca.state.mn.us/air/airtoxics.html

2.10 Minnesota Project XL Permits

Minnesota Statutes Chapter 114C authorizes MPCA to participate in Project XL, an EPA, state, industry and stakeholder group process for "environmental regulatory innovations" designed to increase overall levels of environmental performance, pollution prevention, citizen stakeholder involvement and industrial operator flexibility over what might be achieved under usual regulatory circumstances. The Chapter authorizes issuance of Minnesota XL Permits under specific criteria and the issuance of rule variances on pollution control and environmental management requirements to increase flexibility for industrial operators. MPCA may adopt such XL permits and variances under a single, unified procedure, generally in an XL site agreement.

A specific XL general duty criteria for MPCA issuance of an XL permit include the following:

> "(1) the permit allows the facility owner or operator as much operational flexibility as can be reasonably provided consistent with the need to achieve the anticipated pollution reduction and ensure the verifiability and enforceability of the permit's pollution limits;
>
> (2) the permit provides facility-wide pollution limits where practical, verifiable, and enforceable;
>
> (3) the permit regulates air, water, and land pollution effects, direct and indirect;
>
> (4) the permit encourages pollution prevention or source reduction;
>
> (5) the permit encourages innovation in the design, production, distribution, use, reuse, recycling, or disposal of a product such that air, water, and land pollution impacts are minimized over the life cycle of a product;
>
> (6) the permit reduces the emission of nontoxic pollutants regulated under applicable law;
>
> (7) the permit reduces indoor chemical exposure, water use, or energy use;
>
> (8) the permit minimizes transfer, direct and indirect, of pollution between the air, water and land;
>
> (9) the regulatory techniques employed in the permit have potential application to other permittees;
>
> (10) the permittee agrees to measure and demonstrate the success of the Minnesota XL permit in addition to the assessment in subdivision 2, clause (6), such as

tracking pollution prevention incentives and initiatives or using surveys to measure any attitudinal changes by facility personnel or the public;

(11) the permit is multi-agency, under subdivision 4."[73]

The XL statutory criteria do not address community and environmental risk levels and the emission reduction mandate does not explicitly apply to toxic pollutants. In fact, section 6 explicitly cites "nontoxic" pollutants as the only consideration for the XL emission reduction criteria. There is no requirement in the rules to ensure that emission flexibility at a facility will not create excessive site-specific environmental risk from toxic emissions.

Finally, Minnesota's XL statute may authorize variances on federal permitting requirements (including control technology, impact evaluation and public participation) that have been the basis for EPA's delegation of its prevention of significant deterioration authority to Minnesota's air pollution control program.[74]

MPCA can revoke a Minnesota XL if the Agency makes the following findings:

"(1) the permittee is in significant noncompliance with the Minnesota XL permit or with applicable law;

(2) the permittee is not able, or has shown a lack of willingness, to comply with future pollution reduction deadlines in the Minnesota XL permit;

(3) the permitted facility or activity endangers human health or the environment and the danger cannot be removed by an amendment to the Minnesota XL permit; or

(4) after proper notification and a reasonable amount of time has passed, the permittee has not satisfactorily addressed a substantive issue raised by a majority of members of the stakeholders group."[75]

There is no provision in the law which explains criteria for what constitutes an endangerment to human health and environment as specified in subsection 3.

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[73] Minn Statutes §114C.11(3)(1-11)

[74] See Minn Statutes §114C.12(2)

[75] Minn Statutes §114C.12(5)(a)

2.11 Enforcement Discretion, Public Disclosure and General Duties Under Minnesota's Environmental Improvement Audit Program Affecting Toxic Pollutants

Minnesota law has established an "Environmental Improvement Program."[76] Under the statute, a source that conducts an "environmental audit" and voluntarily submits an audit report showing violations can escape enforcement and penalties under certain conditions as long as it submits a schedule to come into compliance.

Toxic pollution considerations potentially enter into some of the exceptions for enforcement and penalties provided in the statute.

Notwithstanding the audit privilege claimed under Section 114C.24 (1-2), Minnesota may commence a civil or administrative enforcement action or levy a penalty if, among other conditions, a facility's violation has:

> "Caused serious harm to, or presents an imminent and substantial endangerment to, human health or the environment."[77]

In addition, an enforcement action may address an imminent risk:

> "(3) an enforcement action against the owner or operator of a facility to enjoin an imminent and substantial danger under section 116.11."[78]

Under Section 114C.24 of the statute, audit reports submitted to the state must be held confidential. As a result, audit reports that contain information about emissions and toxic air pollution that are submitted as part of a voluntary admission of a violation are withheld from the public, unlike other emissions data or information.

Underlying data and testing information that form the basis of an audit report submitted to the state under Section 114C.22, which may include information on toxic air pollutants or factors that can affect the emissions of measurement of toxic pollutants, can be withheld from the state under Section 114C.26, which, in part, provides:

> "The state may not request, inspect, or seize a final audit report, draft audit papers, the notes or papers prepared by the auditor or the person conducting the audit, or the internal documents of a regulated entity establishing, coordinator or responding to the audit, other than the report required in section 114C.22, subdivision 2,

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[76] See Minn Statutes §114C.20 through §114C.28

[77] Minn Statutes §114C.24(3)(2)(ii)

[78] Minn Statutes §114C.24(3)(3)

provided that the regulated entity is in compliance with its commitments under section 114C.22 and 114C.23."[79]

To overcome the above presumption with an exception contained the statute,[80] the state must show that the situation presents "an imminent and substantial endangerment to human health or the environment," among other excepted factual situations.

2.12 Motor Vehicle Salvage Facilities

Minnesota statutes provide authority for the Commissioner of the Pollution Control Agency to establish "best management practices" for the control of motor vehicle salvage facilities (otherwise known as auto junkyards).[81] The term "best management practices:"

> "....means practices that are capable of preventing releases and minimizing the degradation of the environment, considering technical feasibility, implement ability, availability, effectiveness, economic factors and environmental effects."[82]

Auto salvage yards generate large amounts of potentially toxic wastes. These include shredder fluff (mostly vinyl plastics and foam) that can catch fire, gasoline vapors and liquids from gas tanks, mercury from hood light switches and chlorofluorocarbon from auto air conditioning equipment. The statute gives MPCA broad authority to requirement best management practices to control potential toxic contaminants at these facilities. However, this section of the statute had a sunset or repealer effective on June 30, 1999. As of the end of 1999, there is no indication that the Minnesota Legislature extended this provision.

However, another provision that remains in effect requires salvagers to make a "good faith" effort to remove all of the mercury switches in a junk vehicle before it is crushed by the salvage operator.[83]

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[79] Minn Statutes §114C.26(1)

[80] See Minn Statutes §114C.26(4)

[81] See Minn Statutes §116.66, et seq.

[82] Minn Statutes §116.66(1)(b)

[83] See Minn Statutes §116.92(3)(c)

2.13 Minnesota Statutory Requirements for Applicable to Waste Incineration

2.13.1 Requirements for Infectious Waste Incinerators

Infectious waste in Minnesota is defined as:

> "'Infectious waste' means laboratory waste, blood, regulated body fluids, sharps, and research animal waste that have not been decontaminated."[84]

Under the statute, "sharps" are defined as:

> "Sharps" mean: (1) discarded items that can induce subdermal inoculation of infectious agents, including needles, scalpel blades, pipettes, and other items derived from human or animal patient care, blood banks, laboratories, mortuaries, research facilities and industrial operations; and (2) discarded glass or rigid plastic vials containing infectious agents."[85]

Under the statute, infectious wastes must not be compacted or mixed with other types of wastes prior to incineration.[86] Because of the breadth of the definition of "infectious waste," such wastes can be expected to contain chromium, radioactive materials and substances that generate acid gases or toxic organic compounds when burned. It is important to note, however, that the definition of "infectious waste" will exclude many other materials found in medical settings which will generate toxic air contaminants when burned. These materials are treated as ordinary municipal solid wastes.

A person may not construct or expand the capacity of an infectious waste incinerator without obtaining an air emission permit from MPCA.[87] However, the statutes also contains an exception from this requirement that can be subject to varying interpretations:

> "This section does not affect permit requirements under the rules of the agency for an incinerator that is upgraded to meet pollution control standards or an incinerator

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[84] Minn Statutes §116.76(11)

[85] Minn Statutes §116.76(18)

[86] See Minn Statutes §116.78(7)

[87] See Minn Statutes §116.801(a)

with a capacity of 350 pounds or less per hour that is planned to manage waste generated primarily by the owner or operator of the incinerator."[88]

If a permit is required to construct or expand an infectious waste incinerator, the MPCA must prepare an environmental impact statement for approval if MPCA has not yet promulgated final air emission rules for incinerators.[89]

2.13.2 Monitoring Requirements for Poly-Chlorinated Biphenyl (PCB) Waste Incinerators

Minnesota law requires that permits for PCB waste incinerators require continuous emission monitoring systems that "ensure optimum combustion efficiency of dioxin precursors." The continuous monitoring systems must create a permanent record that must be made available to MPCA **and the public** upon request. MPCA must periodically verify that such systems operate properly. Finally, operators of permitted PCB waste incinerators "shall immediately commence shutdown of the incinerator until appropriate modifications to the facility have been made" in the event that accurate and valid emissions data shows the facility is violating its permit.[90]

2.13.3 Toxic Emission Monitoring Requirements for Waste Incinerators

If an incinerator permit contains emission limits for dioxin, cadmium, chromium, lead, or mercury, the permit must also contain conditions requiring installation of an air emission monitoring system approved by MPCA. The monitoring system must provide continuous measurement to "ensure optimum combustion efficiency for the purpose of ensuring optimum dioxin destruction." The facility operator must provide a permanent record of monitored emissions available on request to MPCA **and to the public.**[91]

If the continuous monitoring system shows that the facility is exceeding its permit requirements, the facility shall immediately report the exceedance to MPCA. The facility must also either commence appropriate modifications to regain compliance or commence

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[88] Minn Statutes §116.801(b)

[89] See Minn Statutes §116.802

[90] See Minn Statutes §116.84

[91] See Minn Statutes §116.85(1)

shutdown if such modifications cannot be completed within 72 hours. "Compliance with permit requirements must then be demonstrated based on additional testing."[92]

If an incineration facility is subject to stack testing and tested emissions exceed permit requirements, the facility must immediately report the exceedance to MPCA. A 1998 statutory amendment provided for the following in the event of a stack test showing permit non-compliance:

> "[the facility] .....shall undertake appropriate steps to ensure the facility's compliance with permitted requirement, and shall demonstrate compliance within 60 days of the initial report of the exceedance. If the commissioner determinates that compliance has not been achieved within 60 days, then the facility shall shut down until compliance with permit requirements is demonstrated based on additional testing."[93]

Before the 1998 statutory amendment, an applicable waste incineration facility had to demonstrate compliance within 30 days after a stack test showing non-compliance. The 1998 revision by the Legislature extended this time period to the 60 day interval.

2.13.4 Testing Requirements for Waste Incinerators with Mercury Emission Limitations

Minnesota law creates a general duty that any waste incinerator having a permit that contains a mercury emission limit must also contain conditions requiring periodic stack testing for mercury emissions. If approved by the Commissions and permitted by federal regulations, hospital waste incinerators may substitute mercury segregation work practices as an alternate to stack testing requirements.[94]

As a starting point, all waste incinerators must conduct stack testing for mercury at least every three months. However, a facility that burns greater than 30% by weight of refused derived fuel is permitted to extend this interval to an annual period, unless the prior test showed a permit exceedance. In the latter case, the facility must return to quarterly testing until the facility can show permit compliance with its mercury limits.[95]

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[92] See Minn Statutes §116.85(2)

[93] Minn Statutes §116.85(3)

[94] See Minn Statutes §116.85(1a)(a)

[95] See Minn Statutes §116.85(1a)(b)

If a waste incinerator can show that its tested emissions have been below 50% of the facility's permitted mercury limit for three consecutive years, the stack testing requirement can be relaxed to once every three years, or an interval required by federal regulations, whichever is more stringent. If a stack emission test shows mercury emissions have increased to a level above 50% of the permitted mercury limit, then the waste incinerator must resume annual stack testing. Presumably, MPCA has the option to require quarterly testing once again if annual tests are exceeded.[96]

2.13.5 Review of Mercury Emission Limitations in Permits up for Modification

Minnesota law contains a provision that might be useful for citizens in preventing a waste incineration facility from "backsliding" on mercury emission limitations:

> "In amending, modifying, or reissuing a facility's air emissions permit which contains a provision that restricts mercury emissions from the facility, the commissioner shall, at a minimum, continue that permit restriction at the same level unless the applicant demonstrates that no good cause exists to do so."[97]

The statute does not articulate what might constitute a "good cause," so the practical value of the provision in addressing, for example, a proposed increased emission limit for mercury at a facility that is increasing its waste firing rate is not readily apparent.

2.13.6 Minnesota's Permissive Approach on Use of Refuse-Derived Fuels

Refuse-derived fuel (RDF) is a product produced by processing municipal solid waste to remove non-combustible materials and to produce a more uniform size classification for the material. RDF will still contain toxic metals after processing and burning RDF will produce toxic organic byproducts, such as chlorinated dibenzo-dioxins and furans.

Minnesota law encourages the burning of RDF and specifically prohibits imposing additional monitoring and testing requirements on combustion units burning less than 30% by weight of RDF:

> "The agency may not require, as a condition of using refuse-derived fuel under this section, any additional monitoring or testing of a solid fuel fired boiler's air

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[96] See Minn Statutes §116.85(1a)(c) & (b)

[97] Minn Statutes §116.85(1a)(e)

emissions beyond the monitoring or testing required by state or federal law or by the terms of the solid fuel fired boiler's permit issued by the agency."[98]

Since "solid fuel fired boiler" is defined specifically in this section,[99] the section authorizes use of RDF with the above prohibition on MPCA action and the statute fails to define the term "incinerator." A facility burning less than the 30% weight fraction of RDF will escape provisions for toxic air contaminant testing intended for waste incinerators found at Minn Statutes §116.85.

With only a notification requirement and no permit modifications, a new or existing solid fuel fired boiler may use RDF under the following conditions:

No modifications, or only minor modifications of the boiler are required.

There will be no violation of ambient air quality standards for common pollutants.

The solid fuel boiler has a valid permit to operate.

The RDF is processed by a facility permitted before June 1, 1991 or the facility is part of a regional waste management system the processing of the waste removes mercury-containing items, and the processor has a contract to provide RDF to the boiler.

The owner or operator provide written notice to MPCA.on the commencement of RDF burning and the amount of RDF to be burned..

The RDF producer only accepts waste from counties "that provide for the removal of household hazardous waste from the waste."[100]

2.13.7 Lead Paint Waste Disposal

Under Minnesota law, incineration of lead paint waste at a mixed waste municipal solid waste incinerator is prohibited.[101] Lead paint waste must be disposed at a municipal solid waste landfill which was permitted after January 1, 1989, a demolition debris landfill that has a liner and leachate collection system or a solid waste incinerator

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[98] Minn Statutes §116.90(2)(c)

[99] See Minn Statues §116.90(1)(e)

[100] See Minn Statutes §116.(2)(a) & (c)

[101] Minn Statutes §116.88(2)

ash landfill approved by MPCA.[102] However, a homeowner may disposed of such waste as provided by law for household hazardous waste collection.[103] If lead paint waste is attached to woodwork, walls or other elements of a structure, such material must be disposed of at any permitted demolition debris land disposal facility.[104]

2.14 Legislative Goals and Strategies for Reduction in Mercury Emissions

In 1999, the Minnesota Legislature enacted overarching goals relating to reduction of mercury emissions in the state:

> "Goal. It is the goal of the state to reduce mercury contamination by reducing the release of mercury into the air and water of the state by 60 percent from 1990 levels by December 31, 2000, and by 70 percent from 1990 levels by December 31, 2005. The goal applies to the statewide total of releases from existing and new sources of mercury. The commissioner shall publish updated estimates of 1990 releases in the State Register."[105]

The legislative language embraced the specific reduction concepts contained in the March 15, 1999 report entitled "Report on the Mercury Contamination Reduction Initiative Advisory Council's Results and Recommendations."[106]

2.15 Substantive Provisions on Mercury Reduction

Minnesota has enacted a number of stringent product, manufacturing and consumer regulations on mercury that go beyond minimum federal requirements.

A person who sells mercury to anyone in Minnesota must provide a materials safety data sheet to the purchaser. The purchaser must sign a statement ensuring that the purchaser will only use the mercury for a medical, dental, instructional, research, or

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[102] See Minn Statutes §116.875(1)

[103] See Minn Statutes §116.875(3)

[104] See Minn Statutes §116.875(4)

[105] Minn Statutes §116.915(1)

[106] For access to this report, see: http://www.pca.state.mn.us/hot/legislature/reports/1999/mercury.pdf

manufacturing purpose and that the purchaser understands the toxicity of mercury and appropriate storage, use and disposal requirements.[107]

A user of mercury may not dispose of mercury contaminated residues, particles, scrapings or other materials that contain mercury in solid waste or wastewater, except for traces of materials resulting from dental procedures.[108] Manufactures and wholesalers may not sell, and a retailer may not knowingly sell, the following items unless each is labeled with a warning that the mercury must be removed for proper reuse or recycling before the item is introduced to the solid waste or wastewater streams:

> a thermostat or thermometer; an electric switch, individually or as part of another product, other than a motor vehicle; an appliance; a medical or scientific instrument; and an electric relay or other electrical device.[109]

When any of the above items are removed from service, the mercury must be reused, recycled or otherwise managed to comply with Minn Statute §115A.932, which is designed to keep mercury containing materials out of solid waste and wastewater streams. Persons in the business to deal with the above items in households shall ensure that the item is properly managed for mercury recycling and disposal requirements.[110]

A person who manufactures thermostats and displacement electrical relays that contain mercury must provide sufficient information and incentives to consumers to ensure the thermostats are removed from service they will comply with requirements of Minn Statute §115A.932.[111]

Medical facilities may not routinely distribute mercury-containing thermometers.[112] A person may not sell for resale or retail a toy or game that contains mercury, or an item of clothing or wearing apparel that is exempt from sales tax that contains an electrical switch with mercury.[113] A person who sells, or provides contractual services relating to fluorescent and high intensity discharge lamps that contain mercury for large scale use to industrial, commercial, office or multi-unit

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[107] Minn Statutes §116.92(1)

[108] Minn Statutes §116.92(2)

[109] See Minn Statutes §116.92(3)

[110] See Minn Statutes §116.92(4)

[111] See Minn Statutes §116.92(5) & (5a)

[112] See Minn Statute §116.92(6)

[113] See Minn Statute §116.92(8)

residential housing shall inform purchasers of the regulatory requirements for disposal of such lamps.[114]

After June 30, 1997, mercury manometers for measuring vacuum or pressure for use on dairy farms may not be sold or installed, and existing devices may not be repaired. After December 31, 2000, all mercury manometers on dairy farms must be removed from use.[115]

The statute does not permit enforcement against household parties and some retailers of certain of the above provisions under the general MPCA enforcement powers. For these persons, the maximum fine is limited to an administrative penalty of $700.

2.16 Reporting of Electric Utility Mercury Emissions

Statutory amendments enacted in 1997 provide that electric utilities serving consumers in Minnesota must make an annual report of mercury emissions by April 1 of each year. The report must include information on the amount of electricity generated at each facility for use or for sale in the state, the amount of fuel used to generate that electricity in the previous calendar year and the amount of mercury emitted based on emission factors, stack tests, fuel analysis and other methods approved by MPCA. Reports must include the mercury content of fuels if such information is developed in association with a stack testing operation.[116]

The language of this particular provision may be open to an interpretation that would not necessarily require all mercury emissions to be reported. Under the language of the statute, an electric generator that produced electricity for interstate sale might be entitled to omit mercury emissions resulting from such generation.[117]

2.17. Minnesota's Environmental Rights Statute and Toxic Air Contaminants

In 1971, the Minnesota Legislature adopted an environmental rights provision[118] patterned after a similar Michigan law written by Prof. Joseph Sax, then of the University

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[114] See Minn Statute §116.92(7)

[115] See Minn Statute §116.92(8a)

[116] See Minn Statute §116.925(1) & (2)

[117] See the language at Minn Statute §116.925(2)(a)(3)(I).

[118] See Minn Statute §116B, et seq.

of Michigan Law School. The provision declares that "...each person is entitled by right to the protection, preservation and enhancement of air, water, land, and other natural resources." The law creates a right of action to commence litigation[119] with certain limitations for any person to gain equitable relief from "pollution, impairment or destruction" of Minnesota's natural resources.

Although on the surface, the Environmental Rights Statute appears promising as a remedy to address unresolved environmental and public health problems associated with toxic air contaminants, important differences in the Minnesota law (compared to the similar Michigan law) make the law potentially difficult to use in addressing toxic air contaminants.

One hindrance is a provision disallowing litigation against a polluter "for conduct taken by a person pursuant to any environmental quality standard, limitation, rule, order, license, stipulation agreement or permit issued by the pollution control agency..."[120] An emission source of toxic air contaminants can thus immediately use its compliance with Minnesota's air rules and any Minnesota permit it has as a defense to fend off litigation claiming the source is causing "pollution, impairment or destruction."

However, the prior provision does not bar citizens from bringing litigation against the State of Minnesota alleging that an "environmental quality standard, limitation, rule, order, license, stipulation agreement, or permit is inadequate to protect the air, water, land, or other natural resources located within the state from pollution, impairment, or destruction." However, the plaintiff must show "material evidence" of this inadequacy[121] and must further show that such "pollution, impairment or destruction" "materially adversely affects or is likely to materially adversely affect the environment."[122]

The "materially adverse" burden will likely make any challenge very difficult at a single source of toxic air contamination that contributes to a larger overall problem from many sources that in aggregate cause "pollution, impairment and destruction "

The definition of "pollution, impairment or destruction" contains a provision excluding actionable conduct consisting "solely .....of the introduction of an odor into the air."[123] This means that citizens facing a high emitting facility cannot maintain an action

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[119] See Minn Statute §116B.03

[120] See Minn Statute §116B.03(1)

[121] See Minn Statute §116B.10(2)

[122] See Minn Statute §116B.02(5)

[123] See Minn Statute §116B.02(5)

without making allegations that go beyond odors, such as allegations of environmental and health damage.

On the positive side, the statute imposes a very strong burden on MPCA to protect the environment:

> "In any such administrative, licensing, or other similar proceedings, the agency shall consider the alleged impairment, pollution, or destruction of the air, water, land, or other natural resources located within the state and no conduct shall be authorized or approved which does, or is likely to have such effect so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land, and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct."[124]

This provision would thus appear to authorize MPCA to go beyond the minimum requirements of its rules to impose more stringent conditions in permit proceedings to control toxic air contaminants.

2.18 Minnesota's Statute on Environmental Quality Board Review

Minnesota has a process of environmental review involving environmental assessment worksheets, environmental impact statements and review of the adequacy of such documents by the Minnesota Environmental Quality Board.[125]

By gaining the signatures of 25 persons, a citizen may petition for preparation of an environmental assessment worksheet, which can serve as the basis of requiring further environmental and review decisions. Such a petition must show that a given action by a governmental body concerning a project or permit may pose significant environmental effects.[126]

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[124] Minn Statute §116B.09(2)

[125] See Minn Statutes §116C, et seq and §116D, et seq

[126] See Minn Rule §4410.1100

Environmental Assessment Worksheets are mandatory for some facilities that emit toxic air contaminants, such as electric utility plants,[127] petroleum refineries,[128] fuel conversion facilities,[129] metallic mineral mining and processing,[130] major stationary sources of air pollution,[131] hazardous waste facilities,[132] pulp and paper processing plants,[133] animal feedlots,[134] and solid waste facilities.[135] The reader is cautioned to review the text of the rules as there are applicability thresholds for many such decisions contained in the rules which are too detailed to include here. Some facilities in the above categories will have mandatory Environmental Impact Statement requirements under the provisions of Rule 4410.4400, depending on their size and magnitude.

Parties aggrieved by decisions concerning the adequacy of environmental impact statements and the need for environmental assessment worksheets may initiate litigation on these matters.[136] This would presumably include the adequacy of such documents to analyze the effects of toxic air pollution on the environment and public health as the criteria for making such decisions recognize that environmental impacts may not be mitigated by existing agency rules.[137]

The rules made pursuant to the statute have some clear procedural prohibitions that can also be the basis of citizen litigation potentially involving review of the environmental impact of toxic air contaminants:

> "If an EAW or EIS is required.... of if a petition for an EAW is filed....., a project may not be started and a final governmental decision may not be made to grant a permit, approve a project, or begin a project, until:

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[127] See Minn Rule §4410.4300(3)

[128] See Minn Rule §4410.4300(4)

[129] See Minn Rule §4410.4300(5)

[130] See Minn Rule §4410.4300(11)

[131] See Minn Rule §4410.4300(15)

[132] See Minn Rule §4410.4300(16)

[133] See Minn Rule §4410.4300(13)

[134] See Minn Rule §4410.4300(29)

[135] See Minn Rule §4410.4300(17)

[136] See Minn Statutes §116D.04(9)-(11)

[137] See Minn Rule §4410.1700(7)

A a petition for an EAW is dismissed;
B a negative declaration on the need for an EIS is issued;
C an EIS is determined adequate; or
D a variance is granted under subparts 3 to 7 or the action is an emergency under subpart 8."[138]

Minnesota's Environmental Policy statute also has a single substantive decision burden section similar to the provisions contained in the Minnesota Environmental Rights provision that will be of interest to parties adversely affected by toxic air pollution:

> "No state action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land or other natural resources located within the state, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct."[139]

However, the need for a state action triggers this kind of review. In the circumstance when a source does not need a permit from the state to commence or maintain emissions of toxic air contaminants, all of this language will fail to offer any remedy at all to citizen aggrieved by such emissions. Minnesota's high thresholds for requiring air discharge permits ensures that many toxic air dischargers will never be subject to state agency decisions triggering this kind of review.

2.19 Biomass Fuels and Firewood from Right of Way Construction and Maintenance

Minnesota law requires that right of way companies that remove or trim trees may not dispose of these biomass wastes by open burning or deposit in a landfill without first offering the tree wastes 6 inches in diameter or larger to the public for firewood, subject to the approval of any landowners involved.[140] This section does not, therefor, operate as a direct ban on open burning which is known to cause significant emissions of toxic air contaminants.

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[138] See Minn Rule §4410.3100(1)

[139] Minn Statutes §116D.04(6)

[140] See Minn Statute §116F.30

3. Minnesota's Air Pollution Rules on Toxic Air Pollution

3.1 Minnesota has not Promulgated Comprehensive Toxic Air Pollution Control and Health/Environment-Based Evaluation Rules

Minnesota has not issued comprehensive rules to control toxic air pollution with application of technology-based requirements and health/environmental reviews of residual risks that go beyond minimum federal requirements. In addition, the state does not impose permitting and common pollutant emission control requirements on a large universe of minor sources that would otherwise control many toxic air pollutants.

The state has enacted extensive rules for waste combustors that are discussed in a subsequent section.

3.2 Minnesota's Thresholds for Air Discharge Permitting Allow Many Federally-Unregulated or Poorly Regulated Smaller Sources to Escape Permitting and Control Requirements

Minnesota's state emission thresholds for requiring an air discharge permit are shown in the table below:

Pollutant	State Permitting Threshold in Tons/Year for Potential to Emit
Sulfur Dioxide	50
Fine Particles (PM-10)	25
Lead	0.5
Nitrogen Oxides	100
Carbon Monoxide	100
Volatile Organic Compounds	100
Any Single Hazardous Air Pollutant Listed under the Federal Clean Air Act	10
Combined Total of Federal Hazardous Air Pollutants	25

Although some facilities with emissions below these amounts may have to get a permit solely because they are subject to a federal emission standard, Minnesota's approach is focused on "registration permits" for such facilities. These permits will

generally not impose any additional emission limitations or control requirements on these sources.

Minnesota has not enacted requirements for reasonably available control technology for small sources of volatile organic compounds and particulate matter. Some of these sources will thus operate with uncontrolled emissions of toxic air contaminants and with no evaluation or limitation of potential health and environmental consequences from such operation.

For example, if a Minnesota facility emits a toxic volatile organic compound which is not on the EPA list of 189 federally regulated hazardous air pollutants, and this source category is not regulated by any federal new source performance standard or maximum achievable control technology standard, this facility can potentially discharge up to 200,000 pounds a year of this pollutant without applying any control technology or taking any measure to limit health and environmental impacts. If the source is causing odors in the community, no remedy is available because of statutory exemptions for odors and the repeal of Minnesota's requirements on odors.

Similarly, if a Minnesota facility discharges a solid compound that is a dangerous carcinogen and it is not on the list of federally regulated hazardous air pollutants – perhaps a toxic pesticide or dye component – a facility may discharge up to 50,000 pounds of this toxic solid pollutant per year with no control requirements or risk assessment.

3.3 State Permitting Procedures Don't Require Submittal of Information about All Toxic Air Pollutants

Minnesota's rules on air permit application procedures ensure that neither MPCA nor the public will discover information about federally unregulated toxic air pollutants. For example, the following provision insulates permit applicants from having to indicate detailed information about such toxic air contaminants:

> "Applicants shall submit the following information as required by the standard application form.....The following emissions-related information:
>
> The permit application shall provide the information required by this part for every emission unit within the stationary source..... Notwithstanding the first sentence, if a stationary source is not a major source and the sole reason it is required to have a permit is because it is subject to federal standards ....then the application

need only provide information for the emissions units regulated by those federal standards...."[141]

Another objectionable provision that ensures that MPCA and the public remain unaware of federally unregulated emissions is also found in the air discharge permit application section:

"The permit application shall specify the potential emissions.....These potential emissions shall be specified for each regulated air pollutants and each hazardous air pollutant that is not yet a regulated air pollutant.....*except that pollutants which are regulated solely under section 112(r) [accidental release requirements] of the act need not be included....*"[142] (emphasis added)

3.4 Minnesota's Air Permitting Rules Allow Emission Flexibility, Trading and Alternative Operating Scenarios that May Create "Hot Spots"

Minnesota's air permitting rules allow applicants to propose emission trades within facilities under a facility-wide cap and authorize alternate operating scenarios.[143] However, if a large facility undertakes such measures, it has the potential to create "hot spots" where a less well controlled emission unit facility can have a locally significant high impact area on a close in neighborhood.

Nothing in Minnesota's rules provide for any health and/or environmental evaluation of the consequences of allowing this kind of emission unit operational trade or alternate scenario, or provides any detail at all on toxic exposures associated with such practices.

3.5 General Duty Requirements on the Content of Air Discharge Permits that May Affect Emissions of Toxic Air Pollution

Minnesota's air permitting rules provide a general duty under the MPCA's discretion when writing emission limitations and standards for permits. In describing the nature of emission limitations and standards in air discharge permits, the rules state (in part):

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[141] See Minn Rule §7007.0500(2)(C)(1)

[142] See Minn Rule §7007.0500(2)(C)(4)

[143] See Minn Rule §7007.0500(2)(G) & (H)

> "The permit shall also include any condition the agency determines to be necessary to protect human health and the environment."[144]

In the very next rule section, MPCA's rules restrict the ability of the agency to actually carry out such duties by specifying which emission units can be regulated:

> "Emission units covered by permit. The permit shall cover any emissions unit within the stationary source for which there is an applicable requirement, and any unit which the agency believes should be covered in order to protect human health and the environment. However, if a stationary source is not a major source and the sole reason it is required to have a permit is because it is subject to federal standards described under part 7007.0250, subpart 2, then the permit shall only cover emissions units regulated by those federal standards...."[145]

Provisions for reopening air permits also have general duty requirements. The agency has the discretion to reopen a permit if (in part):

> "Alterations or modifications to the permitted facility will result in or have the potential to result in significant alternation of the nature or quantity of regulated air pollutants to be emitted by the permittee..."[146]

> And...

> "The commissioner finds that the permitted facility or activity endangers human health or the environment and that a change in the operation of the permitted facility or in the conduct of the permitted activity would remove the danger to human health or the environment."[147]

Permit revocation provisions contain general duty requirements. MPCA can revoke a permit without reissuance when:

> "The agency finds that the permitted facility or activity endangers human health or the environment and that the danger cannot be removed by an amendment to the permit...."[148]

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[144] Minn Rule §7007.0800(2)

[145] Minn Rule §7007.0800(3)

[146] Minn Rule §7007.1600(2)(B)

[147] Minn Rule §7007.1600(2)(F)

[148] Minn Rule §7007.1700(1)(C)

The rules provide no further details on precisely what the language concerning protection of human health and environment means and the substantive decision-making method by which the agency would achieve this goal. In practice, these kinds of general duty requirements are very hard to enforce because of the ability of regulated entities to challenge any individual determination as an abuse of agency discretion. While MPCA may be able to use this language to impose conditions on smaller operations, the agency would likely find it very difficult to impose broadly discretionary requirements using such general duty language on large industrial and municipal air dischargers having significant environmental and legal staff resources.

Moreover, the language restricting MPCA from regulating federally unregulated emission units will leave significant numbers of industrial processes without any control or evaluation at all.

3.6 General Duties and Enforcement Provisions Governing Grounds for Denial of Permits for Circumstances Indirectly Addressing Toxic Air Pollution

Two provisions of Minnesota's rules giving the grounds for denial of an air discharge permit will be of interest to citizens trying to address toxic air pollution. The first requirement is a general duty criteria governing decisions on denial of air discharge permits. MPCA may deny an application for an air discharge permit if (in part):

> "The permitted facility or activity would endanger human health or the environment and the danger cannot be removed by an amendment to the permit."[149]

No further detail is available on how this determination may be made by MPCA.

Another useful criteria for denying a permit involves whether permits can be issued to existing air discharge violators. Air emission sources that are in violation will frequently discharge significant amounts of pollution, including toxic and hazardous air pollutants, that were never envisioned when such facilities were permitted and constructed. Minnesota's rules contain an important ability to deny an application for a permit (such as a facility might need for a desired expansion) when the facility has existing unresolved violations. A permit may be denied if:

> "There exists at the stationary source to be permitted unresolved noncompliance with applicable state of federal pollution control statutes or rules administered by the agency, or conditions of a previous or existing air emission permit, and the

[149] Minn Rule §7007.1000(2)(D)

applicant will not undertake a schedule of compliance to resolve the non-compliance."[150]

This provision gives MPCA (and potentially citizens) an extremely important tool to compel facilities to "clean up their act" when they are violating environmental requirements. The Federal Clean Air Act has a less expansive provision, only affecting permits in geographic areas in violation of national ambient air quality standards. The Minnesota provision's language opens up the possibility that issuance of an air discharge permit wanted by a facility could be denied on the basis of unresolved compliance problems throughout all environmental media programs.

3.7 Minnesota Does Not Clearly Guarantee that Emission Information Shall Not be Held Confidential

Neither Minnesota statutes, nor MPCA rules provide an unambiguous ban on withholding toxic air pollution emissions data as confidential.

"Any records or other information obtained by the pollution control agency or furnished to the agency by the owner or operator of one of more air contaminant or water or land pollution sources which are certified by said owner or operator, and said certification, as it applies to water pollution sources, is approve in writing by the commissioner, to relate to (a) sales figures, (b) processes or methods of production unique to the owner or operator, or (c) information which would tend to affect adversely the competitive position of said owner or operator, shall be only for the confidential use of the agency in discharging its statutory obligations, unless otherwise specifically authorized by said owner or operator.

.....Notwithstanding the foregoing, the agency <u>may</u> disclose any information, whether or not otherwise considered confidential which is it obligated to disclose in order to comply with federal law and regulations, to the extent and for the purpose of such federally required disclosure."[151] (emphasis supplied)

The MPCA's general rules go on to provide:

" Certification. In order to certify records, information, or objects for the confidential use of the agency, an owner, operator, or other person qualified by law, shall submit to the commissioner a written statement setting forth those statutory grounds that require the agency to keep the records, information, or

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[150] Minn Rule §7007.1000(2)(B)

[151] Minn Statutes §116075(2)

objects confidential. Any certification of records or information that applies to water pollution sources must be approved by the commissioner. These records and information shall not be released unless the commissioner denies the certification request. Whenever the commissioner denies a certification request, the commissioner shall notify the certifier of the denial at least three working days prior to making the records or information available to the public. The certifier may withdraw the records or information if such an option is available."[152]

And further, the rule provides:

" Federal law. Regardless of whether records or information are certified confidential, the agency may disclose any information which it is obligated to disclose in order to comply with federal law and regulation, to the extent and for the purposes of such federally required disclosure. Whenever the agency is required to release certified information pursuant to federal law, the commissioner shall notify the certifier of this requirement at least three working days prior to making the records or information available to the public. The certifier may withdraw this information if such an option is available."[153] (emphasis supplied)

Finally, the air rules provide:

"A person may request the agency to treat information submitted under parts 7007.0100 to 7007.1850 as confidential by following the procedures established by part 7000.1300. Where the agency is required to submit information to the EPA, the confidentiality of that information will be governed by Code of Federal Regulations, title 40, part 2, as amended."[154]

Under this statutory and regulatory scheme, an emitter of toxic air contaminants may stamp any information at all as confidential, including emission data concerning toxic air pollution. There is no prohibition against marking emissions data as confidential. For such air data, this confidentiality designation need not be certified by the MPCA Commissioner. If a request is made for such emission data that is marked confidential, the MPCA has discretion whether or not to release it based on a decision of whether the federal disclosure rule applies or not.

The failure to ban confidentiality designations on emissions data and the present Minnesota statutory and regulatory language opens the way for regulated polluters to argue that emissions data should not be released if such information involves federally

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[152] Minn Rules §7000.1300(1)

[153] Minn Rules §7000.1300(6)

[154] Minn Rules §7007.0550

unregulated toxic air pollutants. The discretionary language of some of the sections cited above opens the way for MPCA to deny disclosure to the public even if the data appears to be required for disclosure by a federal regulation.

3.8 Minnesota Ambient Air Quality Standards that Go Beyond Current National Ambient Air Quality Standards

Minnesota has accepted into state rules most of the current National Ambient Air Quality Standards. However, the state has gone further and adopted some additional state ambient air quality standards that must be protected under Minnesota rules.

Minnesota has adopted an ambient air quality standard for hydrogen sulfide[155] that will be of interest to citizens around concentrated animal feeding facility waste systems, petroleum refineries, oil and gas operations, municipal wastewater treatment plants and kraft pulping mills. Minnesota's hydrogen sulfide standards are shown in the table below:

Hydrogen Sulfide Ambient Concentration	Averaging Time and Exposure Scenario
0.05 ppmv (70.0 micrograms per cubic meter	½ hour averaging time, not to be exceeded over 2 times per year
0.03 ppmv (42.0 micrograms per cubic meter)	½ hour average not to be exceeded over 2 times in any 5 consecutive days

Also of interest at the pulp mills, power plants, refineries and other facilities that release sulfur dioxide is Minnesota's one hour health-related sulfur dioxide ambient standard. No such standard exists at the federal level. The one hour standard is 1300 micrograms per cubic meter (0.5 ppmv), not to be exceeded more than once per year. Also of interest is Minnesota's 3 hour secondary (welfare-related) sulfur dioxide standard of 915 micrograms per cubic meter (0.35 ppmv), which is also more stringent than current National Ambient Air Quality Standards.

Although, EPA's proposed new standards for ozone and 2.5 micron particulate matter haven't gone into effect because of court challenges, Minnesota has already adopted these same standards as Minnesota health-related ambient air quality standards.

[155] Minn Rules §7009.0080

3.9 Minnesota's Air Quality Regulations on Waste Incinerators

3.9.1 Categories of Incinerators under Minnesota's Air Rules

To understand how waste incinerators are regulated in Minnesota, one must first understand Minnesota's system of categorizing waste incinerators that is contained in the air rules.[156] This classification system is shown in the following table:

Designator	Heat Input Rate	Waste Combusted	Date-Related Information
Class A	Design capacity is equal to or greater than 93.75 million BTU/Hr for a single waste combustor unit	Primarily mixed municipal waste or refuse derived fuel	Construction commenced on or before 9/20/1994
Class C	Total design capacity for all waste combustor units at a stationary source is 15 million BTU/Hr or more, but less than 93.75 million BTU/Hr	Primarily mixed municipal waste or refuse derived fuel	Construction commenced on or before 9/20/1994
Class D	Design capacity of a single waste combustor unit is 3 million BTU/Hr or more	Other than mixed municipal solid waste or RDF	Was operating on or before 12/20/1989
Class I	Design capacity is equal to or greater than 93.75 million BTU/Hr for a single waste combustor unit	No waste specification other than from definition of "waste combustor"	Construction of the unit commenced after 9/20/1994, or modification or reconstruction commenced after 6/19/1996
Class II	Design capacity is equal to or greater than 15 million BTU/Hr, but less than 93.75 million BTU/hr, for a single waste combustor unit	No waste specification other than from definition of "waste combustor"	Construction of the unit commenced after 9/20/1994, or modification or reconstruction commenced after 6/19/1996

[156] See Minn Rules §7011.1201(9) through (16)

Class III	Design capacity is 3 million BTU/hr or more, but less than 15 million BTU/hr for a single waste combustor unit	No waste specification other than from definition of "waste combustor"	Construction permit issuance was after 12/20/1989
Class IV	Design capacity is less than 3 million BTU/hr for a single waste combustor unit	No waste specification other than from definition of "waste combustor"	No specification

Additional special sub-categorization of waste combustors is shown in the table below:

Type of Waste Combustor	**Waste Determination**	**Special Requirements and Exemptions (if any)**
Co-fired Combustor	30% or less of fuel used by weight is either mixed municipal solid waste and/or RDF and the remaining fuel is not mixed MSW or RDF	Exempted from all waste combustor rules and regulated as traditional fuel combustion facility
Waste Tire Burner	Combusts a single waste consisting of tires or tire-derived fuels, no percentage specified	Exempted from all waste combustor rules
Onsite waste oil burner	Only burns oil or oil contaminated items generated onsite	Exempted from all waste combustor rules
Crematoria, pathological waste and animal carcass combustors	Must be used solely for purposes stated	Exempted from all waste combustor rules, but subject to Rule 7011.1215 requirements on 20% visible emissions, afterburner control, with 1200 degrees/0.3 second residence time and ash management requirement
Metals Recovery Incinerator	A furnace or incinerator used primarily to recover precious and nonprecious metals by burning the combustible fraction from waste.	Must comply with waste combustor emission standards
Class D waste combustor (special exemption)	Burning more than 30% RDF by weight on 1/1/1991	See regulations for direct fired heating units fired by solid waste

3.9.2 Mercury Waste Content Reduction Plans for Minnesota Waste Combustors

On the basis of statutory requirements discussed in a prior major section, Minnesota enacted specific rule requirements intended to get mercury-containing wastes out of waste streams intended for waste combustors. For applicants seeking air permits for Class C, D, III, and IV waste combustors (see subsequent section on class definitions), the applicant must submit a plan to separate solid wastes which contain mercury.[157]

Under the rules, this mercury separation plan must include collection of household batteries, electrical devices and switches, electric lighting components, and solid waste from laboratories where mercury is used. The plan must include elements to identify, separate and collect other significant sources of mercury. The plan must indicate the responsible party for these plan elements, estimate the number of pounds per year of mercury that is removed from the solid waste stream and a description of the methods to be used to generate public awareness of the mercury separation plan and to generate public participation and cooperation. The plan must be revised periodically.[158]

3.9.3 Rule Requirements for Permit Conditions for Waste Combustors

Minnesota's air permitting rules contain special requirements for the content of waste combustor air permits.

When amending, modifying or reissuing a waste combustor air emission permit, MPCA's discretion to restricted when it comes to backsliding on the mercury emissions limitations contained in such permits. MPCA must continue the effectiveness of such mercury emission limitations unless the applicant can demonstrate that no good cause exists for continuing such an emission limitation.[159]

For mixed municipal solid waste or refuse-derived fuel waste combustors, the rules provide specific requirements for the content of permits. The permit must prohibit construction of such waste combustors unless the permittee has an ash management method approved by MPCA. The permit must prohibit operation of the unit until the facilities involved are available to receive ash. The permit must require the measurement of the non-combustible fraction of solid waste, provide a schedule for the testing of waste combustor ash for toxic contents and require implementation of an industrial waste management plan. For Class C, D, III and IV waste combustors, mercury separation

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[157] See Minn Rules §7007.0501(5)

[158] See Minn Rules §7011.1255

[159] See Minn Rules §7007.0801(1)

plans must be required in permit conditions. Finally, the permit must have operating conditions addressing stack emission testing schedules that are related to the proportion between actual mercury emissions and the permissible emission limitation.[160]

Some of the same requirements are also applicable to non-mixed municipal solid waste combustors.[161]

3.9.4 Comparing Minnesota's Large Waste Combustor Emission Limitations to Current Large Federal MSW Incinerator Requirements

A review was conducted to compare Minnesota's waste combustor rule emission limits to existing federal rules covering the same or similar source categories. Unfortunately, the rules are not directly comparable because of differences in applicability determination techniques. For example, the federal applicability requirements for a large MSW unit is 225 megagrams of design waste combustion capacity per day, where as Minnesota's Class A and I units are based on the heat input rate in millions of BTU per hour. Because of differences in the heat content between ordinary mass burned municipal solid waste vs. refuse derived fuel, it is possible that certain Minnesota units could fall in different source categories than under the federal rules.

For older existing large units, there are some differences in emission requirements between federal[162] and state rules.[163] Minnesota imposes additional requirements to measure condensible particulate matter (known as "back half" PM measurements) that are not required under the federal rules. Minnesota's limit for chlorinated dibenzo dioxin/furan emissions from large units controlled by electrostatic precipitators is one half of the current federal limit Minnesota's lead limit is about 10% more stringent than the federal limit. Minnesota imposes some long term averaging requirements for mercury control in stack emission gases that are not required by the federal rule and that can be significantly more stringent.

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[160] See Minn Rule §7007.0801(2)

[161] See Minn Rule §7007.0801(3)

[162] U.S. EPA 40 CFR part 60, subpart Cb, Emission guidelines for existing municipal waste combustors

[163] See Minn Rules §7011.1225(1)(A) and §7011.1227, Table 1 values for Class A waste combustors

For newer, large units, Minnesota[164] and federal emission limitations are identical except for mercury. Minnesota imposes mercury emission limitations which can be over twice as stringent as those contained in the existing federal rule, depending on the type of technology used for a large Minnesota waste combustor.

One crucial performance monitoring parameter in the Minnesota rules covering the temperature of the flue gas at the inlet to the air pollution control device is less stringent than current federal requirements. Control of flue gas temperatures in this location is crucial to effective control of chlorinated dibenzo dioxin/furan emissions.

3.9.5 Minnesota's Ban on the Smallest (Class IV) Waste Combustion Units

Because of ongoing problems, high emissions and frequent complaints with small waste combustion units for solid waste, Minnesota rules now ban operation of most Class IV waste combustors.[165] These uncontrolled incinerators would otherwise be typically operated at retailers and commercial operations, schools, hospitals, nursing homes, small industry, etc.

The rules exempt from the Class IV ban waste combustors located at a hospital, crematorium, pathological waste incinerators, waste combustors used solely for the disposal of animal carcasses and metal recovery incinerators.

3.9.6 Waste Combustors Requiring Special Approval

All waste combustors in Minnesota are prohibited from burning yard waste or tires unless they have an air emission permit that explicitly allows such practices.[166]

3.9.7 Evaluating Minnesota's Emission Limitations for Waste Combustors that are Not Large Units

At the present time, there are no final federal rules for waste combustors covering municipal solid waste combustors that would be analogous to Minnesota Class C, D, II, III and IV waste incinerators. As a result, Minnesota's emission limitations covering these units can be said to be "more stringent" that current non-existent federal requirements.

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[164] See Minn Rules §7011.1230 and §7011.1290

[165] See Minn Rules §7011.120(1)

[166] See Minn Rules §7011.1220(2)

However, Minnesota's emission limitations for some of these smaller combustors are lenient and allow high emissions from these smaller units. EPA has recently publicized proposed rules[167] for municipal solid waste units roughly equivalent in size to Minnesota's Class C and Class II waste combustors. Minnesota Class C chlorinated dibenzo-dioxin/furan emission limits are 3 to 16 times higher than these proposed requirements.

Permissive requirements for Minnesota's Class C waste combustors (older, smaller, existing units) allow uncontrolled acid gases and permissible chlorinated dibenzo dioxin stack gas concentrations are over 16 times higher than what would be required for a large unit. For Class C wastes combustors without wet or dry scrubbers in place, virtually uncontrolled mercury emissions are permitted with no requirement for a percentage reduction in emissions. Permissible mercury stack gas emission concentrations for Class C combustors are over ten times higher than what would be permitted from an older large waste combustor. The rules provide no lead or cadmium emission limitations for Class C waste combustors.[168]

Minnesota emission limitations for Class II waste combustors (newer, smaller units installed since 1994) are fairly close requirements for the new large units (Class 1), except that the rules provide no lead, cadmium and nitrogen oxide emission limitations for these units. The rules do, however, provide for the choice of an 85% mercury removal efficiency or a relatively tight absolute limit on stack gas concentrations of mercury.[169]

Class III waste combustors (still smaller, modern units) have fewer and less stringent requirements than Class I or II waste combustors. Class III emission limits for total chlorinated dibenzo-dioxin/furan stack gas concentrations are twice as high as those provided for Class I and II units. The Class III requirements do not provide emission limitations for nitrogen oxides, acid gases, lead and cadmium. Although there is an option 85% mercury removal efficiency requirement, a source may opt out of such a requirement by complying with a relatively high absolute limit on mercury stack gas concentrations.[170]

Class D waste combustors (older units that burn solid wastes other than municipal solid waste and RDF) have relatively lenient requirements. Permissible particulate emissions are higher than other units, permissible chlorinate dibenzo dioxin/furan stack

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[167] EPA Proposed Rules, 40 CFR part 60, subpart AAAA and BBBB

[168] See Minn Rules §7011.1225(1)(A) and §7011.1227, Table 1

[169] See Minn Rules §7011.1229, Table 2

[170] See Minn Rules §7011.1231, Table 3

gas concentration limits are nearly 7 times higher than what would be permissible for large units and visible emissions are twice as high as for other combustion units. The Class D rules provide no emission limits for mercury, lead, cadmium, nitrogen oxides, and acid gases.[171]

Minnesota's rules for Class IV hospital and metal recovery waste combustors are completely out of date. The only pollutants regulated are total particulate matter, visible emissions and carbon monoxide. No toxic pollutants or acid gases are regulated.[172] However, Minnesota does impose stack height requirements to ensure that all Class IV waste combustors that are still permitted to operate have stack heights equivalent to "good engineering practice" to avoid aerodynamic plume downwash from these combustion units.[173] In addition, the rules also provide requirements on minimum combustion temperature requirements, use of auxiliary fuels and mercury and ash plans.[174] Metal recovery incinerators are known sources of high acid gas, lead and chlorinated dibenzo-dioxin/furan emissions from operations such as burning vinyl plastic wire insulation off of waste wire and cable.

4. Minnesota's Unpromulgated, Non-Rule Toxic Air Pollution Policy, the "Air Toxics Review Guide – March 2000"

In March, 2000, the Environmental Outcomes Division of MPCA published the latest version of the "Air Toxics Review Guide."[175] This unpromulgated policy document does not have any binding effect, unlike Minnesota statutes or administrative rules:

> "The guide is not intended to and does not affect the rights and procedures that are available to all interested persons and permit applicants regarding a proposed permit."[176]

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[171] See Minn Rules §7011.1231, Table 3

[172] See Minn Rules §7011.1233, Table 4

[173] See Minn Rules §7011.1235(1)

[174] See Minn Rules §7011.1240(2), (2a) & (3)

[175] The MPCA Air Toxics Review Guide is available for download at: http://www.pca.state.mn.us/air/atguide.html

[176] MPCA Air Toxic Review Guide, March, 2000, Page 1

> "Where the guide describes certain mandatory components of an ATR, it is because they are essential to performing a reliable ATR. Because it is a guideline, however, permit applicants can modify the methodology where appropriate, in consultation with MPCA staff."[177]

However, MPCA does indicate that an Air Toxic Review may require that a project proposer conduct an ATR in the following circumstances (although administrative rule authority is not indicated or provided to support these conditions):[178]

a) An EAW/EIS is required

b) Substantive comments are received during the public notice of an air quality permit that might be resolved through an ATR.

c) An air emission source is applying for a permit with pre-authorized flexibility to change processes to emit significant amounts of a variety of air toxics (a "flexible permit")

d) Required through an air emissions permit.

e) At the MPCA's discretion; an air emission source is the cause of a significant number of complaints, or is suspected of being an emitter of toxic substances that potentially represent a significant public health or environmental risk.

Only the latter condition appears to address sources that may not have a permit or are not otherwise going through permitting for a new and/or modified source. In general, the policy does not pro-actively address elevated risk from emission sources that are not permitted at the present time under MPCA rules.

The Air Toxic Review Guide does not address minimum requirements for control technology for toxic air pollutants. As such, the Guide does not require application of best available technology to control toxic air contaminants for new and/or modified sources as these requirements are applied in other Great Lakes states like Michigan, Ohio and for certain pollutant emission categories in Wisconsin.

However, the Guide does contain a statement indicating that if potentially unacceptable risks are demonstrated during an air toxics review...:

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[177] Ibid, Guide, Page 1

[178] Ibid, Guide, Page 1

> "....risk managers and permit writers, in consultation with the project proposer, may require risk-based process, facility or air pollution control equipment modifications or requirements, and/or include operating conditions in the permit that limit emissions such that risks fall below regulatory levels of concern."
>
> "If the risk assessment, or subsequent iterations, indicate potentially unacceptable inhalation risks that cannot be resolved through permitting or further assessment, the MPCA will consider denying the permit."[179]

Although this may seem a strong policy on the surface, sources may in fact comply with the ATR screening mechanisms through dilution techniques (i.e. tall stacks and long distances to fencelines) rather than through required emission controls.

MPCA's ATR review process focuses exclusively on controlling ambient-related inhalation risks. The policy does not address non-inhalation, multi-pathway exposure risks, ecological risk and other forms of detrimental toxic air pollution impacts.

The guide describes a multiple step process for conducting a minimally acceptable toxic air pollution review.

First, the emitting facility must be characterized as to its emissions sources, quantification of emissions and chemical air pollutants of potential concern. The particular chemical emissions of concern are selected from a master list created from Minnesota's draft Health Risk Values (see subsequent section on HRVs), Clean Air Act hazardous air pollutants, Toxic Release Inventory pollutants, EPA's Integrated Risk Information System chemical list, EPA's Health Effects Assessment Summary table and the California EPA Office of Environmental Health Hazard Assessment list.

Next, "defensible" emission rates must be developed for all potential chemical pollutants of concern for both maximum hourly and annual average emissions, all based on the potential to emit for the source. Chemical pollutants of concern must be matched with toxicity values based on toxic endpoints for both carcinogens and non-carcinogens.

Air dispersion modeling is used to make predictions of the ambient pollutant concentrations for the chemicals of concern based on emission rate information. An exposure assessment can then be done for two types of receptors: the maximum off-property receptor and the maximum residential receptor. The predicted ambient impacts for chemical pollutants can then be compared with target screening values to determine if an excessive risk may exist for a particular chemical exposure.

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[179] Ibid, Guide, Page 11

For chemical carcinogens, both MPCA and the Minnesota Department of Public Health consider an excess lifetime cancer risk from carcinogenic exposure of less than or equal to 1 in 100,000 to be considered "negligible" and below regulatory concern. Since the policy requires "rounding" of risk numbers to one significant digit, in practice, this would allow risks up to 1.4 in 100,000 to be considered acceptable.

For non-carcinogens, the policy assumes that there is a threshold below which an exposure will not cause adverse health effects. If the predicted ambient exposure is less than the toxicity value, the risk from exposure to a non-carcinogen will be acceptable.

Risks from exposure to multiple chemicals of concerns are additive, although the policy considers and evaluates carcinogens and non-carcinogens separately. For example, all carcinogenic risks are considered additive from different chemical carcinogens when determining acceptable risks. For non-carcinogens, a hazard index is developed from exposure to multiple agents by adding the results of respective ratios between a predicted chemical exposure and its respective toxicity value. If the resulting hazard index is less than one, the risk is considered negligible.

The additive exposure aspect of the MPCA policy is important since its effect is to increase the importance of multiple exposures to several chemicals in decisionmaking about acceptable risks in the circumstance when exposure to any single chemical might not otherwise cause a regulatory concern or trigger a health-based limit.

Under the policy of the Guide, there is no requirement that all emission sources, both existing, background and proposed new/modified, all be considered. For example, the air dispersion modeling section does not require consideration of background ambient concentrations of pollutants or consideration of other adjacent emission sources in modeling demonstrations.

There are indications that Air Toxic Reviews under MPCA guidelines are only applied to a small number of facilities. According to a 1999 MPCA document, only about 12 facilities out of all those then under permit review were subjected to an Air Toxics Review process, which MPCA characterized as "...a small portion of the total number of facilities receiving air permits."[180]

[180] MPCA Toxic Air Pollutant Update, Report to the Environment & Natural Resources Policy Committee of the Minnesota Legislature, Fardin Oliaei, Ph.D., Author and Editor, February, 1999, Page 15, Section 2.1.2

5. Minnesota's Proceeding to Adopt Health Risk Values

In July, 1994, the Minnesota Pollution Control Agency and the Minnesota Department of Health signed a Memorandum of Agreement between the two agencies concerning the development of Minnesota's Health Risk Values (HRVs). HRVs are a screening tool for determining acceptable ambient impacts of toxic air pollutants that are used during decisionmaking on air discharge permitting. Most of the HRVs are based on inhalation exposure, although a few have been developed for oral exposure from air deposition.

Under the Memorandum, the job of developing and publishing HRVs was assigned to the Minnesota Department of Health (MDH). Subsequently, MDH established a workgroup on health risk values to function as a technical advisory group. This group has had considerable involvement and input from industry representatives, but less involvement and interest from environmental groups.

The workgroup and MDH were charged with developing a list of HRVs to be potentially used in risk management decisions by MPCA. At this writing, MDA and the workgroup still have not published a final proposal to enact HRVs into Minnesota Administrative rules, although it was apparently the intent of MDH to do so sometime in the summer of 2000.[181]

In 1996, the workgroup made perhaps its most significant and potentially troubling decision. The workgroup, with support from MDH and MPCA, established a cancer incidence risk level of one in 100,000 as its fundamental benchmark of what would be considered as the threshold for acceptable risk from exposure to airborne carcinogens.. Apparently, MDH had previously made a similar decision with screening values based on 1 in 100,000 risk for groundwater exposures. It then concluded that this would be an acceptable risk level for exposures to airborne carcinogens. Here is how MDH explained the decision:

> "Theoretically, this lifetime risk level means that if 100,000 persons are exposed daily for 70 years to a particular concentration or dosage of a chemical, no more than one additional person would be expected to develop cancer as a result of that exposure. This is in addition to those already expected to develop a cancer. MDH has determined that a 1 in 100,000 lifetime risk level is reasonable for balancing the potential benefits gained from chemicals (e.g. gasoline for cars) and

[181] Personal conversation with Kathy Norlien, MDH,

> the potential adverse health effects. This level corresponds to the risk of death from a natural disaster, and falls within US EPA guidelines."[182]

MPCA did not provide a reference for its claim that US EPA has supported a 1 in 100,000 risk level for toxic air pollutants. However, the Clean Air Act provides that EPA shall ultimately develop additional emission standards for hazardous pollutants under the Act in order to get predicted cancer risks below 1 in 1 million.[183] A neighboring Great Lakes state, Michigan, bases its primary "initial risk screening levels" on 1 in one million risk for airborne carcinogens. MPCA and MDH would thus allow 10 times the cancer risk from airborne exposures solely from a new and/or modified air pollution sources as would be allowed in Michigan. MDH's own research shows that most states that do set a target risk level for exposure to airborne carcinogens set their level based on a target risk of 1 in one million.[184]

Minnesota's HRVs for non-carcinogens are generally based on toxicology results indicating No Observable Adverse Effects Levels (NOAELs) or Lowest Observable Adverse Effects Levels (LOAELs). These are applied with adjustment factors to normalize the laboratory test condition exposure durations to human exposure durations, to adjust for species difference and adsorption factors and to set safety factors for sensitive individuals or for the problem of incomplete data.

MDH does not indicate a specific approach to derive an HRV in the event that a NOAEL and LOAEL is not available for a chemical compound.

A complete set of HRV work group newsletters and working draft briefing papers, as well as an April 2000 working draft version of draft HRVs is available from MDH.

The tables below compares selected Minnesota's April, 2000 working draft HRVs with analogous risk screening values from Michigan and Texas. The first table is for selected airborne carcinogens and the second table is for non-carcinogens. All values are in micrograms per cubic meter (ug/M3).

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[182] Newsletter on Health Risk Values for Air Pollutants, Update #5, Risk Assessment methods, Assumptions Scrutinized, October 1996, Page 2

[183] See 42 USC §7412(f)(2)(A)

[184] MDH Health Risk Values Briefing Paper #5, Carcinogen Lifetime Risk Level, August, 1996, page 2

Pollutant	Minnesota Draft HRVs (ug/M^3)	Texas Screening Levels (ug/M^3)	Michigan Initial Risk Screening Level (ug/M^3)
dichloromethane	20	26	2
coke oven emissions	0.02	0.15	0.0016
formaldehyde	0.8	1.5	0.08
arsenic	0.002	0.01	0.0002
benzene	1.3 to 4.5	3	0.1
cadmium	0.006	0.01	0.0006
chromium VI	0.0008	0.01	0.000083
2,3,7,8 TCDD	no inhalation HRV	0.00000008	0.000000023
propylene oxide	3	21	0.3
1,4 dioxane	not a MN carcinogen, no HRV	90	0.18
benzo(a)pyrene	not a MN carcinogen, no HRV	0.003	0.0005

Many other substances that are carcinogens in Michigan and Texas are not listed as such by the Minnesota April 2000 draft HRV list and have no HRV listed.

The following table shows comparison information for selected Minnesota non-carcinogens. Again, all values are in micrograms per cubic meter. Minnesota HRV and Texas values are presumed to be 1 hour exposure values. If Michigan values differ from 1 hour, it will be indicated in the table.

Pollutant	**Minnesota HRV for non-carcinogens (one hour averages, unless stated) (ug/M^3)**	**Texas Screening Level (one hour averages) (ug/M^3)**	**Michigan Initial Threshold Screening Level (ug/M^3)**
tetrachloroethylene	20,000	340	1.7 – annual average, regulated as carcinogen
n-hexane	2000 – long term	1760	200 – 24 hr average
hydrogen cyanide	300 – 1 hr, 3 – long term	50	50
hydrogen sulfide	80 (ambient air quality standards also exist); 10 – 24 hr average	Listed in sep. regulation	1 - 24 hr average
methanol	25,000	2,620	3,250
methyl ethyl ketone	10,000	3,900	1,000 – 24 hr average
toluene	37,000	1,880	400 – 24 hr average
styrene	21,000	110	1,000 – 24 hr average but also regulated as carcinogen, 1.7 – annual average
xylene	22,000	3,700	4,400
trichloroethylene	2,000	1,350	0.6 – annual average, regulated as carcinogen
vinyl chloride	180,000	130, regulated as carcinogen, 13 – annual average	0.4 – annual average, regulated as carcinogen

As can be seen from the above based on a random selection of selected common toxic air pollutants, Minnesota current HRV proposal frequently allows dramatically larger inhalation toxic exposures than would be permitted in stringent regulation state like Michigan or even a lax regulation state like Texas.