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STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



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TO: Interested Parties

FROM: Andrew W. Hogarth, Remediation and Redevelopment Division

SUBJECT: RRD Operational Memorandum No. 1
Part 201 Cleanup Criteria
Part 213 Risk-based Screening Levels

The Remediation and Redevelopment Division (RRD) of the Michigan Department of Environmental Quality (MDEQ) is issuing the attached RRD Operational Memorandum No. 1. This Operational Memorandum provides general information about the criteria tables and the criteria for Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and Part 213, Leaking Underground Storage Tanks, of the NREPA. The MDEQ has developed interim cleanup criteria developed for acetate, dicamba, methane, metribuzin, and sodium azide, and is allowing a 45 day public comment period on these criteria. The following information is intended to assist in understanding the process followed for criteria changes within this Operational Memorandum. The criteria tables of this Operational Memorandum (Attachment 1) have been revised in accordance with rule provisions that allow criteria to be added and revised in the following categories:

Changes in the Target Detection Limits

Criteria with the footnote (M) promulgated with the Part 201 Administrative Rules represent situations where the calculated risk-based criterion was below the designated analytical target detection limit. In accordance with provisions of R 299.5103(I) "target detection limits" (TDL) is defined as the detection limit for a hazardous substance in a given environmental medium that is specified by the MDEQ on a list that it publishes not more than once a year. The TDL for a given hazardous substance is greater than or equal to the method detection limit for that hazardous substance. In establishing a TDL, the department must consider:

- The low level capabilities of methods published by governmental agencies
- Reported method detection limits published by state laboratories.
- Reported method detection limits published by commercial laboratories
- The need to be able to measure a hazardous substance at concentrations at or below cleanup criteria.

The TDLs previously designated by the MDEQ in Operational Memoranda were reviewed considering these factors, and proposed revisions were provided to the Michigan Environmental Laboratory Association for comment. Revised TDLs were included in the TDLs published with RRD Operational Memorandum No. 2. The effective date of the revised TDLs has been extended to February 1, 2005, to allow adequate implementation time for laboratories and monitoring plans. The criteria tables reflect the revised TDLs as indicated in Attachment 2 of this Operational Memorandum. Criteria revisions based on revised TDLs will also become effective February 1, 2005.

Changes in Drinking Water Criteria

If a new state drinking water standard is established or a state drinking water standard is changed the drinking water standard developed under the Michigan Safe Drinking Water Act, Section 5 of 1976 PA 399, becomes the generic residential cleanup criterion (R 299.5706a(12), R 299.5744, Section 20120a(5) and 21304a(4) of the NREPA). The criteria tables reflect changes in the state drinking water standards as indicated in Attachment 2 of this Operational Memorandum. These criteria are effective immediately.

Changes in Criteria Previously Designated as “ID” or “NA”

Criteria promulgated with the Part 201 Administrative Rules that were designated with a footnote “ID” or “NA”, represent situations where insufficient data was available to calculate risk-based criterion. In accordance with provisions of R 299.5706a(11) if the MDEQ obtains sufficient information to support the calculation of a cleanup criterion the MDEQ must use best available information to calculate a criterion for the hazardous substance. The MDEQ has calculated water quality standards pursuant to R 323.1057 of Part 31 of the NREPA for hazardous substances previously designated as “ID” or “NA”. These water quality standards become groundwater surface water interface (GSI) criteria pursuant to R 299.5716(6), and Section 20120(15) of the NREPA. The new GSI criteria are effective immediately. The soil criteria tables also include an interim Soil Volatilization to Indoor Air criterion for methane. This criterion was developed specifically to address acute physical hazards, specifically explosivity (R 299.5728(1)(d)). The MDEQ is allowing a 45 day public comment period on this methane criterion. A final criterion will be published following the comment period.

Hazardous Substances Not Previously Listed in the Criteria Tables

For a substance not previously listed in the cleanup criteria tables the MDEQ may determine that it is a hazardous substance and develop generic criteria using best available information about the toxicological and physical chemical properties of the substance (R 299.5706a(10)). There are four new hazardous substances for which interim criteria have been developed. They are: acetate; dicamba; metribuzin; and sodium azide. The MDEQ is allowing a 45 day public comment period on these criterion. Final criteria will be published following the comment period. A brief summary of the toxicological bases for the interim criteria follows.

Acetate: The drinking water criteria were derived using a chronic reference dose (RfD) of 5.7E-1 mg/kg-day (MDEQ/ERD, 1992). A no-observed-adverse-effect-level (NOAEL) of 1.0 g/kg/day was identified for calcium magnesium acetate in male and female rats dosed by gavage (Chevron Environmental Health Center, 1987). The GSI criterion is based on the water quality standard calculated pursuant to R 323.1057 as provided by R 299.5716(6).

Key reference: Chevron Environmental Health Center. 1987. Twenty-eight day oral toxicity study in rats with Ortho Ice-B-Gon Deicer. J.R. Cushman, Study Director. Richmond, CA.

Dicamba: A chronic RfD of 3.0E-2 mg/kg/day was obtained from the U.S. EPA Integrated Risk Information System (IRIS) file dated July, 1992. This reference dose serves as the basis for the criteria. See IRIS for details.

Metribuzin: The criteria are based on a chronic RfD of 2.5E-2 mg/kg/day from IRIS (January 1995). See IRIS for details.

Sodium azide: An RfD of 1.2E-2 mg/kg/day was derived July 2003 by RRD toxicologists. The key study is a two-year gavage study in rats. Low dose animals exhibited decreased body

weights and necrosis of the cerebrum. The RfD is based on lowest observed adverse effect level (LOAEL).

Key reference: National Toxicology Program. 1991. Toxicology and Carcinogenesis Studies of Sodium Azide. September 1991. NTP TR 389. U.S. Department of Health and Human Services.

Comments on the interim criteria for methane, acetate, dicamba, metribuzin, and sodium azide should be postmarked no later than January 24, 2005, and should be sent to the attention of Ms. Christine Flaga, Chief, Toxicology Unit, Remediation and Redevelopment Division, Michigan Department of Environmental Quality, P.O. Box 30426, Lansing, Michigan, 48909 (Mail Code: 76115).

Attachments





This memorandum is intended to provide guidance to foster consistent application of Part 201 and Part 213 of NREPA and the associated Administrative Rules. This document is not intended to convey any rights to any person nor itself create any duties or responsibilities under law. This document and matters addressed herein are subject to revision.