

Shredder Residue

Hazardous Waste/Solid Waste Program Management Decision

Shredder residue is the non-metallic waste material remaining after removal of metal scrap from shredded vehicles, household and commercial appliances, or other shredded items. Shredder residue is also known as shredder fluff, shredder flock, or automotive shredder residue (ASR). Shredder residue is regulated as a waste in Minnesota and must meet the Minnesota Pollution Control Agency's (MPCA) hazardous and solid waste requirements.

What must generators and importers of shredder residue do?

Generators and anyone who transports shredder residue into Minnesota residue must either assume it is a fully regulated hazardous waste or evaluate it to demonstrate that it is non-hazardous. Because shredder residue can be variable and non-homogenous, and is often generated in large volumes over a short time, the MPCA recognizes that properly evaluating it can be challenging. The 2006 Program Management Decision (PMD) contained in the following four pages of this fact sheet describes a method of evaluating shredder residue that the MPCA has determined is acceptable for use in Minnesota.

Use of the evaluation method in this PMD is optional, however any generator or importer of shredder residue using any other sampling or evaluation methods must independently demonstrate that those methods accurately and fully evaluate the waste. Find more information on waste evaluation in MPCA fact sheet #w-hw1-01, Evaluate Waste, at: <https://www.pca.state.mn.us/sites/default/files/w-hw1-01.pdf>.

Prohibited waste materials - tires

Waste tires are prohibited from landfill disposal in Minnesota. Generators and importers of shredder residue must ensure that shredder residue that they have evaluated as non-hazardous under the method in this PMD does not contain waste tires if they intend to dispose of the shredder residue in a Minnesota landfill.

Preparing vehicles for shredding

Salvage operators and other recyclers can reduce the potential for vehicles they will shred or ship off-site for shredding to result in shredder residue that fails the hazardous waste evaluation by identifying and removing hazardous components and materials from the vehicles. Find more information regarding proper vehicle dismantling and salvage in MPCA fact sheet #w-hw4-63, Vehicle Dismantling and Salvage, at: <https://www.pca.state.mn.us/sites/default/files/w-hw4-63.pdf>.

More information

Guidance and requirements in this fact sheet and PMD were derived from Minnesota Statutes, Chapter 115A; Minnesota Rules, Chapters 7035, 7045, and 9220; and the Code of Federal Regulations, Title 40, Part 761. Visit the Office of the Revisor of Statutes at <https://www.revisor.mn.gov/pubs> to review applicable Minnesota Statutes and Rules, and the U.S. Government Printing Office at <https://www.govinfo.gov/> to review applicable federal regulations.

For more information about this and other hazardous waste topics, contact the MPCA at the information below.



Minnesota Pollution Control Agency

PROGRAM MANAGEMENT DECISION MEMO

Issue: Establishing a Program Management Decision for a Standardized Level of Generator Knowledge for Evaluation of Shredder residue Under the Minnesota Hazardous Waste Regulations.

Effective Date: July 24, 2006

This Program Management Decision (PMD) was reissued on August 31, 2006, to correct typographical errors contained in the July 24, 2006, PMD.

Decision:

1. **Purpose.** This PMD establishes a standard level of knowledge for generators of shredder residue waste to evaluate that waste under Minn. R. 7045.0214, Subp. 2, Item B, Subi. (2), and to determine appropriate management of that waste.
2. **Scope.** This PMD applies to all generators of shredder residue waste. For the purposes of this PMD, shredder residue waste, also known as shredder fluff, shredder flock, and automotive shredder residue (ASR), has the meaning assigned in Minn. Stat. §115A.90, Subd. 6a.
3. **Sampling and Analysis.**
 - A. **Sampling Procedure.** The generator must sample shredder residue waste in accordance with the sampling requirements of the Code of Federal Regulations (CFR), Title 40, Part 761, Subpart R, located at 40 CFR 761.340 through 40 CFR 761.350.
 - B. The generator must analyze the collected waste samples:
 - (1) for polychlorinated biphenyls (PCBs) using the test methods described in the Code of Federal Regulations, Title 40, Part 761, Subpart R, located at 40 CFR 761.353 through 40 CFR 761.359; and
 - (2) for the following Toxicity Characteristic contaminants using the test methods described in the Code of Federal Regulations, Title 40, Part 261, Subpart C, located at 40 CFR 261.24, as amended, or equivalent methods approved by the Commissioner of the Minnesota Pollution Control Agency, hereinafter the Commissioner, under the procedures in Minn. R. 7045.0075, Subp. 1:
 - (a) Cadmium
 - (b) Chromium
 - (c) Lead
 - (d) Mercury
 - C. **Sampling Frequency.** All generators of shredder residue waste must sample the waste at an interval of 90 days (plus or minus 7 days), excepting that:

- (1) Generators subject to the increased sampling frequency of Part 5, Subp. B or C of this PMD must sample at the specified interval; and
 - (2) Generators who are seeking to use this PMD for the first time may sample at a minimum interval of at least 7 days. These generators may begin managing their shredder residue waste under this PMD after collecting five samples and calculating an initial rolling average as required under Part 4 of this PMD.
4. **Status of the Shredder Residue Waste.** Generators must calculate a rolling average concentration for each of the five subject contaminants. The rolling average concentration for each contaminant is calculated from the five most recent sample results (hereinafter referred to as the rolling average). The oldest sample result is dropped from the average as each new value is added. All samples required by this PMD must be used to determine the rolling average; no additional samples may be used to determine the rolling average.
5. **Management of the Shredder Residue Waste.**
- A. Shredder residue waste with a rolling average for each of the subject contaminants less than 80% of the maximum allowable concentration (MAC) listed in Minn. R. 7045.0131, Subp. 8 and Minn. R. 7045.0135, Subp. 5 may be disposed as an industrial solid waste at a landfill that meets or exceeds the liner requirement established in Minn. R. 7035.2815, and has the current version of this PMD incorporated into the Industrial Solid Waste Management Plan for the landfill.
 - B. If any individual sample for any of the subject contaminants exceeds 100% of the MAC listed in Minn. R. 7045.0131, Subp. 8 and Minn. R. 7045.0135, Subp. 5, another round of sampling must be conducted within 7 days.
 - C. Shredder residue waste with a rolling average for any of the subject contaminants that exceeds 80% of the MAC listed in Minn. R. 7045.0131, Subp. 8 and Minn. R. 7045.0135, Subp. 5 is not eligible for disposal in any solid waste landfill in Minnesota. Such shredder residue waste must be sampled at a sampling frequency of every 30 days rather than 90 days, as listed in Part 3, Subp. B of this PMD. This increased sampling requirement must be followed until the rolling average is less than 80% of the regulatory limit for three sampling events.
 - D. Shredder residue waste with a rolling average for any of the subject contaminants greater than or equal to 100% of the MAC listed in Minn. R. 7045.0131, Subp. 8 and Minn. R. 7045.0135, Subp. 5 is hazardous waste and subject to all the generator and management requirements referenced in Minn. R. 7045.0205, including the amended license application requirements of Minn. R. 7045.0243, Subp. 3, G.
 - E. If the concentration of a single sample increases the rolling average from below 80% of the MAC to greater than or equal to 100% of the MAC, the generator may no longer dispose as a material under this PMD. Before declaring that the entire waste stream is a hazardous waste, the MPCA will review information provided by the generator, including additional analysis of the same composite sample, to determine whether or not the value should be included in the rolling average. The result of this review will determine if the waste may remain regulated under this PMD.

This provision ensures that a non-representative value, known as a spike, will not necessarily disqualify a generator from operating under this PMD. In the development of this PMD, stakeholders indicated that very large values are possible even though no very large values were found in the MPCA evaluation of existing data. This provision is not intended to allow repeated spikes, but to clarify that assessment of the generator's process is permissible before final determination is made.

- F. A generator of hazardous waste shredder residue remains subject to all requirements referenced in Minn. R. 7045.0205 until:
- (1) the rolling average concentrations for all subject contaminants are less than the MACs listed in Minn. R. 7045.0131, Subp. 8 and Minn. R. 7045.0135, Subp. 5; and
 - (2) the generator has met the requirements of Minn. R. 7045.0243, Subp. 3, Item G; and
 - (3) the generator has documented under Minn. R. 7045.0217 that changes to its shredder residue-generating process reasonably preclude future generation of shredder residue hazardous waste.
- G. Shredder residue waste must not be shipped from the generator for use as daily cover material in any landfill in Minnesota unless the landfill owner/operator has first received approval from the Commissioner. Any request for approval will be reviewed by the Commissioner to ensure that:
- (1) the waste meets or exceeds the definition contained in Minn. R. 7035.0300, Subp. 23; and
 - (2) the requirements of the permit issued to the landfill by the Commissioner are being fully met; and
 - (3) the waste is not flammable and not litter-prone.
6. **Reporting and Recordkeeping.**
- A. The generator must immediately (within 24 hours) notify the landfill accepting the material, county solid waste or hazardous waste staff (as applicable), and the Commissioner if the rolling average exceeds 80% or 100% of the MAC, as described in Part 5, Subp. C and D of this PMD.
 - B. Generators of shredder residue waste shall retain on-site and available for inspection all sample results, rolling average calculations and associated documentation for three years from the sampling date.
 - C. Generators of shredder residue waste shall submit to the Commissioner copies of any information reasonably necessary to determine compliance with this PMD upon request.

- D. Prior to initial disposal in a Minnesota landfill, and every five years thereafter, shredder residue shall be tested for an extended list of contaminants, to be determined by the Commissioner.

- 7. **Compliance with this PMD.** Generators of shredder residue waste not in compliance with this PMD are subject to all applicable requirements of Minn. R. ch. 7035 and 7045.

APPROVAL

I have reviewed this management decision and I concur:

Signed: *Lisa J. Thorvig*
Date: 9-12-06
Lisa Thorvig
Director, Municipal Division

Signed: *James L. Warner*
Date: 9-12-06
James L. Warner, P.E.
Director, Industrial Division