

1 Minnesota Pollution Control Agency

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3 Adopted Rules Relating to Hazardous Waste, Dioxins and Aliphates

4

5 Rules as Adopted

6 7001.0560 GENERAL INFORMATION REQUIREMENTS FOR PART B OF
7 APPLICATION.

8 Part B of the application must contain the following
9 information:

10 A. to F. [Unchanged.]

11 G. A copy of the contingency plan required by part
12 7045.0466, including, if applicable, the specific information in
13 parts 7045.0528, subpart 9 and 7045.0532, subpart 6.

14 H. to U. [Unchanged.]

15 7001.0580 PART B INFORMATION REQUIREMENTS FOR STORAGE OR
16 TREATMENT TANKS.

17 Except as otherwise provided in part 7045.0528, subpart 1,
18 if the applicant proposes to use tanks to store or treat
19 hazardous waste, the applicant shall furnish the information
20 designated in items A and B in addition to the information
21 required by part 7001.0560:

22 A. [Unchanged.]

23 B. A description of the system to be used to contain
24 the tank and any spills or releases of hazardous waste from the
25 tank, demonstrating compliance with part 7045.0528, subpart 5,
26 and where applicable, subpart 9, including at a minimum the
27 following:

28 (1) to (3) [Unchanged.]

29 (4) provisions for preventing or managing run-on;

30 (5) the manner in which accumulated liquids can
31 be removed to prevent overflow and can be analyzed to determine
32 proper management of the removed liquids; and

33 (6) for tanks holding hazardous wastes F020,
34 F021, F022, F023, F026, F027, and F028 listed under part
35 7045.0135, subpart 2, a description of the system to detect

1 leaks and spills and how precipitation and run-on will be
2 prevented from entering the detection system.

3 7001.0590 PART B INFORMATION REQUIREMENTS FOR SURFACE
4 IMPOUNDMENTS.

5 Except as otherwise provided in part 7045.0532, subpart 1,
6 if the applicant proposes to store, treat, or dispose of
7 hazardous waste in surface impoundment facilities, the applicant
8 shall submit detailed plans and specifications accompanied by an
9 engineering report which collectively includes the following
10 information in addition to the information required by part
11 7001.0560:

12 A. to J. [Unchanged.]

13 K. A waste management plan for hazardous waste F028
14 and treatment residues and soil contaminated with hazardous
15 wastes F020, F021, F022, F023, F026, F027, and F028 listed under
16 part 7045.0135, subpart 2, describing how the surface
17 impoundment is or will be designed, constructed, operated, and
18 maintained to meet the requirements of part 7045.0532, subpart
19 10. This plan must address the following items as specified in
20 part 7045.0532, subpart 10:

21 (1) the volume, physical, and chemical
22 characteristics of the wastes, including their potential to
23 migrate through soil or to volatilize or escape into the
24 atmosphere;

25 (2) the attenuative properties of underlying and
26 surrounding soils or other materials;

27 (3) the mobilizing properties of other materials
28 codisposed with these wastes; and

29 (4) the effectiveness of additional treatment,
30 design, or monitoring techniques.

31 7001.0600 PART B INFORMATION REQUIREMENTS FOR WASTE PILES.

32 Except as otherwise provided by part 7045.0534, subpart 1,
33 if the applicant proposes to store or treat hazardous waste in
34 waste piles, the applicant shall furnish the information
35 required by items A to L in addition to the information required

1 by part 7001.0560:

2 A. to K. [Unchanged.]

3 L. A waste management plan for hazardous waste F028
4 and treatment residues and soils contaminated with hazardous
5 wastes F020, F021, F022, F023, F026, F027, and F028 listed under
6 part 7045.0135, subpart 2, describing how a waste pile that is
7 not enclosed is or will be designed, constructed, operated, and
8 maintained to meet the requirements of part 7045.0534, subpart
9 10. This submission must address the following items as
10 specified in part 7045.0534, subpart 10:

11 (1) the volume, physical, and chemical
12 characteristics of the wastes to be disposed in the waste pile,
13 including their potential to migrate through soil or to
14 volatilize or escape into the atmosphere;

15 (2) the attenuative properties of underlying and
16 surrounding soils or other materials;

17 (3) the mobilizing properties of other materials
18 codisposed with these wastes; and

19 (4) the effectiveness of additional treatment,
20 design, or monitoring techniques.

21 7001.0610 PART B INFORMATION REQUIREMENTS FOR LAND TREATMENT.

22 Except as otherwise provided by part 7045.0536, subpart 1,
23 if the applicant proposes to use land treatment to dispose of
24 hazardous waste, the applicant shall furnish the information
25 designated in items A to I in addition to the information
26 required by part 7001.0560:

27 A. to H. [Unchanged.]

28 I. A waste management plan for hazardous waste F028
29 and treatment residues and soils contaminated with hazardous
30 wastes F020, F021, F022, F023, F026, F027, and F028 listed under
31 part 7045.0135, subpart 2, describing how a land treatment
32 facility is or will be designed, constructed, operated, and
33 maintained to meet the requirements of part 7045.0536, subpart
34 11. This plan must address the following items as specified in
35 part 7045.0536, subpart 11:

36 (1) the volume, physical, and chemical

1 characteristics of the wastes, including their potential to
2 migrate through soil or to volatilize or escape into the
3 atmosphere;

4 (2) the attenuative properties of underlying and
5 surrounding soils or other materials;

6 (3) the mobilizing properties of other materials
7 codisposed with these wastes; and

8 (4) the effectiveness of additional treatment,
9 design, or monitoring techniques.

10 7001.0620 PART B INFORMATION REQUIREMENTS FOR LANDFILLS.

11 Except as otherwise provided by part 7045.0538, subpart 1,
12 if the applicant proposes to dispose of hazardous waste in a
13 landfill, the applicant shall furnish the information designated
14 in items A to J in addition to the information required by part
15 7001.0560:

16 A. to I. [Unchanged.]

17 J. A waste management plan for hazardous waste F028
18 and treatment residues and soils contaminated with hazardous
19 wastes F020, F021, F022, F023, F026, F027, and F028 listed under
20 part 7045.0135, subpart 2, describing how a landfill is or will
21 be designed, constructed, operated, and maintained to meet the
22 requirements of part 7045.0538, subpart 13. This plan must
23 address the following items as specified in part 7045.0538,
24 subpart 13:

25 (1) the volume, physical, and chemical
26 characteristics of the wastes, including their potential to
27 migrate through soil or to volatilize or escape into the
28 atmosphere;

29 (2) the attenuative properties of underlying and
30 surrounding soils or other materials;

31 (3) the mobilizing properties of other materials
32 codisposed with these wastes; and

33 (4) the effectiveness of additional treatment,
34 design, or monitoring techniques.

35 7045.0127 RESIDUES IN EMPTY CONTAINERS AND EMPTY INNER LINERS.

1 Subpart 1. [Unchanged.]

2 Subp. 2. Empty containers or inner liners; definition. A
3 container or an inner liner removed from a container that has
4 held any hazardous waste, except a waste that is a compressed
5 gas or that is identified as an acute hazardous waste in part
6 7045.0135, subpart 2, 3, or 4, item E, is empty if:

7 A. to D. [Unchanged.]

8 Subp. 3. Other empty containers or inner liners. A
9 container or inner liner that has held an acute hazardous waste
10 identified in part 7045.0135, subpart 2, 3, or 4, item E is
11 empty if:

12 A. to C. [Unchanged.]

13 Subp. 4. [Unchanged.]

14 7045.0135 LISTS OF HAZARDOUS WASTES.

15 Subpart 1. General. A waste is a hazardous waste if it is
16 listed under subparts 2 to 5 unless it has been excluded from
17 the list under part 7045.0075, subpart 2.

18 The basis for listing the classes or types of wastes listed
19 in subparts 2 to 5 is indicated by employing one or more of the
20 following hazard codes:

21 A. ignitable waste, (I);

22 B. corrosive waste, (C);

23 C. reactive waste, (R);

24 D. EP toxic waste, (E);

25 E. acute hazardous waste, (H); and

26 F. toxic waste, (T).

27 The constituent which caused the agency to list the waste
28 as an EP toxic waste (E) or toxic waste (T) in subparts 2 and 3
29 is identified in part 7045.0139.

30 Each listed hazardous waste is assigned a hazardous waste
31 number which precedes the name of the waste. This number must
32 be used in complying with the disclosure requirements of parts
33 7045.0205 to 7045.0304 and certain record keeping and reporting
34 requirements under parts 7045.0205 to 7045.1030 and the agency's
35 permitting procedures in chapter 7001.

36 The following hazardous wastes listed in subparts 2 and 3

1 are subject to the exclusion limits for acutely hazardous wastes
 2 established in part 7045.0219: Hazardous Waste Numbers F020,
 3 F021, F022, F023, F026, and F027.

4 Subp. 2. Hazardous wastes from nonspecific sources.

5 Hazardous wastes from nonspecific sources are listed as follows:

6

7 Hazardous		Hazard
8 Waste No.	Hazardous Waste	Code

9

10 Generic:

11 F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons, and sludges from the recovery of these solvents in degreasing operations	(T)
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12

13 F002

14 to

15 F006

[Unchanged.]

16

17 F007

18 to

19 F012

[Unchanged.]

20

21 F019

Wastewater treatment sludges from the chemical conversion coating of aluminum

(T)

22

23 F020

Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-tri-chlorophenol.

(H)

24

25 F021

Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of pentachlorophenol, or of intermediates used to produce its derivatives.

(H)

26

27 F022

Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.

(H)

28

29 F023

Wastes, except wastewater and spent carbon from hydrogen chloride purification, from the production of materials on equipment previously used for the production or manufacturing use as a reactant, chemical intermediate, or component in a formulating process of tri- and tetrachlorophenols. This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol.

(H)

30

31 F024

Wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor cleanout wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five,

(T)

32

33

34

35

1 utilizing free radical catalyzed processes. This does
 2 not include light ends, spent filters and filter aids,
 3 spent dessicants, wastewater, wastewater treatment
 4 sludges, and spent catalysts.

5
 6 F026 Wastes, except wastewater and spent carbon from (H)
 7 hydrogen chloride purification, from the production
 8 of materials on equipment previously used for the
 9 manufacturing use as a reactant, chemical
 10 intermediate, or component in a formulating process
 11 of tetra-, penta-, or hexachlorobenzene under
 12 alkaline conditions.

13
 14 F027 Discarded unused formulations containing tri-, (H)
 15 tetra-, or pentachlorophenol or discarded unused
 16 formulations containing compounds derived from these
 17 chlorophenols. This listing does not include
 18 formulations containing hexachlorophene synthesized
 19 from prepurified 2,4,5-trichlorophenol as the
 20 sole component.

21
 22 F028 Residues resulting from the incineration or thermal (T)
 23 treatment of soil contaminated with hazardous
 24 waste Nos. F020, F021, F022, F023, F026, and F027.

25
 26 Subp. 3. [Unchanged.]

27 Subp. 4. Discarded commercial chemical products,
 28 off-specification species, containers, and spill residues. The
 29 following materials or items are hazardous wastes if and when
 30 they are discarded or intended to be discarded:

31 A. to E. [Unchanged.]

32 F. The commercial chemical products or manufacturing
 33 chemical intermediates, or off-specification commercial chemical
 34 products referred to in items A to D, and listed in the
 35 following table are identified as toxic wastes (T) unless
 36 otherwise designated and are subject to the small quantity
 37 exclusion defined in part 7045.0219, subpart 1, item A. The
 38 primary hazardous properties of these materials have been
 39 indicated by the letters T (toxicity), R (reactivity), I
 40 (ignitability), and C (corrosivity). Absence of a letter
 41 indicates that the compound is listed only for toxicity. These
 42 wastes and their corresponding hazardous waste numbers are
 43 listed as follows:

44 Hazardous Wastes from Commercial Chemical Products

45 Hazardous		46 Hazard
46 Waste No.	47 Substance	48 Code
48 U001	Acetaldehyde	(I)
49 to	[Unchanged.]	
50 U185	Pentachloronitrobenzene	
51 U186	1,3-Pentadiene	(I)
52 to	[Unchanged.]	
53 U170	Phenol, 4-nitro-	

1	U137	1,10-(1,2-Phenylene)pyrene	
2	to	[Unchanged.]	
3	U162	2-Propenoic acid, 2-methyl-, methyl ester,	(I,T)
4	U194	n-Propylamine	(I,T)
5	to	[Unchanged.]	
6	U015	L-Serine, diazoacetate (ester)	
7	U089	4,4'-Stilbenediol, alpha,alpha'-diethyl-	
8	to	[Unchanged.]	
9	U205	Sulfur selenide	(R,T)
10	U207	1,2,4,5-Tetrachlorobenzene	
11	U208	1,1,1,2-Tetrachloroethane	
12	U209	1,1,2,2-Tetrachloroethane	
13	U210	Tetrachloroethylene	
14	U213	Tetrahydrofuran	(I)
15	to	[Unchanged.]	
16	U121	Trichloromonofluoromethane	
17	U234	sym-Trinitrobenzene	(R,T)
18	to	[Unchanged.]	
19	U200	Yohimban-16-carboxylic acid, 11,	
20		17-di-methoxy-18-[(3,4,5-trimethoxy-	
21		benzoyl)oxy]-, methyl ester,	
22	U249	Zinc phosphide when present at	
23		concentrations of ten percent or less	
24			
25		Subp. 5. [Unchanged.]	

26 7045.0139 BASIS FOR LISTING HAZARDOUS WASTES.

27 The following table lists the constituents which caused the
 28 agency to list wastes as hazardous in part 7045.0135, subparts 2
 29 and 3. The notation "N.A." indicates the waste is hazardous
 30 because it fails the test for the characteristics of
 31 ignitability, corrosivity, reactivity, or toxicity, and the
 32 listing of a chemical name is not applicable.

33 Basis for Listing Hazardous Wastes

34	Hazardous	
35	Waste No.	Hazardous Constituents For Which Listed
36		
37	F001	Tetrachloroethylene, methylene chloride, trichloro-
38		ethylene, 1,1,1-trichloroethane, carbon tetrachloride,
39		chlorinated fluorocarbons
40		
41	to	[Unchanged.]
42		
43	F019	Hexavalent chromium, cyanide (complexed)
44		
45	F020	Tetra- and pentachlorodibenzo-p-dioxins; tetra-
46		and pentachlorodibenzofurans; tri- and
47		tetrachlorophenols and their chlorophenoxy
48		derivative acids, esters, ethers, amine, and other
49		salts
50		
51	F021	Penta- and hexachlorodibenzo-p-dioxins; penta- and
52		hexachlorodibenzofurans; pentachlorophenol and its
53		derivatives
54		
55	F022	Tetra-, penta-, and hexachlorodibenzo-p-dioxins;
56		tetra-, penta-, and hexachlorodibenzofurans
57		
58	F023	Tetra- and pentachlorodibenzo-p-dioxins; tetra-
59		and pentachlorodibenzofurans; tri- and
60		tetrachlorophenols and their chlorophenoxy
61		derivative acids, esters, ethers, amine, and other
62		salts

- 1
2 F024 Chloromethane, dichloromethane, trichloromethane,
3 carbon tetrachloride, chloroethylene,
4 1,1-dichloroethane, 1,2-dichloroethane,
5 trans-1,2-dichloroethylene, 1,1-dichloroethylene,
6 1,1,1-trichloroethane, 1,1,2-trichloroethane,
7 trichloroethylene, 1,1,1,2-tetrachloroethane,
8 1,1,2,2-tetrachloroethane, tetrachloroethylene,
9 pentachloroethane, hexachloroethane, allyl
10 chloride (3-chloropropene), dichloropropane,
11 dichloropropene, 2-chloro-1,3-butadiene,
12 hexachloro-1,3-butadiene, hexachlorocyclopenta-
13 diene, hexachlorocyclohexane, benzene,
14 chlorobenzene, dichlorobenzenes,
15 1,2,4-trichlorobenzene, tetrachlorobenzene,
16 pentachlorobenzene, hexachlorobenzene, toluene,
17 naphthalene
18
19 F026 Tetra-, penta-, and hexachlorodibenzo-p-dioxins;
20 tetra-, penta-, and hexachlorodibenzofurans
21
22 F027 Tetra-, penta-, and hexachlorodibenzo-p-dioxins;
23 tetra-, penta-, and hexachlorodibenzofurans;
24 tri-, tetra-, and pentachlorophenols and their
25 chlorophenoxy derivative acids, esters, ethers,
26 amine, and other salts
27
28 F028 Tetra-, penta-, and hexachlorodibenzo-p-dioxins;
29 tetra-, penta-, and hexachlorodibenzofurans;
30 tri-, tetra-, and pentachlorophenols and their
31 chlorophenoxy derivative acids, esters, ethers,
32 amine, and other salts
33
34 K001 Pentachlorophenol, phenol, 2-chlorophenol, p-chlo
35 phenols, tetrachlorophe chrysene,
36 naphthalene, fluoranthene, benzo(b)fluoranth
37 benzo(a)pyrene, indeno (1,2,3,cd)pyrene, benz(a)-
38 anthracene, dibenz(a)anthracene, acenaphthalene
39
40 to [Unchanged.]
41
42 K106 Mercury
- 43 7045.0141 HAZARDOUS CONSTITUENTS.
- 44 Hazardous constituents are as follows:
- 45 Acetonitrile
46 to [Unchanged.]
47 Chlorobenzilate
48 2-Chloro-1,3-butadiene (chloroprene)
49 p-Chloro-m-cresol
50 to [Unchanged.]
51 1-(o-Chlorophenyl)thiourea
52 3-Chloropropene (allyl chloride)
53 3-Chloropropionitrile
54 to [Unchanged.]
55 Hexachlorocyclopentadiene
56 Hexachlorodibenzo-p-dioxins
57 Hexachlorodibenzofurans
58 Hexachloroethane
59 to [Unchanged.]
60 Pentachlorobenzene
61 Pentachlorodibenzo-p-dioxins
62 Pentachlorodibenzofurans
63 Pentachloroethane
64 to [Unchanged.]
65 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
66 Tetrachlorodibenzo-p-dioxins not otherwise specified in this list
67 Tetrachlorodibenzofurans
68 Tetrachloroethane not otherwise specified in this list
69 to [Unchanged.]

1 Zinc phosphide
2 7045.0219 SPECIAL REQUIREMENTS FOR SMALL QUANTITY GENERATORS OF
3 HAZARDOUS WASTE.

4 Subpart 1. Applicability; quantities. A generator is a
5 small quantity generator subject to the requirements of subparts
6 2 to 6 if, in a calendar month, he generates less than:

7 A. a total of 1,000 kilograms of hazardous waste not
8 listed as acute hazardous waste in part 7045.0135, subpart 2, 3,
9 or 4, item E; and

10 B. a total of one kilogram of acute hazardous waste
11 listed in part 7045.0135, subpart 2, 3, or 4, item E; and

12 C. a total of 100 kilograms of any residue or
13 contaminated soil, water, or other debris resulting from the
14 cleanup of a spill, into or on any land or water, of any acute
15 hazardous waste listed in part 7045.0135, subpart 2, 3, or 4,
16 item E.

17 Subp. 2. to 6. [Unchanged.]

18 7045.0526 USE AND MANAGEMENT OF CONTAINERS.

19 Subpart 1. to 5. [Unchanged.]

20 Subp. 6. Containment. Requirements for containment
21 systems are as follows:

22 A. to C. [Unchanged.]

23 D. Except as provided by item E, storage areas that
24 store containers holding only wastes that do not contain free
25 liquids need not have a containment system defined by item A if:

26 (1) the storage area is sloped or is otherwise
27 designed and operated to drain and remove liquid resulting from
28 precipitation; or

29 (2) the containers are elevated or are otherwise
30 protected from contact with accumulated liquid.

31 E. Storage areas that store containers holding wastes
32 F020, F021, F022, F023, F026, F027, and F028 from part
33 7045.0135, subpart 2 that do not contain free liquids must have
34 a containment system defined by item A.

35 Subp. 7. to 9. [Unchanged.]

1 7045.0528 TANKS.

2 Subpart 1. to 3. [Unchanged.]

3 Subp. 4. Inspections. The following apply to inspections:

4 A. and B. [Unchanged.]

5 C. As part of the contingency plan required under
6 parts 7045.0464 to 7045.0470, the owner or operator must specify:

7 (1) the procedures he or she intends to use to
8 respond to tank spills or leakage, including procedures and
9 timing for expeditious removal of leaked or spilled waste and
10 repair of the tank. As required in part 7045.0452, subpart 5,
11 item D, the owner or operator shall remedy any leak, crack, or
12 wall thinning in violation of subpart 2, or equipment or process
13 malfunction in violation of subpart 3, which he or she discovers
14 during inspection; and

15 (2) for tanks holding wastes F020, F021, F022,
16 F023, F026, F027, and F028 listed under part 7045.0135, subpart
17 2, the contingency plan must also include the procedures for
18 responding to a spill or leak of these wastes from tanks into
19 the containment system. These procedures shall include measures
20 for immediate removal of the waste from the system and
21 replacement or repair of the leaking tank.

22 Subp. 5. to 8. [Unchanged.]

23 Subp. 9. Special requirements for hazardous wastes F020,
24 F021, F022, F023, F026, F027, and F028. In addition to the
25 other requirements of subparts 1 to 8, the following
26 requirements apply to tanks storing or treating hazardous wastes
27 F020, F021, F022, F023, F026, F027, and F028 listed under part
28 7045.0135, subpart 2:

29 A. Tanks must have systems designed and operated to
30 detect and adequately contain spills or leaks that reflect
31 consideration of all relevant factors, including:

32 (1) the capacity of the tank;

33 (2) the volumes and characteristics of wastes
34 stored or treated in the tank;

35 (3) the method of collection of spills or leaks;

36 (4) the design and construction materials of the

1 tank and containment system; and

2 (5) the need to prevent precipitation and run-on
3 from entering into the system.

4 B. As part of the contingency plan required under
5 parts 7045.0464 to 7045.0470, the owner or operator must specify
6 those procedures for responding to a spill or leak from the tank
7 into the containment system that may be necessary to protect
8 human health and the environment, including measures for
9 immediate removal of the waste from the system and replacement
10 or repair of the leaking tank.

11 7045.0532 SURFACE IMPOUNDMENTS.

12 Subpart 1. Scope. This part applies to owners and
13 operators of facilities that use surface impoundments to treat,
14 store, or dispose of hazardous waste, except as part 7045.0450
15 provides otherwise.

16 Subp. 2. to 9. [Unchanged.]

17 Subp. 10. Special requirements for hazardous wastes F020,
18 F021, F022, F023, F026, F027, and F028. The following
19 requirements apply to the hazardous wastes indicated:

20 A. Hazardous waste F020, F021, F022, F023, F026, and
21 F027 listed under part 7045.0135, subpart 2 must not be placed
22 in a surface impoundment.

23 B. Hazardous waste F028 and treatment residues and
24 soils contaminated with hazardous wastes F020, F021, F022, F023,
25 F026, F027, and F028 listed under part 7045.0135, subpart 2,
26 must not be placed in surface impoundments unless the owner or
27 operator operates the surface impoundment in accordance with all
28 applicable requirements of this part and in accordance with a
29 management plan that is approved by the director considering the
30 following factors:

31 (1) the volume, physical, and chemical
32 characteristics of the wastes, including their potential to
33 migrate through soil or to volatilize or escape into the
34 atmosphere;

35 (2) the attenuative properties of underlying and
36 surrounding soils or other materials;

1 (3) the mobilizing properties of other materials
2 codisposed with these wastes; and

3 (4) the effectiveness of additional treatment,
4 design, or monitoring techniques.

5 C. The director shall impose additional design,
6 operating, and monitoring requirements if the director finds
7 that additional requirements are necessary for surface
8 impoundments used to treat, store, or dispose of hazardous waste
9 F028 and treatment residues and soils contaminated with
10 hazardous wastes F020, F021, F022, F023, F026, F027, and F028
11 listed under part 7045.0135, subpart 2 in order to reduce the
12 possibility of migration of these wastes to ground water,
13 surface water, or air so as to protect human health and the
14 environment.

15 7045.0534 WASTE PILES.

16 Subpart 1. Scope. This part applies to owners and
17 operators of facilities that store or treat hazardous waste in
18 piles, except as part 7045.0450 provides or as otherwise
19 provided in this subpart.

20 The requirements of this part do not apply to owners or
21 operators of waste piles that are closed with wastes left in
22 place. Such waste piles are subject to regulation under part
23 7045.0538.

24 The owner or operator of a waste pile that is inside or
25 under a structure that provides protection from precipitation so
26 that neither run-off nor leachate is generated is not subject to
27 subparts 2, items A and B; 3; or part 7045.0484 if:

28 A. to D. [Unchanged.]

29 Subp. 2. to 9. [Unchanged.]

30 Subp. 10. Special requirements for hazardous wastes F020,
31 F021, F022, F023, F026, F027, and F028. The following
32 requirements apply to the hazardous wastes indicated:

33 A. Hazardous wastes F020, F021, F022, F023, F026, and
34 F027 listed under part 7045.0135, subpart 2 must not be placed
35 in waste piles.

36 B. Hazardous waste F028 and treatment residues and

1 soils contaminated with hazardous wastes F020, F021, F022, F023,
2 F026, F027, and F028 listed under part 7045.0135, subpart 2,
3 must not be placed in waste piles that are not enclosed as
4 provided by subpart 1, unless the owner or operator operates the
5 waste pile in accordance with all applicable requirements of
6 this part and in accordance with a management plan for these
7 wastes that is approved by the director considering the
8 following factors:

9 (1) the volume, physical, and chemical
10 characteristics of the wastes, including their potential to
11 migrate through soil or to volatilize or escape into the
12 atmosphere;

13 (2) the attenuative properties of underlying and
14 surrounding soils or other materials;

15 (3) the mobilizing properties of other materials
16 codisposed with these wastes; and

17 (4) the effectiveness of additional treatment,
18 design, or monitoring techniques.

19 C. The director shall impose additional design, operating,
20 and monitoring requirements if the director determines that the
21 additional requirements are necessary for piles used to store or
22 treat hazardous waste F028 and treatment residues and soils
23 contaminated with hazardous wastes F020, F021, F022, F023, F026,
24 F027, and F028 listed under part 7045.0135, subpart 2 in order
25 to reduce the possibility of migration of these wastes to ground
26 water, surface water, or air so as to protect human health and
27 the environment.

28 7045.0536 LAND TREATMENT.

29 Subpart 1. **Scope.** This part applies to owners and
30 operators of facilities that treat or dispose of hazardous waste
31 in land treatment units except as part 7045.0450 provides
32 otherwise.

33 Subp. 2. to 10. [Unchanged.]

34 Subp. 11. **Special requirements for hazardous wastes F020,**
35 **F021, F022, F023, F026, F027, and F028.** The following
36 requirements apply to the hazardous wastes indicated:

1 A. Hazardous wastes F020, F021, F022, F023, F026, and
2 F027 listed under part 7045.0135, subpart 2 must not be placed
3 in a land treatment unit.

4 B. Hazardous waste F028 and treatment residues and
5 soils contaminated with hazardous wastes F020, F021, F022, F023,
6 F026, F027, and F028 listed under part 7045.0135, subpart 2 must
7 not be managed at land treatment units unless the owner or
8 operator operates the land treatment unit in accordance with all
9 applicable requirements of this part and in accordance with a
10 management plan that is approved by the director considering the
11 following factors:

12 (1) the volume, physical, and chemical
13 characteristics of the wastes, including their potential to
14 migrate through soil or to volatilize or escape into the
15 atmosphere;

16 (2) the attenuative properties of underlying and
17 surrounding soils or other materials;

18 (3) the mobilizing properties of other materials
19 codisposed with these wastes; and

20 (4) the effectiveness of additional treatment,
21 design, or monitoring techniques.

22 C. The director shall impose additional design,
23 operating, and monitoring requirements if the director finds
24 that the additional requirements are necessary for land
25 treatment facilities used to treat or dispose of hazardous waste
26 F028 and treatment residues and soils contaminated with
27 hazardous wastes F020, F021, F022, F023, F026, F027, and F028
28 listed under part 7045.0135, subpart 2 in order to reduce the
29 possibility of migration of these wastes to ground water,
30 surface water, or air so as to protect human health and the
31 environment.

32 7045.0538 LANDFILLS.

33 Subpart 1. Scope. This part applies to owners and
34 operators of facilities that dispose of hazardous waste in
35 landfills, except as part 7045.0450 provides otherwise.

36 Subp. 2. to 12. [Unchanged.]

1 Subp. 13. Special requirements for hazardous wastes F020,
2 F021, F022, F023, F026, F027, and F028. The following
3 requirements apply to the hazardous wastes indicated:

4 A. Hazardous wastes F020, F021, F022, F023, F026, and
5 F027 listed under part 7045.0135, subpart 2 must not be placed
6 in a landfill.

7 B. Hazardous waste F028 and treatment residues and
8 soils contaminated with hazardous wastes F020, F021, F022, F023,
9 F026, F027, and F028 listed under part 7045.0135, subpart 2,
10 must not be managed at landfills unless the owner or operator
11 operates the landfill in accordance with all applicable
12 requirements of this part and in accordance with a management
13 plan that is approved by the director considering the following
14 factors:

15 (1) the volume, physical, and chemical
16 characteristics of the wastes, including their potential to
17 migrate through soil or to volatilize or escape into the
18 atmosphere;

19 (2) the attenuative properties of underlying and
20 surrounding soils or other materials;

21 (3) the mobilizing properties of other materials
22 codisposed with these wastes; and

23 (4) the effectiveness of additional treatment,
24 design, or monitoring techniques.

25 C. The director shall impose additional design, operating,
26 and monitoring requirements if the director finds that the
27 additional requirements are necessary for landfills used to
28 dispose of hazardous waste F028 and treatment residues and soil
29 contaminated with hazardous wastes F020, F021, F022, F023, F026,
30 F027, and F028 listed under part 7045.0135, subpart 2 in order
31 to reduce the possibility of migration of these wastes to ground
32 water, surface water, or air so as to protect human health and
33 the environment.

34 7045.0542 THERMAL TREATMENT.

35 Subpart 1. to 3. [Unchanged.]

36 Subp. 4. Performance standards. A thermal treatment

1 facility thermally treating hazardous waste must be designed,
 2 constructed, and maintained so that, when operated in accordance
 3 with operating requirements specified under subpart 6 it will
 4 comply with all federal and state air quality rules and
 5 regulations and will meet the performance standards of items A
 6 to E, whichever are applicable:

7 A. Except as provided in item E, a thermal treatment
 8 facility thermally treating hazardous waste must achieve a
 9 destruction and removal efficiency of 99.99 percent for each
 10 principal organic hazardous constituent designated in its permit
 11 for each waste feed. The destruction and removal efficiency
 12 (DRE) is determined for each principal organic hazardous
 13 constituent from the following equation:

$$14 \quad \text{DRE} = \frac{(\text{Win} - \text{Wout})}{\text{Win}} \times 100\%$$

15
 16
 17 where:

18 Win = Mass feed rate of one principal organic hazardous
 19 constituent in the waste stream feeding the thermal treatment
 20 process, and

21 Wout = Mass emission rate of the same principal organic
 22 hazardous constituent present in exhaust emissions prior to
 23 release to the atmosphere.

24 B. to D. [Unchanged.]

25 E. A thermal treatment facility thermally treating
 26 hazardous wastes F020, F021, F022, F023, F026, and F027 listed
 27 under part 7045.0135, subpart 2 must achieve a destruction and
 28 removal efficiency ("DRE") of 99.9999 percent for each principal
 29 organic hazardous constituent designated in its permit. This
 30 performance must be demonstrated on principal organic hazardous
 31 constituents that are more difficult to incinerate than tetra-,
 32 penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE
 33 is determined for each principal organic hazardous constituent
 34 from the equation in item A. In addition, the owner or operator
 35 of the thermal treatment facility must notify the director of
 36 the intent to burn waste F020, F021, F022, F023, F026, or F027.

37 Subp. 5. to 9. [Unchanged.]

1 7045.0552 FACILITIES GOVERNED BY INTERIM STATUS.

2 Subpart 1. to 3. [Unchanged.]

3 Subp. 4. Restrictions. Hazardous wastes F020, F021, F022,
4 F023, F026, F027, and F028 listed under part 7045.0135, subpart
5 2 must not be managed at facilities governed by interim status
6 unless:

7 A. the wastewater treatment sludge is generated in a
8 surface impoundment as part of the plant's wastewater treatment
9 system;

10 B. the waste is stored in tanks or containers; or

11 C. the waste is stored or treated in waste piles that
12 are enclosed in accordance with part 7045.0534, subpart 1 and
13 comply with all other provisions of part 7045.0534.

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