

DRAFT PROPOSED RULES

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY

SOLID AND HAZARDOUS WASTE DIVISION

HAZARDOUS WASTE MANAGEMENT

CHAPTER 10

STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS
WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

2007

DEPARTMENT OF ENVIRONMENTAL QUALITY
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DEPARTMENT OF ENVIRONMENTAL QUALITY
SOLID AND HAZARDOUS WASTE DIVISION

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CHAPTER 10

STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT,
STORAGE, AND DISPOSAL FACILITIES

264/Subpart A Section 1. GENERAL

264.1 (a) PURPOSE, SCOPE AND APPLICABILITY.

264.1(a) (i) The purpose of this Chapter and Chapter 5 of these rules and regulations is to establish minimum standards which define the acceptable management of hazardous waste.

264.1(b) (ii) The standards in this Chapter and in Chapter 5 of these rules and regulations apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste, except as specifically provided otherwise in this Chapter or in Chapter 2 of these rules and regulations.

264.1(c) (iii) The requirements of this Chapter and Chapter 5 of these rules and regulations apply to a person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Marine Protection, Research, and Sanctuaries Act only to the extent they are included in a State of Wyoming hazardous waste management facility permit by rule granted to such a person under Chapter 7, Section 1(a) of these rules and regulations.

264.1(d) (iv) The requirements of this Chapter and Chapter 5 of these rules and regulations apply to a person disposing of hazardous waste by means of underground injection subject to a permit issued under an Underground Injection Control (UIC) program approved or promulgated under the Safe Drinking Water Act only to the extent they are required by 40 CFR 144.14.

[Comment: Regulations in this Chapter apply to the above-ground treatment or storage of hazardous waste before it is injected underground.]

264.1(e) (v) The requirements of this Chapter and Chapter 5 of these rules and regulations apply to the owner or operator of a POTW which treats, stores, or disposes of hazardous waste only to the extent they are included in a State hazardous waste management permit by rule granted to such a person under Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulations.

264.1(f) (vi) The requirements of 40 CFR part 264 do not apply to a person who treats, stores, or disposes of hazardous waste ^ except that:

264.1(f)(1) (A) **Disposal of hazardous waste by means of underground injection is regulated under Chapters VIII, IX, and XIII of the Wyoming Water Quality Rules and Regulations.**

- 264.1(f)(2) (B) Any person who treats, stores or disposes of hazardous waste ^ at a facility which was not covered by standards under 40 CFR 264 when **Wyoming** obtained authorization, and for which EPA promulgates standards under 40 CFR 264 after **Wyoming** is authorized, **is subject to 40 CFR part 264**. This paragraph will only apply until **Wyoming** is authorized to permit such facilities under subpart A of 40 CFR 271.
- 264.1(f)(3) (C) **Any** person who treats, stores, or disposes of hazardous waste, ^ if **Wyoming** has not been authorized to carry out the requirements and prohibitions applicable to the treatment, storage, or disposal of hazardous waste at his or her facility ^ **is subject to 40 CFR part 264**. The requirements and prohibitions that are applicable until **Wyoming** receives authorization to carry them out include all Federal program requirements identified in 40 CFR 271.1(j).
- 264.1(g) (vii) The requirements of this Chapter and Chapter 5 of these rules and regulations do not apply to:
- 264.1(g)(1) (A) The owner or operator of a facility permitted, licensed, or registered by the State of Wyoming to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under this Chapter and Chapter 5 of these rules and regulations by Chapter 2, Section 1(e) of these rules and regulations;
- 264.1(g)(2) (B) The owner or operator of a facility managing recyclable materials described in Chapter 2, Sections 1(f)(i)(B), (C), and (D) of these rules and regulations (except to the extent they are referred to in Chapter 12, Sections 9 through 17 or Chapter 12, Sections 3, 6, 7 or 8 of these rules and regulations).
- 264.1(g)(3) (C) A generator accumulating waste on-site in compliance with Chapter 8, Section 3(e) of these rules;
- 264.1(g)(4) (D) A farmer disposing of waste pesticides from his or her own use in compliance with Chapter 8, Section 7(a) of these rules and regulations;
- 264.1(g)(5) (E) The owner or operator of a totally enclosed treatment facility, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations.
- 264.1(g)(6) (F) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Chapter 13, Section 4(a), Table "Treatment Standards for Hazardous Wastes"), or reactive (D003) waste, to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in Section 2(h)(ii) of this Chapter.
- 264.1(g)(7) (G) [Reserved]
- 264.1(g)(8) (H) The following:

- 264.1(g)(8)(i) (I) Except as provided in Section 1(a)(vii)(H)(II) of this Chapter, a person engaged in treatment or containment activities during immediate response to any of the following situations:
- ... (i)(A) (1.) A discharge of a hazardous waste;
- ... (i)(B) (2.) An imminent and substantial threat of a discharge of hazardous waste;
- ... (i)(C) (3.) A discharge of a material which, when discharged, becomes a hazardous waste.
- ... (i)(D) (4.) An immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of military munitions, other explosive material, or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in [40 CFR 260.10] Chapter 1, Section 1(f)(i) of these rules and regulations.
- ... (ii) (II) An owner or operator of a facility otherwise regulated by this Chapter and Chapter 5 of these rules and regulations must comply with all applicable requirements of Sections 3 and 4 of this Chapter.
- ... (iii) (III) Any person who is covered by Section 1(a)(vii)(H)(I) of this Chapter and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of this Chapter and Chapter 1, Sections 1(h)-1(j); Chapters 3 through 7; and Chapter 11, Section 2 of these rules and regulations for those activities.
- ... (iv) (IV) In the case of an explosives or munitions emergency response, if a Federal, State, Tribal or local official acting within the scope of his or her official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste by transporters who do not have EPA identification numbers and without the preparation of a manifest. In the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit must retain records for three years identifying the dates of the response, the responsible persons responding, the type and description of material addressed, and its disposition.
- 264.1(g)(9) (I) A transporter storing manifested shipments of hazardous waste in containers meeting the requirements of Chapter 8, Section 3(a) of these rules and regulations at a transfer facility for a period of ten days or less.
- 264.1(g)(10) (J) The addition of absorbent material to waste in a container (as defined in Chapter 1, Section 1(f)(i) of these rules and regulations) or the addition of waste to absorbent material in a container, provided that these additions occur at the

time waste is first placed in the container; and Sections 2(h)(ii), 8(b), and 8(c) of this Chapter are complied with.

264.1(g)(11) (K) Universal waste handlers and universal waste transporters (as defined in Chapter 1, Section 1(f)(i) of these rules and regulations) handling the wastes listed below. These handlers are subject to regulation under Chapter 14 of these rules and regulations, when handling the below listed universal wastes.

...(i) (I) Batteries as described in Chapter 14, Section 1(b) of these rules and regulations.

...(ii) (II) Pesticides as described in Chapter 14, Section 1(c) of these rules and regulations;

...(iii) (III) Thermostats as described in Chapter 14, Section 1(d) of these rules and regulations; and

...(iv) (IV) ~~Mercury-Containing~~ Lamps as described in Chapter 14, Section 1(e) of these rules and regulations.

264.1(h) (viii) The requirements of this Chapter and Chapter 5 of these rules and regulations apply to owners or operators of all facilities which treat, store, or dispose of hazardous wastes referred to in Chapter 13 of these rules and regulations.

(ix) Compliance with the permitting requirements of these rules and regulations does not obviate any duty to obtain and comply with Air Quality construction or modification permit pursuant to Section 21 of the Wyoming Air Quality standards and regulations.

264.1(i) (x) Chapter 12, Section 19(f) of these rules and regulations identifies when the requirements of this Chapter apply to the storage of military munitions classified as waste material under Chapter 12, Section 19(c) of these rules and regulations. The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in Chapters 1 through 11; Chapter 12, Sections 1-8, 19 and 20; and Chapter 13.

264.2 (b) RESERVED.

264.3 (c) RELATIONSHIP TO INTERIM STATUS STANDARDS. A facility owner or operator who has fully complied with the requirements for interim status -- as defined in regulations under Chapter 11, Section 2(a) of these rules and regulations -- must comply with the regulations specified in Chapter 5 and Chapter 11, Section 1 and Sections 4 through 3+2 of these rules and regulations in lieu of the regulations in this Chapter, until final administrative disposition of his or her permit application is made, except as provided under Section 18 of this Chapter.

264.4 (d) IMMINENT HAZARD ACTION. Notwithstanding any other provisions of these rules and regulations, enforcement actions may be brought pursuant to W.S. 35-11-115; W.S. 35-11-503(d); Articles 7 and 9 of the Wyoming Environmental Quality Act; Chapter 1, Section 1(k) of these rules and regulations; or RCRA Section 7003.

264/Subpart B Section 2. GENERAL FACILITY STANDARDS

- 264.10 (a) APPLICABILITY.
- 264.10(a) (i) The regulations in this Section apply to owners and operators of all hazardous waste facilities, except as provided in Section 1(a) and in Section 2(a)(ii) of this Chapter.
- 264.10(b) (ii) Section 2(i)(ii)(B) of this Chapter applies only to facilities subject to regulation under Sections 8 through 14 and Section 23 of this Chapter.
- 264.11 (b) IDENTIFICATION NUMBER. Every facility owner or operator must apply to the Department for an EPA identification number in accordance with the EPA notification procedures (45 FR 12746). **The EPA identification number shall be considered to be the State of Wyoming identification number for purposes of these rules and regulations.**
- 264.12 (c) REQUIRED NOTICES.
- 264.12(a) (i) Notices:
- 264.12(a)(1) (A) The owner or operator of a facility that has arrange to receive hazardous waste from a foreign source must notify the EPA Regional Administrator in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.
- 264.12(a)(2) (B) The owner or operator of a recovery facility that has arranged to receive hazardous waste subject to subpart H of 40 CFR Part 262 (see Section 1(a)(iv) of Chapter 8, ~~Section 8~~ of these rules and regulations) must provide a copy of the tracking document bearing all required signatures to the notifier, to the Office of Enforcement and Compliance Assurance, Office of Compliance, Enforcement Planning, Targeting and Data Division (2222A), Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the competent authorities of all other concerned countries within three working days of receipt of the shipment. The original of the signed tracking document must be maintained at the facility for at least three years.
- 264.12(b) (ii) The owner or operator of a facility that receives hazardous waste from an off-site source (except where the owner or operator is also the generator) must inform the generator in writing that he or she has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator must keep a copy of this written notice as part of the operating record.
- 264.12(c) (iii) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of this Chapter and Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 5; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulations.

[Comment: An owner's or operator's failure to notify the new owner or operator of the requirements of this Chapter and Chapter 5 of

these rules and regulations in no way relieves the new owner or operator of his or her obligation to comply with all applicable requirements.]

264.13 (d) GENERAL WASTE ANALYSIS.

264.13(a)(1) (i) Before an owner or operator treats, stores, or disposes of any hazardous wastes, or nonhazardous wastes if applicable under Section 7(d)(iv) of this Chapter,

264.13(a)(1) (A) He or she must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with this Chapter and Chapter 13 of these rules and regulations.

264.13(a)(2) (B) The analysis may include data developed under Chapter 2 of these rules and regulations, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

[Comment: For example, the facility's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with Sections 2(d)(i) and 2(d)(i)(A) of this Chapter. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part of the information required by Sections 2(d)(i) and 2(d)(i)(A) of this Chapter, except as otherwise specified in Chapter 13, Sections 1(g)(ii) and 1(g)(iii) of these rules and regulations. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with Section 2(d) of this Chapter.]

264.13(a)(3) (C) The analysis must be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated:

...(i) (I) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes, or non-hazardous wastes if applicable under Section 7(d)(iv) of this Chapter, has changed; and

...(ii) (II) For off-site facilities, when the results of the inspection required in Section 2(d)(i)(D) of this Chapter indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

264.13(a)(4) (D) The owner or operator of an off-site facility must inspect and, if necessary, analyze each hazardous waste movement received at the facility to determine whether it matches the identity of the waste specified on the accompanying manifest or shipping paper.

264.13(b) (ii) The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he

or she will carry out to comply with Section 2(d)(i) of this Chapter. He or she must keep this plan at the facility. At a minimum, the plan must specify:

- 264.13(b)(1) (A) The parameters for which each hazardous waste, or non-hazardous waste if applicable under Section 7(d)(iv) of this Chapter, will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with Section 2(d)(i) of this Chapter);
- 264.13(b)(2) (B) The test methods which will be used to test for these parameters;
- 264.13(b)(3) (C) The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:
- ... (i) (I) One of the sampling methods described in Chapter 2, Appendix A of these rules and regulations; or
- ... (ii) (II) An equivalent sampling method, **if such sampling method is approved by rule pursuant to Chapter 3, Section 2 of DEQ Rules of Practice and Procedure.**
- [Comment: See Chapter 1, Section 3(b) of these rules and regulations for related discussion.]
- 264.13(b)(4) (D) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and
- 264.13(b)(5) (E) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply.
- 264.13(b)(6) (F) Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in Sections 2(h), 13(o), 14(b), 26(e)(iv), 27(n)(iv), and Section 28(d) of this Chapter, and Chapter 13, Section 1(g) of these rules and regulations.
- 264.13(b)(7) (G) For surface impoundments exempted from land disposal restrictions under Chapter 13, Section 1(d)(i) of these rules and regulations, the procedures and schedules for:
- ... (i) (I) The sampling of impoundment contents;
- ... (ii) (II) The analysis of test data; and,
- ... (iii) (III) The annual removal of residues which are not delisted under Chapter 1, Section 3(c) of these rules and regulations or which exhibit a characteristic of hazardous waste and either:
- ... (iii)(A) (1.) Do not meet applicable treatment standards of Chapter 13, Section 4 of these rules and regulations; or
- ... (iii)(B) (2.) Where no treatment standards

have been established;

- ...(iii)(B)(1) a. Such residues are prohibited from land disposal under Chapter 13, Section 3(c) and W.S. 35-11-503(d); or
 - ...(iii)(B)(2) b. Such residues are prohibited from land disposal under Chapter 13, Section 3(d)(vi) of these rules and regulations.
 - 264.13(b)(8) (H) For owners and operators seeking an exemption to the air emission standards of Section 28 of this Chapter accordance with Section 28(c).
 - ..(i) (I) If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.
 - ..(ii) (II) If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off-site, that is used as the basis for knowledge of the waste.
 - 264.13(c) (iii) For off-site facilities, the waste analysis plan required in Section 2(d)(ii) of this Chapter must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:
 - 264.13(c)(1) (A) The procedures which will be used to determine the identity of each movement of waste managed at the facility; and
 - 264.13(c)(2) (B) The sampling method which will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.
 - 264.13(c)(3) (C) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.
- [Comment: Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Sections 2 and 3 of these rules and regulations requires that the waste analysis plan be submitted with part B of the permit application.]
- 264.14 (e) SECURITY.
 - 264.14(a) (i) The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of his or her facility, unless he or she can demonstrate to the Director that:
 - 264.14(a)(1) (A) Physical contact with the waste, structures,

or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and

- 264.14(a)(2) (B) Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of this Chapter and Chapter 5 of these rules and regulations.

[Comment: Chapter 3, Section 2 of these rules and regulations requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

- 264.14(b) (ii) Unless the owner or operator has made a successful demonstration under Sections 2(e)(i)(A) and 2(e)(i)(B) of this Chapter, a facility must have:

- 264.14(b)(1) (A) A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or

(B) Controlled Entry:

- 264.14(b)(2)(i) (I) An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

- ...(ii) (II) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

[Comment: The requirements of Section 2(e)(ii) of this Chapter are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier and a means to control entry, which complies with the requirements of Section 2(e)(ii)(A) or 2(e)(ii)(B) of this Chapter.]

- 264.14(c) (iii) Unless the owner or operator has made a successful demonstration under Sections 2(e)(i)(A) and 2(e)(i)(B) of this Chapter, a sign with the legend, "Danger -- Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility ^, and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger -- Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

[Comment: See Section 7(h)(ii) in this Chapter for discussion of security requirements at disposal facilities during the post-closure care period.]

264.15 (f) GENERAL INSPECTION REQUIREMENTS.

264.15(a) (i) The owner or operator must inspect his or her facility for malfunctions and deterioration, operator errors, and discharges which may be causing -- or may lead to -- (A) release of hazardous waste constituents to the environment or (B) a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

264.15(b) (ii) Schedules:

264.15(b)(1) (A) The owner or operator must develop and follow a written schedule for inspecting monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

264.15(b)(2) (B) He or she must keep this schedule at the facility.

264.15(b)(3) (C) The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

264.15(b)(4) (D) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in Sections 8(e), 9(d), 9(f), 10(g), 11(e), 12(i), 13(d), 14(h), 23(c), 26(d), 27(c), 27(d), 27(i) and 28(d) through 28(j), of this Chapter, where applicable.

[Comment: Chapter 3, Section 2 of these rules and regulations requires the inspection schedule to be submitted with part B of the permit application. The Director will evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, the Director may modify or amend the schedule as may be necessary.]

264.15(c) (iii) The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

264.15(d) (iv) The owner or operator must record inspections in an inspection log or summary. He or she must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

264.16 (g) PERSONNEL TRAINING.

264.16(a) (i) Training program:

264.16(a)(1) (A) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this Chapter and Chapter 5 of these rules and regulations. The owner or operator must ensure that this program includes all the elements described in the document required under Section 2(g)(iv)(C) of this Chapter.

[Comment: Chapter 3, Section 2 of these rules and regulations requires that owners and operators submit with Part B of the State hazardous waste management facility permit application, an outline of the training program used (or to be used) at the facility and a brief description of how the training program is designed to meet actual job tasks.]

264.16(a)(2) (B) This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

264.16(a)(3) (C) At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

- ...(i) (I) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- ...(ii) (II) Key parameters for automatic waste feed cut-off systems;
- ...(iii) (III) Communications or alarm systems;
- ...(iv) (IV) Response to fires or explosions;
- ...(v) (V) Response to ground-water contamination incidents; and
- ...(vi) (VI) Shutdown of operations.

264.16(b) (ii) Facility personnel must successfully complete the program required in Section 2(g)(i) of this Chapter within ^ six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of Section 2(g)(i) of this Chapter.

264.16(c) (iii) Facility personnel must take part in an annual review of the initial training required in Section 2(g)(i) of this Chapter.

- 264.16(d) (iv) The owner or operator must maintain the following documents and records at the facility:
- 264.16(d)(1) (A) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;
- 264.16(d)(2) (B) A written job description for each position listed under Section 2(g)(iv)(A) of this Chapter. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;
- 264.16(d)(3) (C) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under Section 2(g)(iv)(A) of this Chapter;
- 264.16(d)(4) (D) Records that document that the training or job experience required under Sections 2(g)(i), (ii), and (iii) of this Chapter has been given to, and completed by, facility personnel.
- 264.16(e) (v) Training records on current personnel must be kept until closure of the facility; training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.
- 264.17 (h) GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTES.
- 264.17(a) (i) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.
- 264.17(b) (ii) Where specifically required by other Sections of this Chapter, the owner or operator of a facility that treats, stores or disposes ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, must take precautions to prevent reactions which:
- 264.17(b)(1) (A) Generate extreme heat or pressure, fire or explosions, or violent reactions;
- 264.17(b)(2) (B) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

264.17(b)(3) (C) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

264.17(b)(4) (D) Damage the structural integrity of the device or facility;

264.17(b)(5) (E) Through other like means threaten human health or the environment.

264.17(c) (iii) When required to comply with Section 2(h)(i) or 2(h)(ii) of this Chapter, the owner or operator must document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in Section 2(d) of this Chapter), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

264.18 (i) LOCATION STANDARDS.

(i) Applicability:

(A) The location standards in Section 2(i) of this Chapter apply to any new or existing facility for the treatment, storage, or disposal of hazardous wastes, which is subject to the permit requirements of this Chapter, except as provided in Section 2(i)(i)(B) of this Chapter.

(B) The location standards in Section 2(i) of this Chapter, excluding the standards in Section 2(i)(ii) of this Chapter, do not apply to any new or existing Class I hazardous waste management facility which is required by law to be constructed at the site of a hazardous waste generator to manage of newly-listed hazardous waste currently legally produced solely by that generator.

(ii) Facilities shall not be located in violation of the following standards:

264.18(a) (A) Seismic considerations:

264.18(a)(1) (I) Portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted must not be located within 61 meters (200 feet) of a fault which has had displacement in Holocene time.

264.18(a)(2) (II) ^ The following terms, defined in Chapter 1, Section 1(f)(i) of these rules and regulations, apply to Section 2(i)(ii)(A)(I) of this Chapter: "fault," "displacement," and "Holocene."

264.18(b) (B) Floodplains:

264.18(b)(1) (I) **New facilities shall not be located within the boundaries of a 100-year floodplain.** If an existing facility is located within a 100-year floodplain, it must be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood, unless the owner or

operator can demonstrate to the Director's satisfaction that:

- ...(i) (1.) Procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters; or
- ...(ii) (2.) For existing surface impoundments, waste piles, land treatment units, landfills, and miscellaneous units, no adverse effects on human health or the environment will result if washout occurs, considering:
 - ...(ii)(A) (a.) The volume and physical and chemical characteristics of the waste in the facility;
 - ...(ii)(B) (b.) The concentration of hazardous constituents that would potentially affect surface waters as a result of washout;
 - ...(ii)(C) (c.) The impact of such concentrations on the current or potential uses of and water quality standards established for the affected surface waters; and
 - ...(ii)(D) (d.) The impact of hazardous constituents on the sediments of affected surface waters or the soils of the 100-year floodplain that could result from washout.

[Comment: The location where wastes are moved must be a facility authorized to manage hazardous waste in the State of Wyoming or in interim status under Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11 of these rules and regulations.]

[Comment: (1) Requirements pertaining to other Federal laws which affect the location and permitting of facilities are found in Chapter 1, Section 1(j) of these rules and regulations. For details relative to these laws, see EPA's manual for SEA (Special Environmental Area) requirements for hazardous waste facility permits. Though EPA is responsible for complying with these requirements, applicants are advised to consider them in planning the location of a facility to help prevent subsequent project delays.]

264.18(b)(2) (II) ^ The following terms, defined in Chapter 1, Section 1(f)(i) of these rules and regulations, apply to Section 2(i)(ii)(B)(I) of this Chapter: "100-year floodplain," "washout," and "100-year flood."

264.18(c) (C) Salt dome formations, salt bed formations, underground mines and caves. The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave is prohibited^.

(iii) In addition to the location standards of Section 2(i)(ii) of this Chapter, Class II facilities, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, shall not be located in violation of the following standards:

(A) Local zoning ordinances: Facility locations

shall not be in conflict with local zoning ordinances or land use plans that have been adopted by a county commission or municipality.

(B) Wetlands: Facilities shall not be located in wetlands.

(C) Wild and Scenic Rivers Act: Facility locations shall not diminish the scenic, recreational and fish and wildlife values for any Section of river designated for protection under the Wild and Scenic Rivers Act, 16 USC 1271 et seq., and implementing regulations.

(D) National Historic Preservation Act: Facilities shall not be located in areas where they may pose a threat to an irreplaceable historic or archeological site listed pursuant to the National Historic Preservation Act, 16 USC 470 et seq. and implementing regulations, or to a natural landmark designated by the National Park Service.

(E) Endangered Species Act: Facilities shall not be located within a critical habitat of an endangered or threatened species listed pursuant to the Endangered Species Act, 16 USC 1531 et seq., and implementing regulations, where the facility may cause destruction or adverse modification of the critical habitat, may jeopardize the continued existence of endangered or threatened species or contribute to the taking of such species.

(F) Big game winter range/grouse breeding grounds: Facilities shall not be located within critical winter ranges for big game or breeding grounds for grouse, unless after consultation with the Wyoming Game and Fish Department, the director determines that facility development would not conflict with the conservation of Wyoming's wildlife resources.

(G) Avalanche areas: Facilities shall not be located in documented avalanche prone areas.

(H) Hydrogeologic conditions: Facilities shall not be located in an area where the Department, after investigation by the applicant, finds that there is a reasonable probability that hazardous waste management activities will have a detrimental effect on surface water or groundwater quality.

(I) Facilities larger than one acre, and any facility which is an incinerator, boiler, or industrial furnace, shall not be located within:

(I) One (1) mile of a school, or one (1) mile of an occupied dwelling house;

(II) One (1) mile of any public park or recreation area;

(III) One (1) mile of the boundaries of an incorporated city or town.

(J) One thousand (1,000) feet of any perennial lake or pond which is either naturally occurring, or which contains water used for any purpose not directly related to an industrial process.

(K) Reserved.

(L) Three hundred (300) feet of any perennial river or stream.

(iv) Reserved.

(v) In addition to the location standards of Section 2(i)(ii) of this Chapter, Class III facilities, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, shall not be located in violation of the following standards:

(A) All location standards applicable to Class II facilities, in Section 2(i)(iii) of this Chapter;

(B) Five (5) miles of a school or an occupied dwelling house;

(C) One (1) mile of the center line of the right-of-way of a state or federal highway;

(D) Five (5) miles of the boundaries of an incorporated city or town;

(E) For any hazardous waste management facility subject to the location standards of Sections 2(i)(v)(A) through (D) of this Chapter, the following additional location standards shall apply if they are more restrictive than the location standards of Sections 2(i)(v)(A) through (D) of this Chapter:

(I) No facility shall be located such that it poses a cancer risk to potentially exposed populations including residents, occupants of businesses, schools, or institutions, exceeding one excess cancer per million people. The cancer risk shall be assessed considering projected pollutant release rates and assumed target intakes during normal operation conditions specified in Section 2(i)(v)(F) of this Chapter.

(II) No facility shall be located such that it causes chronic toxic effects to potentially exposed populations including residents, occupants of businesses, schools, or institutions, due to exposures to pollutants higher than chronic oral reference dose or chronic inhalation reference concentration. The chronic toxic effect shall be assessed considering projected pollutant release rates and assumed target intakes during normal operation or failure conditions specified in Section 2(i)(v)(F) of this Chapter.

(III) No facility shall be located such

that it causes subchronic or acute toxic effects to people at the facility property boundary due to exposures to pollutants higher than the subchronic oral reference dose or subchronic inhalation reference concentration. The subchronic and acute toxic effect shall be assessed considering projected pollutant release rates and assumed target intakes during failure conditions specified in Section 2(i)(v)(F) of this Chapter.

(F) For the purpose of assessment of health risks associated with normal operation or failure of a hazardous waste management facility pollution control or containment system, the following normal operation or failure modes shall be used:

(I) For hazardous waste storage facilities which are tanks or vessels, normal operation modes shall include operation of the facility as designed; failure modes shall include tank rupture, the effects of inadvertent mixing of incompatible wastes, failure of primary and secondary containment systems or liners, and releases of toxic or hazardous air pollutants from tank ruptures or during fires;

(II) For hazardous waste storage facilities which are impoundments, normal operation modes shall include operation of the facility as designed; failure modes shall include failure of primary or secondary containment systems or liners, dike failure, and releases of toxic or hazardous air pollutants during fires or from inadvertent mixing of incompatible wastes such as strong acids or bases with wastes stored in the impoundment;

(III) For hazardous waste storage facilities which are waste piles, normal operation modes shall include operation of the facility as designed; failure modes shall include failure of primary and secondary containment systems or liners, failure of primary systems to control releases of wastes during high winds, and releases during fires;

(IV) For hazardous waste landfills and treatment facilities, normal operation modes shall include operation of the facility as designed; failure modes shall include failure of primary and secondary containment systems or liners, releases of toxic or hazardous air pollutants from inadvertent mixing of incompatible wastes and releases during fires;

(V) For hazardous waste incinerators and other treatment facilities for the burning, thermal treatment, or combustion of hazardous wastes, normal operation modes shall include operation of the facility as designed; failure modes shall include failure of primary air pollution control systems, failure of any automatic or manual waste feed cutoff system, operation of the facility under conditions of waste temperature and residence time to be expected during upset, startup or shutdown conditions, and inadvertent combustion or treatment of wastes containing chlorinated hazardous wastes, dioxins, arsenic, antimony, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium; and

(VI) For other hazardous waste storage, treatment, or disposal facilities, normal operation or failure modes shall be specified by the director.

(G) For the purpose of conducting the health risk assessment required by Section 2(i)(v)(E) of this Chapter, the following protocols shall be used by the applicant, unless alternate protocols are approved by the department:

(I) "Risk assessment guidelines of 1986," Office of Health & Environmental Assessment, U.S. Environmental Protection Agency, EPA 600/8-87/045,

(II) "Risk Assessment Guidance for Superfund: Volume I, Human Health", 1989, U.S. Environmental Protection Agency, EPA 540/1-89/002,

(III) "Superfund Exposure Assessment Manual", 1988, U.S. Environmental Protection Agency, EPA 540/1-88/001,

(IV) "Guidance for Data Useability in Risk Assessment", 1990, U.S. Environmental Protection Agency, EPA 540/6-90/008, and

(V) "Exposure Factors Handbook", 1989, U.S. Environmental Protection Agency, EPA 600/8-89/043.

(VI) "Supplemental Guidance", OSWER Directive 9285.6-03, U.S. Environmental Protection Agency.

(H) For the purpose of conducting the health risk assessment required by Section 2(i)(v)(E) of this Chapter, toxicological data contained in the following publications shall be used unless alternate data sources are approved by the department:

(I) Integrated Risk Information System (IRIS), U.S. Environmental Protection Agency.

(II) "Health Effects Assessment Summary Tables", Office of Research and Development, Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, OERR 9200.6-303 (91-1) (or most recent edition),

(III) Data from a qualified EPA toxicologist, if approved by the department.

(j) MANAGEMENT AND TECHNICAL CAPABILITIES OF THE OWNER AND OPERATOR. The applicant shall possess demonstrated acceptable experience in operating hazardous waste treatment, storage, and disposal facilities in a manner which does not demonstrate a disregard for human health and the environment. The Director shall consider the applicant to have demonstrated acceptable experience if:

(i) The applicant is currently operating an existing facility permitted under Chapter 3 of these rules and regulations and that facility is currently in substantial compliance with all rules, regulations, and permit conditions adopted under the Environmental Quality Act and applicable federal regulations; or

(ii) If not currently operating a facility in this state, the applicant has experience operating hazardous waste treatment, storage, and disposal facilities in other states and has operated such facilities in substantial compliance with applicable state and federal regulations and permit requirements. Applicants who do not have an operating history in this state shall submit the following information to the Director:

(A) A listing of all permits for hazardous waste treatment, storage, and disposal facilities held by the applicant within the last ten (10) years;

(B) A listing of such permits revoked for cause;

(C) A listing of hazardous waste treatment, storage, or disposal facilities owned or operated by the applicant which are currently not in substantial compliance with applicable state or federal regulations or permit requirements as officially determined by a state or federal regulatory agency; and

(D) A description of all criminal and civil penalties assessed against the applicant resulting from violations of state or federal environmental laws within the last five (5) years.

(k) THE APPLICANT SHALL DEMONSTRATE FITNESS TO COMPLY WITH THE ACT AND THESE RULES AND REGULATIONS. The past performance of the applicant, or any partners, executive officers or corporate directors, based on the record before the Director, constitutes evidence that the applicant will comply with provisions of the Act and these rules and regulations and is fit to obtain a permit.

(i) The Director may determine that the applicant is not fit to obtain a permit if the applicant, or any partners, executive officers or corporate directors have:

(A) Misrepresented or concealed any material fact in the permit application;

(B) Obtained a permit from the Director by misrepresentation or concealment of a material fact;

(C) Been convicted of a felony or pleaded guilty to a felony for violations of environmental quality or criminal racketeering laws or regulations within the five (5) years preceding the application for the permit, which in the judgment of the Director constitutes evidence that the applicant cannot be relied upon to conduct the operations described in the application in compliance with the Act and these rules and regulations;

(D) Been adjudicated in contempt of any order of any court enforcing laws of any state or the federal government within five (5) years preceding the application for a permit.

(ii) In determining whether the applicant is fit under Sections 2(j) and 2(k) of this Chapter, the Director shall consider:

(A) The relevance of the offense to the business for which a permit is issued;

(B) The nature and seriousness of the offense;

(C) The circumstances under which the offense occurred;

(D) The date of the offense;

(E) The ownership and management structure in place at the time of the offense;

(F) Evidence of rehabilitation including the applicant's record of implementing corrective action, the applicant's cooperation with governmental entities, implementation of formal policies and procedures to prevent recurrence, and the discharge of individuals or severance of affiliation with parties responsible for the offense.

264.19 (1) CONSTRUCTION QUALITY ASSURANCE PROGRAM.

264.19(a) (i) CQA program.

264.19(a)(1) (A) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile, and landfill units that are required to comply with Sections 10(b)(iii) and (iv), 11(b)(iii) and (iv), and 13(b)(iii) and (iv) of this Chapter. The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

264.19(a)(2) (B) The CQA program must address the following physical components, where applicable:

...(i) (I) Foundations;

...(ii) (II) Dikes;

...(iii) (III) Low-permeability soil liners;

...(iv) (IV) Geomembranes (flexible membrane liners);

...(v) (V) Leachate collection and removal systems and leak detection systems; and

...(vi)_ (VI) Final cover systems.

- 264.19(b) (ii) Written CQA plan. The owner or operator of units subject to the CQA program under Section 2(1)(i) of this Chapter must develop and implement a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:
- 264.19(b)(1) (A) Identification of applicable units, and a description of how they will be constructed.
- 264.19(b)(2) (B) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.
- 264.19(b)(3) (C) A description of inspection and sampling activities for all unit components identified in Section 2(1)(i)(B) of this Chapter, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: Sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under Section (5)(d) of this Chapter.
- 264.19(c) (iii) Contents of program.
- 264.19(c)(1) (A) The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:
- ...(i) (I) Structural stability and integrity of all components of the unit identified in Section 2(1)(i)(B) of this Chapter;
- ...(ii) (II) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;
- ...(iii) (III) Conformity of all materials used with design and other material specifications under Sections 10(b), 11(b), and 13(b) of this Chapter.
- 264.19(c)(2) (B) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of Sections 10(b)(iii)(A)(I)(2.), 11(b)(iii)(A)(I)(2.), and 13(b)(iii)(A)(I)(2.) of this Chapter in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The Director may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of Sections 10(b)(iii)(A)(I)(2.), 11(b)(iii)(A)(I)(2.), and 13(b)(iii)(A)(I)(2.) of this Chapter in

the field.

264.19(d) (iv) Certification. Waste shall not be received in a unit subject to Section 2(1) of this Chapter until the owner or operator has submitted to the Director by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of Section 10(b)(iii) or (iv), Section 11(b)(iii) or (iv), or Section 13(b)(iii) or (iv) of this Chapter ; and the procedure in Chapter 4, Section 1(a)(xii)(B)(II) of these rules and regulations has been completed. Documentation supporting the CQA officer's certification must be furnished to the Director upon request.

264/Subpart C Section 3. PREPAREDNESS AND PREVENTION

264.30 (a) APPLICABILITY. The regulations in this Section apply to owners and operators of all hazardous waste facilities, except as Section 1(a) of this Chapter provides otherwise.

264.31 (b) DESIGN AND OPERATION OF FACILITY. Facilities must be designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

264.32 (c) REQUIRED EQUIPMENT. All facilities must be equipped with the following, unless it can be demonstrated to the Director that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

264.32(a) (i) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

264.32(b) (ii) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams;

264.32(c) (iii) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment; and

264.32(d) (iv) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

[Comment: Chapter 3, Section 2 of these rules and regulations requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

264.33 (d) TESTING AND MAINTENANCE OF EQUIPMENT. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required,

must be tested and maintained as necessary to assure its proper operation in time of emergency.

264.34 (e) ACCESS TO COMMUNICATIONS OR ALARM SYSTEM.

264.34(a) (i) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless the Director has ruled that such a device is not required under Section 3(c) of this Chapter.

264.34(b) (ii) If there is ever just one employee on the premises while the facility is operating, he or she must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless the Director has ruled that such a device is not required under Section 3(c) of this Chapter.

264.35 (f) REQUIRED AISLE SPACE.

(i) The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the Director that aisle space is not needed for any of these purposes.

[Comment: Chapter 3, Section 2 of these rules and regulations requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

264.36 (g) RESERVED.

264.37 (h) ARRANGEMENTS WITH LOCAL AUTHORITIES.

268.37(a) (i) The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his or her facility and the potential need for the services of these organizations:

264.37(a)(1) (A) Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes;

264.37(a)(2) (B) Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

264.37(a)(3) (C) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and

- 264.37(a)(4) (D) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.
- 264.37(b) (ii) Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.
- 264/Subpart D Section 4. CONTINGENCY PLAN AND EMERGENCY PROCEDURES
- 264.50 (a) APPLICABILITY. The regulations in this Section apply to owners and operators of all hazardous waste facilities, except as Section 1(a) of this Chapter provides otherwise.
- 264.51 (b) PURPOSE AND IMPLEMENTATION OF CONTINGENCY PLAN.
- 264.51(a) (i) Each owner or operator must have a contingency plan for his or her facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.
- 264.51(b) (ii) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.
- 264.52 (c) CONTENT OF CONTINGENCY PLAN.
- 264.52(a) (i) The contingency plan must describe the actions facility personnel must take to comply with Sections 4(b) and 4(g) of this Chapter in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.
- 264.52(b) (ii) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR part 112, or 40 CFR part 1510, or some other emergency or contingency plan, he or she need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this Chapter and Chapter 5 of these rules and regulations.
- 264.52(c) (iii) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to Section 3(h) of this Chapter.
- 264.52(d) (iv) The plan must list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see Section 4(f) of this Chapter), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the Director at the time of certification, rather than at the time

of permit application.

- 264.52(e) (v) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.
- 264.52(f) (vi) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).
- 264.53 (d) COPIES OF CONTINGENCY PLAN. A copy of the contingency plan and all revisions to the plan must be:
- 264.53(a) (i) Maintained at the facility; and
- 264.53(b) (ii) Submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.
- [Comment: The contingency plan must be submitted to the Director with part B of the permit application under Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulations and, after modification or approval, will become a condition of any permit issued.]
- 264.54 (e) AMENDMENT OF CONTINGENCY PLAN. The contingency plan must be reviewed, and immediately amended, if necessary, whenever:
- 264.54(a) (i) The facility permit is revised;
- 264.54(b) (ii) The plan fails in an emergency;
- 264.54(c) (iii) The facility changes -- in its design, construction, operation, maintenance, or other circumstances -- in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- 264.54(d) (iv) The list of emergency coordinators changes; or
- 264.54(e) (v) The list of emergency equipment changes.
- 264.55 (f) EMERGENCY COORDINATOR. At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this

person must have the authority to commit the resources needed to carry out the contingency plan.

[Comment: The emergency coordinator's responsibilities are more fully spelled out in Section 4(g) of this Chapter. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.]

- 264.56 (g) EMERGENCY PROCEDURES.
- 264.56(a) (i) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his or her designee when the emergency coordinator is on call) must immediately:
- 264.56(a)(1) (A) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and
- (B) Notify appropriate State or local agencies with designated response roles if their help is needed.
- 264.56(b) (ii) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. The coordinator may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.
- 264.56(c) (iii) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).
- 264.56(d) (iv) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, the coordinator must report his or her findings as follows:
- 264.56(d)(1) (A) If the environmental coordinator's assessment indicates that evacuation of local areas may be advisable, the coordinator must immediately notify appropriate local authorities. The coordinator must be available to help appropriate officials decide whether local areas should be evacuated; and
- 264.56(d)(2) (B) The coordinator must immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional contingency plan under 40 CFR part 1510) or the National Response Center (using their 24-hour toll free number 800/424-8802). **The Department of Environmental Quality must also be notified immediately, using its 24 hour telephone number 307/777-7781.** The report must include:
- ...(i) (I) Name and telephone number of reporter;

- ...(ii) (II) Name and address of facility;
 - ...(iii) (III) Time and type of incident (e.g., release, fire);
 - ...(iv) (IV) Name and quantity of material(s) involved, to the extent known;
 - ...(v) (V) The extent of injuries, if any; and
 - ...(vi) (VI) The possible hazards to human health, or the environment, outside the facility.
- 264.56(e) (v) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.
- 264.56(f) (vi) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.
- 264.56(g) (vii) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.
- [Comment: Unless the owner or operator can demonstrate, in accordance with Chapter 2, Section 1(c)(iii) or 1(c)(iv) of these rules and regulations, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Chapters 5, 8, 9, and 10 of these rules and regulations.]
- 264.56(h) (viii) The emergency coordinator must ensure that, in the affected area(s) of the facility:
- 264.56(h)(1) (A) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and
 - 264.56(h)(2) (B) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.
- 264.56(i) (ix) The owner or operator must notify the Director, and appropriate State and local authorities, that the facility is in compliance with Section 4(g)(viii) of this Chapter before operations are resumed in the affected area(s) of the facility.
- 264.56(j) (x) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he or she must submit a written report on the incident to

the Director. The report must include:

- 264.56(j)(1) (A) Name, address, and telephone number of the owner or operator;
- 264.56(j)(2) (B) Name, address, and telephone number of the facility;
- 264.56(j)(3) (C) Date, time, and type of incident (e.g., fire, explosion);
- 264.56(j)(4) (D) Name and quantity of material(s) involved;
- 264.56(j)(5) (E) The extent of injuries, if any;
- 264.56(j)(6) (F) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
- 264.56(j)(7) (G) Estimated quantity and disposition of recovered material that resulted from the incident.

264/Subpart E Section 5. MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING

264.70 (a) APPLICABILITY. The regulations in this Section apply to owners and operators of both on-site and off-site facilities, except as Section 1(a) of this Chapter provides otherwise. Sections 5(b), 5(c), and 5(g) of this Chapter do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources, and to owners and operators of off-site facilities with respect to waste military munitions exempted from manifest requirements under Chapter 12, Section 19(d)(i) of these rules and regulations. Section 5(d)(ii) of this Chapter only applies to permittees who treat, store, or dispose of hazardous wastes on-site where such wastes were generated.

264.71 (b) USE OF MANIFEST SYSTEM.

264.71(a) (i) If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his or her agent, must:

264.71(a)(1) (A) Sign and date each copy of the manifest to certify that the hazardous waste covered by the manifest was received;

264.71(a)(2) (B) Note any significant discrepancies in the manifest (as defined in Section 5(c)(i) of this Chapter) on each copy of the manifest;

[Comment: The Department does not intend that the owner or operator of a facility whose procedures under Section 2(d)(iii) of this Chapter include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Section 5(c)(ii) of this Chapter, however, requires reporting an unreconciled discrepancy discovered during later analysis.]

264.71(a)(3) (C) Immediately give the transporter at least one copy of the signed manifest;

264.71(a)(4) (D) Within 30 days after the delivery, send a copy of the manifest to the generator; and

264.71(a)(5) (E) Retain at the facility a copy of each manifest for at least three years from the date of delivery.

264.71(b) (ii) If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the EPA identification numbers, generator's certification, and signatures), the owner or operator, or his or her agent, must:

264.71(b)(1) (A) Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received;

264.71(b)(2) (B) Note any significant discrepancies (as defined in Section 5(c)(i) of this Chapter) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper.

[Comment: The Department does not intend that the owner or operator of a facility whose procedures under Section 2(d)(iii) of this Chapter include waste analysis must perform that analysis before signing the shipping paper and giving it to the transporter. Section 5(c)(ii) of this Chapter, however, requires reporting an unreconciled discrepancy discovered during later analysis.]

264.71(b)(3) (C) Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received);

264.71(b)(4) (D) Within 30 days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within 30 days after delivery, the owner or operator, or his or her agent, must send a copy of the shipping paper signed and dated to the generator; and

[Comment: Chapter 8, Section 2(d)(iii) of these rules and regulations requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).]

264.71(b)(5) (E) Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least three years from the date of delivery.

264.71(c) (iii) Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the requirements of Chapter 8 of these rules and regulations.

[Comment: The provisions of Chapter 8, Section 3(e) of these rules and regulations are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of Chapter

8, Section 3(e) of these rules and regulations only apply to owners or operators who are shipping hazardous waste which they generated at that facility.]

264.71(d) (iv) Within three working days of the receipt of a shipment subject to subpart H of 40 CFR part 262 (see Chapter 8, Section § 1(a)(iv) of these rules and regulations), the owner or operator of the facility must provide a copy of the tracking document bearing all required signatures to the notifier, to the Office of Enforcement and Compliance Assurance, Office of Compliance, Enforcement Planning, Targeting and Data Division (2222A), Environmental Protection Agency, 401 M Street, SW., Washington, DC 20406, and to competent authorities of all other concerned countries. The original copy of the tracking document must be maintained at the facility for at least three years from the date of signature.

264.72 (c) MANIFEST DISCREPANCIES.

264.72(a) (i) Manifest discrepancies are differences between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity or type of hazardous waste a facility actually receives.

264.72(a)(1) & (2) (A) Significant discrepancies in quantity are: For bulk waste, variations greater than 10 percent in weight, and for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload.

264.72(a)(2) (B) Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

264.72(b) (ii) Upon discovering a significant discrepancy, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator must immediately submit to the Director a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

264.73 (d) OPERATING RECORD.

264.73(a) (i) The owner or operator must keep a written operating record at his or her facility.

264.73(b) (ii) The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

264.73(b)(1) (A) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by Appendix A of this Chapter;

264.73(b)(2) (B) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must

be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;

[Comment: See Section 7(j) of this Chapter for related requirements.]

- 264.73(b)(3) (C) Records and results of waste analyses and waste determinations performed as specified in Sections 2(d), 2(h), 13(o), 14(b), 26(e), 27(n), and 28(d) ~~264.1093~~ of this Chapter and Chapter 13, Sections 1(d)(i) and 1(g) of these rules and regulations.
- 264.73(b)(4) (D) Summary reports and details of all incidents that require implementing the contingency plan as specified in Section 4(g)(x) of this Chapter;
- 264.73(b)(5) (E) Records and results of inspections as required by Section 2(f)(iv) of this Chapter (except these data need be kept only three years);
- 264.73(b)(6) (F) Monitoring, testing or analytical data, and corrective action where required by Section 6 of this Chapter and Sections 2(l), 9(b), 9(d), 9(f), 10(c), 10(d), 10(g), 11(c)-(e), 12(g), 12(i), 12(k), 13(c)-(e), 13(j), 14(h), 23(c), 26(e)(iii)-(vi), 26(f), 27(n)(iv)-(ix), and 27(o) and Section 28(c) through (k) ~~(j) 264.1082 through 264.1091~~ of this Chapter.
- 264.73(b)(7) (G) For off-site facilities, notices to generators as specified in Section 2(c)(ii) of this Chapter; and
- 264.73(b)(8) (H) All closure cost estimates under Chapter 5, Section 1(c) of these rules and regulations, and, for disposal facilities, all post-closure cost estimates under Chapter 5, Section 1(c) of these rules and regulations.
- 264.73(b)(9) (I) A certification by the permittee no less often than annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that the permittee generates to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage or disposal which is the most practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.
- 264.73(b)(10) (J) Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to Chapter 13, Section 1(e) of these rules and regulations, a petition pursuant to Chapter 13, Section 1(f) of these rules and regulations, or a certification under Chapter 13, Section 1(h) of these rules and regulations, and the applicable notice required by a generator under Chapter 13, Section 1(g)(i) of these rules and regulations;
- 264.73(b)(11) (K) For an off-site treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under

Chapter 13, Section 1(g) or Section 1(h) of these rules and regulations;

- 264.73(b)(12) (L) For an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under Chapter 13, Section 1(g) or Section 1(h) of these rules and regulations;
- 264.73(b)(13) (M) For an off-site land disposal facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Chapter 13, Section 1(g) and Section 1(h) of these rules and regulations, whichever is applicable; and
- 264.73(b)(14) (N) For an on-site land disposal facility, the information contained in the notice required by the generator or owner or operator of a treatment facility under Chapter 13, Section 1(g) of these rules and regulations, except for the manifest number, and the certification and demonstration if applicable, required under Chapter 13, Section 1(h) of these rules and regulations, whichever is applicable.
- 264.73(b)(15) (O) For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under Chapter 13, Section 1(g) or Section 1(h) of these rules and regulations; and
- 264.73(b)(16) (P) For an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under Chapter 13, Section 1(g) or Section 1(h) of these rules and regulations.

264.73(b)(17) (Q) **Reserved** ^.

- 264.74 (e) AVAILABILITY, RETENTION, AND DISPOSITION OF RECORDS.
- 264.74(a) (i) All records, including plans, required under this Chapter and Chapter 5 of these rules and regulations must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of the DEQ who is duly designated by the Director.
- 264.74(b) (ii) The retention period for all records required under this Chapter and Chapter 5 of these rules and regulations is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Director.
- 264.74(c) (iii) A copy of records of waste disposal locations and quantities under Section 5(d)(ii)(B) of this Chapter must be submitted to the Director and local land authority upon closure of the facility.
- 264.75 (f) BIENNIAL REPORT. The owner or operator must prepare and submit a single copy of a biennial report to the Director by March 1 of each even numbered year. The biennial report must be submitted on EPA form 8700-13B. The report must cover facility activities during

the previous calendar year and must include:

- 264.75(a) (i) The EPA identification number, name, and address of the facility;
- 264.75(b) (ii) The calendar year covered by the report;
- 264.75(c) (iii) For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;
- 264.75(d) (iv) A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by EPA identification number of each generator;
- 264.75(e) (v) The method of treatment, storage, or disposal for each hazardous waste;
- 264.75(f) (vi) Reserved.
- 264.75(g) (vii) The most recent closure cost estimate under Chapter 5, Section 1(c) of these rules and regulations, and, for disposal facilities, the most recent post-closure cost estimate under Chapter 5, Section 1(c) of these rules and regulations; and
- 264.75(h) (viii) For generators who treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.
- 264.75(i) (ix) For generators who treat, store, or dispose of hazardous waste on-site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.
- 264.75(j) (x) The certification signed by the owner or operator of the facility or his or her authorized representative.
- 264.76 (g) UNMANIFESTED WASTE REPORT. If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described in Chapter 9, Section 2(a)(v)(B) of these rules and regulations, and if the waste is not excluded from the manifest requirement by Chapter 2, Section 1(e) of these rules and regulations, then the owner or operator must prepare and submit a single copy of a report to the Director within fifteen days after receiving the waste. The unmanifested waste report must be submitted on EPA form 8700-13B. Such report must be designated 'Unmanifested Waste Report' and include the following information:
 - 264.76(a) (i) The EPA identification number, name, and address of the facility;
 - 264.76(b) (ii) The date the facility received the waste;
 - 264.76(c) (iii) The EPA identification number, name, and address

of the generator and the transporter, if available;

- 264.76(d) (iv) A description and the quantity of each unmanifested hazardous waste and facility received;
- 264.76(e) (v) The method of treatment, storage, or disposal for each hazardous waste;
- 264.76(f) (vi) The certification signed by the owner or operator of the facility or his or her authorized representative; and
- 264.76(g) (vii) A brief explanation of why the waste was unmanifested, if known.

[Comment: Small quantities of hazardous waste are excluded from regulation under this Chapter and Chapter 5 of these rules and regulations and do not require a manifest. Where a facility receives unmanifested hazardous wastes, the DEQ suggests that the owner or operator obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the DEQ suggests that the owner or operator file an unmanifested waste report for the hazardous waste movement.]

- 264.77 (h) ADDITIONAL REPORTS. In addition to submitting the biennial reports and unmanifested waste reports described in Sections 5(f) and 5(g) of this Chapter, the owner or operator must also report to the Director:
- 264.77(a) (i) Releases, fires, and explosions as specified in Section 4(g)(x) of this Chapter;
- 264.77(b) (ii) Facility closures specified in Section 7(f) of this Chapter; and
- 264.77(c) (iii) As otherwise required by Sections 6, 10 through 13, 26, 27, and 28 of this Chapter.

264/Subpart F Section 6. RELEASES FROM WASTE MATERIAL MANAGEMENT UNITS

264.90 (a) APPLICABILITY.

264.90(a)(1) (i) Except as provided in Section 6(a)(ii) of this Chapter, the regulations in this Section apply to:

264.90(a)(1) (A) Owners or operators of facilities that treat, store or dispose of hazardous waste. The owner or operator must satisfy the requirements identified in Section 6(a)(i)(B) of this Chapter for all wastes (or constituents thereof) contained in waste material management units at the facility, regardless of the time at which waste was placed in such units.

264.90(a)(2) (B) All waste material management units must comply with the requirements in Section 6(1) of this Chapter. A surface impoundment, waste pile, and land treatment unit or landfill that receives hazardous waste after July 26, 1982 (hereinafter referred to as a "regulated unit") must comply with the requirements of Sections 6(b) through 6(k) in this Chapter in lieu of Section 6(1) in this Chapter for purposes of detecting, characterizing and responding to releases to the uppermost aquifer. The financial

responsibility requirements of Section 6(1) of this Chapter apply to regulated units.

- 264.90(b) (ii) The owner or operator's regulated unit(s) are not subject to regulation for releases into the uppermost aquifer under this Section if:
- 264.90(b)(1) (A) The owner or operator is exempted under Section 1(a) of this Chapter; or
- 264.90(b)(2) (B) He or she operates a unit which the Director finds:
- ...(i) (I) Is an engineered structure,
 - ...(ii) (II) Does not receive or contain liquid waste or waste containing free liquids,
 - ...(iii) (III) Is designed and operated to exclude liquid, precipitation, and other run-on and run-off,
 - ...(iv) (IV) Has both inner and outer layers of containment enclosing the waste,
 - ...(v) (V) Has a leak detection system built into each containment layer,
 - ...(vi) (VI) The owner or operator will provide continuing operation and maintenance of these leak detection systems during the active life of the unit and the closure and post-closure care periods, and
 - ...(vii) (VII) To a reasonable degree of certainty, will not allow hazardous constituents to migrate beyond the outer containment layer prior to the end of the post-closure care period.
- 264.90(b)(3) (C) The Director finds, pursuant to Section 12(k)(iv) of this Chapter, that the treatment zone of a land treatment unit that qualifies as a regulated unit does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of Section 12(i) of this Chapter has not shown a statistically significant increase in hazardous constituents below the treatment zone during the operating life of the unit. An exemption under Section 6(a)(ii) of this Chapter can only relieve an owner or operator of responsibility to meet the requirements of this Section during the post-closure care period; or
- 264.90(b)(4) (D) The Director finds that there is no potential for migration of liquid from a regulated unit to the uppermost aquifer during the active life of the regulated unit (including the closure period) and the post-closure care period specified under Section 7(h) of this Chapter. This demonstration must be certified by a professional geologist or geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator must base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration.

- 264.90(b)(5) (E) He or she designs and operates a pile in compliance with Section 11(a)(iii) of this Chapter.
- 264.90(c) (iii) The regulations under Section 6 of this Chapter apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in Section 6:
- 264.90(c)(1) (A) Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;
- 264.90(c)(2) (B) Apply during the post-closure care period under Section 7(h) of this Chapter if the owner or operator is conducting a detection monitoring program under Section 6(i) of this Chapter; or
- 264.90(c)(3) (C) Apply during the compliance period under Section 6(g) of this Chapter if the owner or operator is conducting a compliance monitoring program under Section 6(j) of this Chapter or a corrective action program under Section 6(k) of this Chapter.
- 264.90(d) (iv) Regulations in Section 6 of this Chapter may apply to miscellaneous units when necessary to comply with Sections 23(b) through 23(d) of this Chapter.
- 264.90(e) (v) The regulations of this Section apply to all owners and operators subject to the requirements of Chapter 1, Section 1(h)(iii)(G) of these rules and regulations, when the Department issues either a post-closure permit or an enforceable document (as defined in Chapter 1, Section 1(f)(i)) of these rules and regulations at the facility. When the Department issues an enforceable document, references in Section 6 of this Chapter to "in the permit" mean "in the enforceable document."
- 264.90(f) (vi) The Director may replace all or part of the requirements of Sections 6(b) through (k) of this Chapter applying to a regulated unit with alternative requirements for groundwater monitoring and corrective action for releases to groundwater set out in the permit (or in an enforceable document) (as defined in Chapter 1, Section 1(f)(i)) of these rules and regulations where the Director determines that:
- 264.90(f)(1) (A) The regulated unit is situated among waste material management units (or areas of concern), a release has occurred, and both the regulated unit and one or more waste material management unit(s) (or areas of concern) are likely to have contributed to the release; and
- 264.90(f)(2) (B) It is not necessary to apply the groundwater monitoring and corrective action requirements of Sections 6(b) through (k) of this Chapter because alternative requirements will protect human health and the environment.
- 264.91 (b) REQUIRED PROGRAMS.
- 264.91(a) (i) Owners and operators subject to Section 6 of this Chapter must conduct a monitoring and response program as follows:

- 264.91(a)(1) (A) Whenever hazardous constituents under Section 6(d) of this Chapter from a regulated unit are detected at a compliance point under Section 6(f) of this Chapter, the owner or operator must institute a compliance monitoring program under Section 6(j) of this Chapter. Detected is defined as statistically significant evidence of contamination as described in Section 6(i)(vi) of this Chapter;
- 264.91(a)(2) (B) Whenever the ground-water protection standard under Section 6(c) of this Chapter is exceeded, the owner or operator must institute a corrective action program under Section 6(k) of this Chapter. Exceeded is defined as statistically significant evidence of increased contamination as described in Section 6(j)(iv) of this Chapter;
- 264.91(a)(3) (C) Whenever hazardous constituents under Section 6(d) of this Chapter from a regulated unit exceed concentration limits under Section 6(e) of this Chapter in ground water between the compliance point under Section 6(f) of this Chapter and the downgradient facility property boundary, the owner or operator must institute a corrective action program under Section 6(k) of this Chapter; or
- 264.91(a)(4) (D) In all other cases, the owner or operator must institute a detection monitoring program under Section 6(i) of this Chapter.
- 264.91(b) (ii) The Director will specify in the facility permit the specific elements of the monitoring and response program. The Director may include one or more of the programs identified in Section 6(b)(i) of this Chapter in the facility permit as may be necessary to protect human health and the environment and will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Director will consider the potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.
- 264.92 (c) GROUND-WATER PROTECTION STANDARD.
- (i) The owner or operator must comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents under Section 6(d) of this Chapter detected in the ground water from a regulated unit do not exceed the concentration limits under Section 6(e) of this Chapter in the uppermost aquifer underlying the waste management area beyond the point of compliance under Section 6(f) of this Chapter during the compliance period under Section 6(g) of this Chapter. The Director will establish this ground-water protection standard in the facility permit when hazardous constituents have been detected in the ground water.
- 264.93 (d) HAZARDOUS CONSTITUENTS.
- 264.93(a) (i) The Director will specify in the facility permit the hazardous constituents to which the ground-water protection

standard of Section 6(c) of this Chapter applies. Hazardous constituents are constituents identified in Appendix H of Chapter 2 of these rules and regulations that have been detected in ground water in the uppermost aquifer underlying a regulated unit and that are reasonably expected to be in or derived from waste contained in a regulated unit, unless the Director has excluded them under Section 6(d)(ii) of this Chapter.

264.93(b) (ii) The Director will exclude a Chapter 2, Appendix H constituent from the list of hazardous constituents specified in the facility permit if he or she finds that the constituent is not capable of posing a substantial present or potential hazard to human health or the environment. In deciding whether to grant an exemption, the Director will consider the following:

264.93(b)(1) (A) Potential adverse effects on ground-water quality, considering:

- ...(i) (I) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;
- ...(ii) (II) The hydrogeological characteristics of the facility and surrounding land;
- ...(iii) (III) The quantity of ground water and the direction of ground-water flow;
- ...(iv) (IV) The proximity and withdrawal rates of ground-water users;
- ...(v) (V) The current and future uses of ground water in the area;
- ...(vi) (VI) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;
- ...(vii) (VII) The potential for health risks caused by human exposure to waste constituents;
- ...(viii) (VIII) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;
- ...(ix) (IX) The persistence and permanence of the potential adverse effects; and

264.93(b)(2) (B) Potential adverse effects on hydraulically-connected surface water quality, considering:

- ...(i) (I) The volume and physical and chemical characteristics of the waste in the regulated unit;
- ...(ii) (II) The hydrogeological characteristics of the facility and surrounding land;
- ...(iii) (III) The quantity and quality of ground water, and the direction of ground-water flow;

- ...(iv) (IV) The patterns of rainfall in the region;
 - ...(v) (V) The proximity of the regulated unit to surface waters;
 - ...(vi) (VI) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;
 - ...(vii) (VII) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality;
 - ...(viii) (VIII) The potential for health risks caused by human exposure to waste constituents;
 - ...(ix) (IX) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and
 - ...(x) (X) The persistence and permanence of the potential adverse effects.
- 264.93(c) (iii) In making any determination under Section 6(d)(ii) of this Chapter about the use of ground water in the area around the facility, the Director will consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.8.
- 264.94 (e) CONCENTRATION LIMITS.
- 264.94(a) (i) The Director will specify in the facility permit concentration limits in the ground water for hazardous constituents established under Section 6(d) of this Chapter. The concentration of a hazardous constituent:
- 264.94(a)(1) (A) Must not exceed the background level of that constituent in the ground water at the time that limit is specified in the permit; or
- 264.94(a)(2) (B) For any of the constituents listed in Table 1, must not exceed the respective value given in that table if the background level of the constituent is below the value given in Table 1; or

Table 1 -- Maximum Concentration of Constituents for Ground-water Protection

Constituent	Maximum concentration ¹
Arsenic	0.05
Barium	1.0
Cadmium	0.01
Chromium	0.05
Lead	0.05

Mercury	0.002
Selenium	0.01
Silver	0.05
Endrin (1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,9a-octahydro-1,4-endo, endo-5,8-dimethano naphthalene)	0.0002
Lindane (1,2,3,4,5,6-hexachlorocyclohexane, gamma isomer)	0.004
Methoxychlor (1,1,1-Trichloro-2,2-bis (p-methoxyphenylethane)	0.1
Toxaphene (C ₁₀ H ₁₀ Cl ₆ , Technical chlorinated camphene, 67-69 percent chlorine)	0.005
2,4-D (2,4-Dichlorophenoxyacetic acid)	0.1
2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)	0.01

FOOTNOTE: ¹Milligrams per liter.

264.94(a)(3) (C) Must not exceed an alternate limit established by the Director under Section 6(e)(ii) of this Chapter.

264.94(b) (ii) The Director will establish an alternate concentration limit for a hazardous constituent if he or she finds that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the alternate concentration limit is not exceeded. In establishing alternate concentration limits, the Director will consider the following factors:

264.94(b)(1) (A) Potential adverse effects on ground-water quality, considering:

- ...(i) (I) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;
- ...(ii) (II) The hydrogeological characteristics of the facility and surrounding land;
- ...(iii) (III) The quantity of ground water and the direction of ground-water flow;
- ...(iv) (IV) The proximity and withdrawal rates of ground-water users;
- ...(v) (V) The current and future uses of ground water in the area;
- ...(vi) (VI) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

- ...(vii) (VII) The potential for health risks caused by human exposure to waste constituents;
- ...(viii) (VIII)The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;
- ...(ix) (IX) The persistence and permanence of the potential adverse effects; and
- 264.94(b)(2) (B) Potential adverse effects on hydraulically-connected surface-water quality, considering:
 - ...(i) (I) The volume and physical and chemical characteristics of the waste in the regulated unit;
 - ...(ii) (II) The hydrogeological characteristics of the facility and surrounding land;
 - ...(iii) (III) The quantity and quality of ground water, and the direction of ground-water flow;
 - ...(iv) (IV) The patterns of rainfall in the region;
 - ...(v) (V) The proximity of the regulated unit to surface waters;
 - ...(vi) (VI) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;
 - ...(vii) (VII) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;
 - ...(viii) (VIII)The potential for health risks caused by human exposure to waste constituents;
 - ...(ix) (IX) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and
 - ...(x) (X) The persistence and permanence of the potential adverse effects.
- 264.94(c) (iii) In making any determination under Section (e)(ii) of this Chapter about the use of ground water in the area around the facility the Director will consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.8.
- 264.95 (f) POINT OF COMPLIANCE.
- 264.95(a) (i) The Director will specify in the facility permit the point of compliance at which the ground-water protection standard of Section 6(c) of this Chapter applies and at which monitoring must be conducted. The point of compliance is a vertical

surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.

- 264.95(b) (ii) The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.
- 264.95(b)(1) (A) The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.
- 264.95(b)(2) (B) If the facility contains more than one regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.
- 264.96 (g) COMPLIANCE PERIOD.
- 264.96(a) (i) The Director will specify in the facility permit the compliance period during which the ground-water protection standard of Section 6(c) of this Chapter applies. The compliance period is the number of years equal to the active life of the waste management area (including any waste management activity prior to permitting, and the closure period.)
- 264.96(b) (ii) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of Section 6(j) of this Chapter.
- 264.96(c) (iii) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in Section 6(g)(i) of this Chapter, the compliance period is extended until the owner or operator can demonstrate that the ground-water protection standard of Section 6(c) of this Chapter has not been exceeded for a period of three consecutive years.
- 264.97 (h) GENERAL GROUND-WATER MONITORING REQUIREMENTS. The owner or operator must comply with the following requirements for any ground-water monitoring program developed to satisfy Sections 6(i), 6(j), or 6(k) of this Chapter:
- 264.97(a) (i) The ground-water monitoring system must consist of a sufficient number of wells, installed at appropriate locations and depths to yield ground-water samples from the uppermost aquifer that:
- 264.97(a)(1) (A) Represent the quality of background water that has not been affected by leakage from a regulated unit;
- ...(i) (I) A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:
- ...(i)(A) (1.) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; and
- ...(i)(B) (2.) Sampling at other wells will provide an indication of background ground-water quality that is

representative or more representative than that provided by the upgradient wells; and

- 264.97(a)(2) (B) Represent the quality of ground water passing the point of compliance.
- 264.97(a)(3) (C) Allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the uppermost aquifer.
- 264.97(b) (ii) If a facility contains more than one regulated unit, separate ground-water monitoring systems are not required for each regulated unit provided that provisions for sampling the ground water in the uppermost aquifer will enable detection and measurement at the compliance point of hazardous constituents from the regulated units that have entered the ground water in the uppermost aquifer.
- 264.97(c) (iii) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring-well bore hole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of ground-water samples. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the ground water.
- 264.97(d) (iv) The ground-water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of ground-water quality below the waste management area. At a minimum the program must include procedures and techniques for:
- 264.97(d)(1) (A) Sample collection;
- 264.97(d)(2) (B) Sample preservation and shipment;
- 264.97(d)(3) (C) Analytical procedures; and
- 264.97(d)(4) (D) Chain of custody control.
- 264.97(e) (v) The ground-water monitoring program must include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents in ground-water samples.
- 264.97(f) (vi) The ground-water monitoring program must include a determination of the ground-water surface elevation each time ground water is sampled.
- 264.97(g) (vii) In detection monitoring or where appropriate in compliance monitoring, data on each hazardous constituent specified in the permit will be collected from background wells and wells at the compliance point(s). The number and kinds of samples collected to establish background shall be appropriate for the form of statistical test employed, following generally accepted statistical principles. The sample size shall be as large as necessary to ensure with reasonable confidence that a contaminant release to ground water from a facility will be detected. The owner or operator will determine an appropriate sampling procedure and interval for each hazardous constituent listed in the facility permit which shall be

specified in the unit permit upon approval by the Director. This sampling procedure shall be:

- 264.97(g)(1) (A) A sequence of at least four samples, taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained, by reference to the uppermost aquifer's effective porosity, hydraulic conductivity, and hydraulic gradient, and the fate and transport characteristics of the potential contaminants, or
- 264.97(g)(2) (B) an alternate sampling procedure proposed by the owner or operator and approved by the Director.
- 264.97(h) (viii) The owner or operator will specify one of the following statistical methods to be used in evaluating ground-water monitoring data for each hazardous constituent which, upon approval by the Director, will be specified in the unit permit. The statistical test chosen shall be conducted separately for each hazardous constituent in each well. Where practical quantification limits (pql's) are used in any of the following statistical procedures to comply with Section 6(h)(ix)(E) of this Chapter, the pql must be proposed by the owner or operator and approved by the Director. Use of any of the following statistical methods must be protective of human health and the environment and must comply with the performance standards outlined in Section 6(h)(ix) of this Chapter.
- 264.97(h)(1) (A) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.
- 264.97(h)(2) (B) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.
- 264.97(h)(3) (C) A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.
- 264.97(h)(4) (D) A control chart approach that gives control limits for each constituent.
- 264.97(h)(5) (E) Another statistical test method submitted by the owner or operator and approved by the Director.
- 264.97(i) (ix) Any statistical method chosen under Section 6(h)(viii) of this Chapter for specification in the unit permit shall comply with the following performance standards, as appropriate:
- 264.97(i)(1) (A) The statistical method used to

evaluate ground-water monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.

264.97(i)(2) (B) If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a ground-water protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experimentwise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts.

264.97(i)(3) (C) If a control chart approach is used to evaluate ground-water monitoring data, the specific type of control chart and its associated parameter values shall be proposed by the owner or operator and approved by the Director if he or she finds it to be protective of human health and the environment.

264.97(i)(4) (D) If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be proposed by the owner or operator and approved by the Director if he or she finds these parameters to be protective of human health and the environment. These parameters will be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

264.97(i)(5) (E) The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantification limit (pql) approved by the Director under Section 6(h)(viii) of this Chapter that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

264.97(i)(6) (F) If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

264.97(j) (x) Ground-water monitoring data collected in accordance with Section 6(h)(vii) of this Chapter including actual levels of constituents must be maintained in the facility operating record. The Director will specify in the permit when the data must be submitted for review.

264.98 (i) DETECTION MONITORING PROGRAM. An owner or operator

required to establish a detection monitoring program under Section 6 of this Chapter must, at a minimum, discharge the following responsibilities:

- 264.98(a) (i) The owner or operator must monitor for indicator parameters (e.g., specific conductance, total organic carbon, or total organic halogen), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in ground water. The Director will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:
- 264.98(a)(1) (A) The types, quantities, and concentrations of constituents in wastes managed at the regulated unit;
- 264.98(a)(2) (B) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;
- 264.98(a)(3) (C) The detectability of indicator parameters, waste constituents, and reaction products in ground water; and
- 264.98(a)(4) (D) The concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the ground-water background.
- 264.98(b) (ii) The owner or operator must install a ground-water monitoring system at the compliance point as specified under Section 6(f) of this Chapter. The ground-water monitoring system must comply with Sections 6(h)(i)(B), 6(h)(ii), and 6(h)(iii) of this Chapter.
- 264.98(c) (iii) The owner or operator must conduct a ground-water monitoring program for each chemical parameter and hazardous constituent specified in the permit pursuant to Section 6(i)(i) of this Chapter in accordance with Section 6(h)(vii) of this Chapter. The owner or operator must maintain a record of ground-water analytical data as measured and in a form necessary for the determination of statistical significance under Section 6(h)(viii) of this Chapter.
- 264.98(d) (iv) The Director will specify the frequencies for collecting samples and conducting statistical tests to determine whether there is statistically significant evidence of contamination for any parameter or hazardous constituent specified in the permit under Section 6(i)(i) of this Chapter in accordance with Section 6(h)(vii) of this Chapter. A sequence of at least four samples from each well (background and compliance wells) must be collected at least semi-annually during detection monitoring.
- 264.98(e) (v) The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.
- 264.98(f) (vi) The owner or operator must determine whether there is statistically significant evidence of contamination for any chemical parameter or hazardous constituent specified in the permit pursuant to Section 6(i)(i) of this Chapter at a frequency specified under Section 6(i)(iv) of this Chapter.

- 264.98(f)(1) (A) In determining whether statistically significant evidence of contamination exists, the owner or operator must use the method(s) specified in the permit under Section 6(h)(viii) of this Chapter. These method(s) must compare data collected at the compliance point(s) to the background ground-water quality data.
- 264.98(f)(2) (B) The owner or operator must determine whether there is statistically significant evidence of contamination at each monitoring well at the compliance point within a reasonable period of time after completion of sampling. The Director will specify in the facility permit what period of time is reasonable, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.
- 264.98(g) (vii) If the owner or operator determines pursuant to Section 6(i)(vi) of this Chapter that there is statistically significant evidence of contamination for chemical parameters or hazardous constituents specified pursuant to Section 6(i)(i) of this Chapter at any monitoring well at the compliance point, he or she must:
- 264.98(g)(1) (A) Notify the Director of this finding in writing within seven days. The notification must indicate what chemical parameters or hazardous constituents have shown statistically significant evidence of contamination;
- 264.98(g)(2) (B) Immediately sample the ground water in all monitoring wells and determine whether constituents in the list of Appendix I of this Chapter are present, and if so, in what concentration.
- 264.98(g)(3) (C) For any Appendix I of this Chapter compounds found in the analysis pursuant to Section 6(i)(vii)(B) of this Chapter, the owner or operator may resample within one month and repeat the analysis for those compounds detected. If the results of the second analysis confirm the initial results, then these constituents will form the basis for compliance monitoring. If the owner or operator does not resample for the compounds found pursuant to Section 6(i)(vii)(B) of this Chapter, the hazardous constituents found during this initial Appendix I analysis will form the basis for compliance monitoring.
- 264.98(g)(4) (D) Within 90 days, submit to the Director an application for a permit modification to establish a compliance monitoring program meeting the requirements of Section 6(j) of this Chapter. The application must include the following information:
- ...(i) (I) An identification of the concentration or any Appendix I of this Chapter constituent detected in the ground water at each monitoring well at the compliance point;
- ...(ii) (II) Any proposed changes to the ground-water monitoring system at the facility necessary to meet the requirements of Section 6(j) of this Chapter;
- ...(iii) (III) Any proposed additions or changes to the monitoring frequency, sampling and analysis procedures or

methods, or statistical methods used at the facility necessary to meet the requirements of Section 6(j) of this Chapter;

...(iv) (IV) For each hazardous constituent detected at the compliance point, a proposed concentration limit under Section 6(e)(i)(A) or (B) of this Chapter, or a notice of intent to seek an alternate concentration limit under Section 6(e)(ii) of this Chapter; and

264.98(g)(5) (E) Within 180 days, submit to the Director:

...(i) (I) All data necessary to justify an alternate concentration limit sought under Section 6(e)(ii) of this Chapter; and

...(ii) (II) An engineering feasibility plan for a corrective action program necessary to meet the requirement of Section 6(k) of this Chapter, unless:

...(ii)(A) (1.) All hazardous constituents identified under Section 6(i)(vii)(B) of this Chapter are listed in Table 1 of Section 6(e) of this Chapter and their concentrations do not exceed the respective values given in that Table; or

...(ii)(B) (2.) The owner or operator has sought an alternate concentration limit under Section 6(e)(ii) of this Chapter for every hazardous constituent identified under Section 6(i)(vii)(B) of this Chapter.

264.98(g)(6) (F) If the owner or operator determines, pursuant to Section 6(i)(vi) of this Chapter, that there is a statistically significant difference for chemical parameters or hazardous constituents specified pursuant to Section 6(i)(i) of this Chapter at any monitoring well at the compliance point, he or she may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. The owner operator may make a demonstration under Section 6(i)(vii) of this Chapter in addition to, or in lieu of, submitting a permit modification application under Section 6(i)(vii)(D) of this Chapter; however, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in Section 6(i)(vii)(D) of this Chapter unless the demonstration made under this Section 6(i)(vii) of this Chapter successfully shows that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation. In making a demonstration under Section 6(i)(vii) of this Chapter, the owner or operator must:

...(i) (I) Notify the Director in writing within seven days of determining statistically significant evidence of contamination at the compliance point that he or she intends to make a demonstration under Section 6(i)(vii) of this Chapter;

...(ii) (II) Within 90 days, submit a report to the Director which demonstrates that a source other than a regulated unit caused the contamination or that the contamination resulted from error in sampling, analysis, or evaluation;

- ...(iii) (III) Within 90 days, submit to the Director an application for a permit modification to make any appropriate changes to the detection monitoring program facility; and
- ...(iv) (IV) Continue to monitor in accordance with the detection monitoring program established under Section 6(i) of this Chapter.
- 264.98(h) (viii) If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of Section 6(i) of this Chapter, he or she must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.
- 264.99 (j) COMPLIANCE MONITORING PROGRAM. An owner or operator required to establish a compliance monitoring program under Section 6 of this Chapter must, at a minimum, discharge the following responsibilities:
 - 264.99(a) (i) The owner or operator must monitor the ground water to determine whether regulated units are in compliance with the ground-water protection standard under Section 6(c) of this Chapter. The Director will specify the ground-water protection standard in the facility permit, including:
 - 264.99(a)(1) (A) A list of the hazardous constituents identified under Section 6(d) of this Chapter;
 - 264.99(a)(2) (B) Concentration limits under Section 6(e) of this Chapter for each of those hazardous constituents;
 - 264.99(a)(3) (C) The compliance point under Section 6(f) of this Chapter; and
 - 264.99(a)(4) (D) The compliance period under Section (g) of this Chapter.
 - 264.99(b) (ii) The owner or operator must install a ground-water monitoring system at the compliance point as specified under Section 6(f) of this Chapter. The ground-water monitoring system must comply with Sections 6(h)(i)(B), 6(h)(ii), and 6(h)(iii) of this Chapter.
 - 264.99(c) (iii) The Director will specify the sampling procedures and statistical methods appropriate for the constituents and the facility, consistent with Sections 6(h)(vii) and (viii) of this Chapter.
 - 264.99(c)(1) (A) The owner or operator must conduct a sampling program for each chemical parameter or hazardous constituent in accordance with Section 6(h)(vii) of this Chapter.
 - 264.99(c)(2) (B) The owner or operator must record ground-water analytical data as measured and in a form necessary for the determination of statistical significance under Section 6(h)(viii) of this Chapter for the compliance period of the facility.
 - 264.99(d) (iv) The owner or operator must determine whether there

is statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the permit, pursuant to Section 6(j)(i) of this Chapter, at a frequency specified under Section 6(j)(vi) of this Chapter.

264.99(d)(1) (A) In determining whether statistically significant evidence of increased contamination exists, the owner or operator must use the method(s) specified in the permit under Section 6(h)(viii) of this Chapter. The methods(s) must compare data collected at the compliance point(s) to a concentration limit developed in accordance with Section 6(e) of this Chapter.

264.99(d)(2) (B) The owner or operator must determine whether there is statistically significant evidence of increased contamination at each monitoring well at the compliance point within a reasonable time period after completion of sampling. The Director will specify that time period in the facility permit, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of ground-water samples.

264.99(e) (v) The owner or operator must determine the ground-water flow rate and direction in the uppermost aquifer at least annually.

264.99(f) (vi) The Director will specify the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with Section 6(h)(vii) of this Chapter. A sequence of at least four samples from each well (background and compliance wells) must be collected at least semi-annually during the compliance period of the facility.

264.99(g) (vii) The owner or operator must analyze samples from all monitoring wells at the compliance point for all constituents contained in Appendix I of this Chapter at least annually to determine whether additional hazardous constituents are present in the uppermost aquifer and, if so, at what concentration, pursuant to procedures in Section 6(i)(vi) of this Chapter. If the owner or operator finds Appendix I constituents in the ground water that are not already identified in the permit as monitoring constituents, the owner or operator may resample within one month and repeat the Appendix I analysis. If the second analysis confirms the presence of new constituents, the owner or operator must report the concentration of these additional constituents to the Director within seven days after the completion of the second analysis and add them to the monitoring list. If the owner or operator chooses not to resample, then he or she must report the concentrations of these additional constituents to the Director within seven days after completion of the initial analysis and add them to the monitoring list.

264.99(h) (viii) If the owner or operator determines pursuant to Section 6(j)(iv) of this Chapter that any concentration limits under Section 6(e) of this Chapter are being exceeded at any monitoring well at the point of compliance he or she must:

- 264.99(h)(1) (A) Notify the Director of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded.
- 264.99(h)(2) (B) Submit to the Director an application for a permit modification to establish a corrective action program meeting the requirements of Section 6(k) of this Chapter within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the Director under Section 6(i)(vii)(E) of this Chapter. The application must at a minimum include the following information:
- ...(i) (I) A detailed description of corrective actions that will achieve compliance with the ground-water protection standard specified in the permit under Section 6(j)(i) of this Chapter; and
- ...(ii) (II) A plan for a ground-water monitoring program that will demonstrate the effectiveness of the corrective action. Such a ground-water monitoring program may be based on a compliance monitoring program developed to meet the requirements of Section 6(j) of this Chapter.
- 264.99(i) (ix) If the owner or operator determines, pursuant to Section 6(j)(iv) of this Chapter, that the ground-water concentration limits under this Section 6(j) of this Chapter are being exceeded at any monitoring well at the point of compliance, he or she may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or statistical evaluation or natural variation in the ground water. In making a demonstration under Section 6(j)(ix) of this Chapter, the owner or operator must:
- 264.99(i)(1) (A) Notify the Director in writing within seven days that he or she intends to make a demonstration under Section 6(j)(ix) of this Chapter;
- 264.99(i)(2) (B) Within 90 days, submit a report to the Director which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standards resulted from error in sampling, analysis, or evaluation;
- 264.99(i)(3) (C) Within 90 days, submit to the Director an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and
- 264.99(i)(4) (D) Continue to monitor in accord with the compliance monitoring program established under Section 6(j) of this Chapter.
- 264.99(j) (x) If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of Section 6(j) of this Chapter, he or she must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.
- 264.100 (k) CORRECTIVE ACTION PROGRAM. An owner or operator required to establish a corrective action program under Section 6 of this

Chapter must, at a minimum, discharge the following responsibilities:

- 264.100(a) (i) The owner or operator must take corrective action to ensure that regulated units are in compliance with the ground-water protection standard under Section 6(c) of this Chapter. The Director will specify the ground-water protection standard in the facility permit, including:
- 264.100(a)(1) (A) A list of the hazardous constituents identified under Section 6(d) of this Chapter;
- 264.100(a)(2) (B) Concentration limits under Section 6(e) of this Chapter for each of those hazardous constituents;
- 264.100(a)(3) (C) The compliance point under Section 6(f) of this Chapter; and
- 264.100(a)(4) (D) The compliance period under Section 6(g) of this Chapter.
- 264.100(b) (ii) The owner or operator must implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit will specify the specific measures that will be taken.
- 264.100(c) (iii) The owner or operator must begin corrective action within a reasonable time period after the ground-water protection standard is exceeded. The Director will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of Section 6(j)(ix)(B) of this Chapter.
- 264.100(d) (iv) In conjunction with a corrective action program, the owner or operator must establish and implement a ground-water monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under Section 6(j) of this Chapter and must be as effective as that program in determining compliance with the ground-water protection standard under Section 6(c) of this Chapter and in determining the success of a corrective action program under Section 6(k)(v) of this Chapter, where appropriate.
- 264.100(e) (v) In addition to the other requirements of Section 6(k) of this Chapter, the owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under Section 6(d) of this Chapter that exceed concentration limits under Section 6(e) of this Chapter in groundwater:
- 264.100(e)(1) (A) Between the compliance point under Section 6(f) of this Chapter and the downgradient property boundary; and
- 264.100(e)(2) (B) Beyond the facility boundary, where necessary to protect human health and the environment, unless the

owner or operator demonstrates to the satisfaction of the Director that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis.

- 264.100(e)(3) (C) Corrective action measures under Section 6(k)(v) of this Chapter must be initiated and completed within a reasonable period of time considering the extent of contamination.
- 264.100(e)(4) (D) Corrective action measures under Section 6(k)(v) of this Chapter may be terminated once the concentration of hazardous constituents under Section 6(d) of this Chapter is reduced to levels below their respective concentration limits under Section 6(e) of this Chapter.
- 264.100(f) (vi) The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the ground-water protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, he or she must continue that corrective action for as long as necessary to achieve compliance with the ground-water protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if he or she can demonstrate, based on data from the ground-water monitoring program under Section 6(k)(iv) of this Chapter, that the ground-water protection standard of Section 6(c) of this Chapter has not been exceeded for a period of three consecutive years.
- 264.100(g) (vii) The owner or operator must report in writing to the Director on the effectiveness of the corrective action program. The owner or operator must submit these reports semi-annually.
- 264.100(h) (viii) If the owner or operator determines that the corrective action program no longer satisfies the requirements of Section 6(k) of this Chapter, he or she must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.
- 264.101 (1) CORRECTIVE ACTION FOR WASTE MATERIAL MANAGEMENT UNITS.
- 264.101(a) (i) The owner or operator of a facility seeking a permit for the treatment, storage or disposal of hazardous waste must institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any waste material management unit at the facility, regardless of the time at which waste was placed in such unit.
- 264.101(b) (ii) Corrective action will be specified in the permit in accordance with Section 6(1) and Section 18 of this Chapter. The permit will contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action.

264.101(c) (iii) The owner or operator must implement corrective actions beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates to the satisfaction of the Director that, despite the owner's or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. The owner/operator is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for such corrective action must be provided.

(A) The requirements of Section 6(1)(iii) of this Chapter apply to:

RCRA 3004(v)(1) (I) All facilities operating under permits issued under W.S. 35-11-503(d); W.S. 35-11-801; Chapter 4, Section 2(a); and RCRA Section 3005(c), and

RCRA 3004(v)(2) (II) All landfills, surface impoundments, and waste pile units (including any new units, replacements of existing units, or lateral expansions of existing units) which receive hazardous waste after July 26, 1982.

RCRA 3004(v) (B) Pending promulgation of such regulations, the Director shall issue corrective action orders for facilities referred to in paragraphs (A)(I) and (II) above, on a case-by-case basis, consistent with the purposes of Section 6(1)(iii) of this Chapter.

264.101(d) (iv) This does not apply to remediation waste management sites unless they are part of a facility subject to a permit for treating, storing or disposing of hazardous wastes that are not remediation wastes.

264/Subpart G Section 7. CLOSURE AND POST-CLOSURE

264.110 (a) APPLICABILITY. Except as Section 1(a) of this Chapter provides otherwise:

264.110(a) (i) Sections 7(b) through 7(f) of this Chapter (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

264.110(b) (ii) Sections 7(g) through 7(k) of this Chapter (which concern post-closure care) apply to the owners and operators of:

264.110(b)(1) (A) All hazardous waste disposal facilities;

264.110(b)(2) (B) Waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure to the extent that these Sections are made applicable to such facilities in Section 10(i) or Section 11(i) of this Chapter;

264.110(b)(3) (C) Tank systems that are required under Section 9(h) of this Chapter to meet the requirements for landfills; and

- 264.110(b)(4) (D) Containment buildings that are required under Section 28(c) of this Chapter to meet the requirement for landfills.
- 264.110(c) (iii) The Director may replace all or part of the requirements of this Section (and the unit-specific standards referenced in Section 7(b)(iii) of this Chapter applying to a regulated unit), with alternative requirements set out in a permit or in an enforceable document (as defined in Chapter 1, Section 1(f)(i)), where the Director determines that:
- 264.110(c)(1) (A) The regulated unit is situated among waste material management units (or areas of concern), a release has occurred, and both the regulated unit and one or more waste material management unit(s) (or areas of concern) are likely to have contributed to the release; and
- 264.110(c)(2) (B) It is not necessary to apply the closure requirements of Section 7 of this Chapter (and those referenced herein) because the alternative requirements will protect human health and the environment and will satisfy the closure performance standard of Section 7(b)(i) and (ii) of this Chapter.
- 264.111 (b) CLOSURE PERFORMANCE STANDARD. The owner or operator must close the facility in a manner that:
- 264.111(a) (i) Minimizes the need for further maintenance; and
- 264.111(b) (ii) Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and
- 264.111(c) (iii) Complies with the closure requirements of Section 7 of this Chapter, including, but not limited to, the requirements of Sections 8(i), 9(h), 10(i), 11(i), 12(k), 13(k), 14(l), 23(b)-(d), and 28(c) of this Chapter.
- 264.112 (c) CLOSURE PLAN; AMENDMENT OF PLAN.
- 264.112(a) (i) Written plan.
- 264.112(a)(1) (A) The owner or operator of a hazardous waste management facility must have a written closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by Sections 10(i)(iii)(A)(I) and 11(i)(iii)(A)(I) of this Chapter to have contingent closure plans. The plan must be submitted with the permit application, in accordance with Chapter 3, Section 2(e)(ii)(M) of these rules and regulations, and approved by the Director as part of the permit issuance procedures under Chapter 3, Section 1 and Chapter 6, Section 1 of these rules and regulations. In accordance with Chapter 4, Section 1(c) of these rules and regulations, the approved closure plan will become a condition of any State hazardous waste facility permit.

- 264.112(a)(2) (B) The Director's approval of the plan must ensure that the approved closure plan is consistent with Sections 7(b) through 7(f) of this Chapter and the applicable requirements of Section 6 of this Chapter, and Sections 8(i), 9(h), 10(i), 11(i), 12(k), 13(k), 14(l), 23(b), and 28(c) of this Chapter. Until final closure is completed and certified in accordance with Section 7(f) of this Chapter, a copy of the approved plan and all approved revisions must be furnished to the Director upon request, including requests by mail.
- 264.112(b) (ii) Content of plan. The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include, at least:
- 264.112(b)(1) (A) A description of how each hazardous waste management unit at the facility will be closed in accordance with Section 7(b) of this Chapter;
- 264.112(b)(2) (B) A description of how final closure of the facility will be conducted in accordance with Section 7(b) of this Chapter. The description must identify the maximum extent of the operations which will be unclosed during the active life of the facility; and
- 264.112(b)(3) (C) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the type(s) of the off-site hazardous waste management units to be used, if applicable; and
- 264.112(b)(4) (D) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard; and
- 264.112(b)(5) (E) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, ground-water monitoring, leachate collection, and run-on and run-off control; and
- 264.112(b)(6) (F) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included.)
- 264.112(b)(7) (G) For facilities that use trust funds to

establish financial assurance under Chapter 5, Section 1(d) of these rules and regulations and that are expected to close prior to the expiration of the permit, an estimate of the expected year of final closure.

264.112(b)(8) (H) For facilities where the Director has applied alternative requirements at a regulated unit under Section 6(a)(vi) of this Chapter, Section 7(a)(iii) of this Chapter, and/or Chapter 5, Section 1(a)(v) of these rules and regulations either the alternative requirements applying to the regulated unit, or a reference to the enforceable document containing those alternative requirements.

264.112(c) (iii) Amendment of plan. The owner or operator must submit a written notification of or request for a permit modification to authorize a change in operating plans, facility design, or the approved closure plan in accordance with the applicable procedures in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Section 2 of these rules and regulations. The written notification or request must include a copy of the amended closure plan for review or approval by the Director.

264.112(c)(1) (A) The owner or operator may submit a written notification or request to the Director for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the facility.

264.112(c)(2) (B) The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved closure plan whenever:

...(i) (I) Changes in operating plans or facility design affect the closure plan, or

...(ii) (II) There is a change in the expected year of closure, if applicable, or

...(iii) (III) In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan.

...(iv) (IV) The owner or operator requests the Director to apply alternative requirements to a regulated unit under Section 6(a)(vi) of this Chapter, Section 7(a)(iii) of this Chapter, and/or Chapter 5, Section 1(a)(v) of these rules and regulations.

264.112(c)(3) (C) The owner or operator must submit a written request for a permit modification including a copy of the amended closure plan for approval at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator must request a permit modification no later than 30 days after the unexpected event. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under Section 10(i)(iii)(A)(I) or Section 11(i)(iii)(A)(I) of this

Chapter, must submit an amended closure plan to the Director no later than 60 days from the date that the owner or operator or Director determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of Section 13(k) of this Chapter, or no later than 30 days from that date if the determination is made during partial or final closure. The Director will approve, disapprove, or modify this amended plan in accordance with the procedures in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Section 2 of these rules and regulations. In accordance with Chapter 4, Section 1(c) of these rules and regulations, the approved closure plan will become a condition of any State hazardous waste management facility permit issued.

264.112(c)(4) (D) The Director may request modifications to the plan under the conditions described in Section 7(c)(iii)(B) of this Chapter. The owner or operator must submit the modified plan within 60 days of the Director's request, or within 30 days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the Director will be approved in accordance with the procedures in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Section 2 of these rules and regulations.

264.112(d) (iv) Notification of partial closure and final closure.

264.112(d)(1) (A) The owner or operator must notify the Director in writing at least 60 days prior to the date on which he or she expects to begin closure of a surface impoundment, waste pile, land treatment or landfill unit, or final closure of a facility with such a unit. The owner or operator must notify the Director in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed. The owner or operator must notify the Director in writing at least 45 days prior to the date on which he or she expects to begin partial or final closure of a boiler or industrial furnace, whichever is earlier.

264.112(d)(2) (B) The date when the owner or operator "expects to begin closure" must be either:

...(i) (I) No later than 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous wastes. If the owner or operator of a hazardous waste management unit can demonstrate to the Director that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and he or she has taken, **and will continue to take**, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, the Director may approve an extension to this one-year limit; or

...(ii) (II) For units meeting the requirements of Section 7(d)(iv) of this Chapter, no later than 30 days after the date on which the hazardous waste management unit receives the known

final volume of non-hazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional non-hazardous wastes, no later than one year after the date on which the unit received the most recent volume of non-hazardous wastes. If the owner or operator can demonstrate to the Director that the hazardous waste management unit has the capacity to receive additional non-hazardous wastes and he or she has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements, the Director may approve an extension to this one-year limit.

264.112(d)(3) (C) If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under W.S. 35-11-503(d); Articles 7 and 9 of the Wyoming Environmental Quality Act; Chapter 11, Section 8(f); or RCRA Section 3008, to cease receiving hazardous wastes or to close, then the requirements of Section 7(c)(iv) of this Chapter do not apply. However, the owner or operator must close the facility in accordance with the deadlines established in Section 7(d) of this Chapter.

264.112(e) (v) Removal of wastes and decontamination or dismantling of equipment. Nothing in Section 7(c) of this Chapter shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

264.113 (d) CLOSURE; TIME ALLOWED FOR CLOSURE.

264.113(a) (i) Within 90 days after receiving the final volume of hazardous wastes, or the final volume of non-hazardous wastes if the owner or operator complies with all applicable requirements in Sections 7(d)(iv) and (v) of this Chapter, at a hazardous waste management unit or facility, the owner or operator must treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Director may approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:

(A) Either:

264.113(a)(1)(i) (I) The activities required to comply with Section 7(d)(i) of this Chapter will, of necessity, take longer than 90 days to complete; or

(II) The owner or operator demonstrates:

...(ii)(A) (1.) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the owner or operator complies with Sections 7(d)(iv) and (v) of this Chapter; and

...(ii)(B) (2.) There is a reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

- ... (ii) (C) (3.) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and
- 264.113(a)(2) (B) He or she has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable permit requirements.
- 264.113(b) (ii) The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes, or the final volume of non-hazardous wastes if the owner or operator complies with all applicable requirements in Sections 7(d)(iv) and (v) of this Chapter, at the hazardous waste management unit or facility. The Director may approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:
- (A) Either:
- 264.113(b)(1)(i) (I) The partial or final closure activities will, of necessity, take longer than 180 days to complete; or
- (II) The owner or operator demonstrates that:
- ... (ii) (A) (1.) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the owner or operator complies with Sections 7(d)(iv) and (v) of this Chapter; and
- ... (ii) (B) (2.) There is reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and
- ... (ii) (C) (3.) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and
- 264.113(b)(2) (B) He or she has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable permit requirements.
- 264.113(c) (iii) The demonstrations referred to in Sections 7(d)(i)(A) and 7(d)(ii)(A) of this Chapter must be made as follows:
- 264.113(c)(1) (A) The demonstrations in Section 7(d)(i)(A) of this Chapter must be made at least 30 days prior to the expiration of the 90-day period in Section 7(d)(i) of this Chapter; and
- 264.113(c)(2) (B) The demonstration in Section 7(d)(ii)(A) of this Chapter must be made at least 30 days prior to the expiration of the 180-day period in Section 7(d)(ii) of this Chapter, unless the owner or operator is otherwise subject to the deadlines in

Section 7(d)(iv) of this Chapter.

264.113(d) (iv) The Director may allow an owner or operator to receive only non-hazardous wastes in a landfill, land treatment, or surface impoundment unit after the final receipt of hazardous wastes at that unit if:

264.113(d)(1) (A) The owner or operator requests a permit modification in compliance with all applicable requirements in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Section 2 of these rules and regulations and in the permit modification request demonstrates that:

...(i) (I) The unit has the existing design capacity as indicated on the part A application to receive non-hazardous wastes; and

...(ii) (II) There is a reasonable likelihood that the owner or operator or another person will receive non-hazardous wastes in the unit within one year after the final receipt of hazardous wastes; and

...(iii) (III) The non-hazardous wastes will not be incompatible with any remaining wastes in the unit, or with the facility design and operating requirements of the unit or facility under this Chapter or Chapter 5 of these rules and regulations; and

...(iv) (IV) Closure of the hazardous waste management unit would be incompatible with continued operation of the unit or facility; and

...(v) (V) The owner or operator is operating and will continue to operate in compliance with all applicable permit requirements; and

264.113(d)(2) (B) The request to modify the permit includes an amended waste analysis plan, ground-water monitoring and response program, human exposure assessment required under Chapter 3, Section 2(a)(x) of these rules and regulations and W.S. 35-11-503(d), and closure and post-closure plans, and updated cost estimates and demonstrations of financial assurance for closure and post-closure care as necessary and appropriate, to reflect any changes due to the presence of hazardous constituents in the non-hazardous wastes, and changes in closure activities, including the expected year of closure if applicable under Section 7(c)(ii)(G) of this Chapter, as a result of the receipt of non-hazardous wastes following the final receipt of hazardous wastes; and

264.113(d)(3) (C) The request to modify the permit includes revisions, as necessary and appropriate, to affected conditions of the permit to account for the receipt of non-hazardous wastes following receipt of the final volume of hazardous wastes; and

264.113(d)(4) (D) The request to modify the permit and the demonstrations referred to in Sections 7(d)(iv)(A) and 7(d)(iv)(B) of this Chapter are submitted to the Director no later than 120 days prior to the date on which the owner or operator of the facility receives the known final volume of hazardous wastes at the unit^.

- 264.113(e) (v) In addition to the requirements in Section 7(d)(iv) of this Chapter, an owner or operator of a hazardous waste surface impoundment that is not in compliance with the liner and leachate collection system requirements in W.S. 35-11-503(d); RCRA Section 3004(o)(1) and 3005(j)(1); or RCRA Section 3004(o)(2) or (3); or RCRA Section 3005(j)(2), (3), (4), or (13) must:
- 264.113(e)(1) (A) Submit with the request to modify the permit:
- ... (i) (I) A contingent corrective measures plan, unless a corrective action plan has already been submitted under Section 6(j) of this Chapter; and
- ... (ii) (II) A plan for removing hazardous wastes in compliance with Section 7(d)(v)(B) of this Chapter; and
- 264.113(e)(2) (B) Remove all hazardous wastes from the unit by removing all hazardous liquids, and removing all hazardous sludges to the extent practicable without impairing the integrity of the liner(s), if any.
- 264.113(e)(3) (C) Removal of hazardous wastes must be completed no later than 90 days after the final receipt of hazardous wastes. The Director may approve an extension to this deadline if the owner or operator demonstrates that the removal of hazardous wastes will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment.
- 264.113(e)(4) (D) If a release that is a statistically significant increase (or decrease in the case of pH) over background values for detection monitoring parameters or constituents specified in the permit or that exceeds the facility's ground-water protection standard at the point of compliance, if applicable, is detected in accordance with the requirements in Section 6 of this Chapter, the owner or operator of the unit:
- ... (i) (I) Must implement corrective measures in accordance with the approved contingent corrective measures plan required by Section 7(d)(v)(A) of this Chapter no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later;
- ... (ii) (II) May continue to receive wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action; and
- ... (iii) (III) May be required by the Director to implement corrective measures in less than one year or to cease the receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment.
- 264.113(e)(5) (E) During the period of corrective action, the owner or operator shall provide semi-annual reports to the Director that describe the progress of the corrective action program, compile all ground-water monitoring data, and evaluate the effect of the continued receipt of non-hazardous wastes on the effectiveness of

the corrective action.

264.113(e)(6) (F) The Director may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year as required in Section 7(d)(v)(D) of this Chapter, or fails to make substantial progress in implementing corrective action and achieving the facility's ground-water protection standard or background levels if the facility has not yet established a ground-water protection standard.

264.113(e)(7) (G) If the owner or operator fails to implement corrective measures as required in Section 7(d)(v)(D) of this Chapter, or if the Director determines that substantial progress has not been made pursuant to Section 7(d)(v)(F) of this Chapter he or she shall:

...(i) (I) Notify the owner or operator in writing that the owner or operator must begin closure in accordance with the deadlines in Sections 7(d)(i) and (ii) of this Chapter and provide a detailed statement of reasons for this determination, and

...(ii) (II) Provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the decision no later than 20 days after the date of the notice.

...(iii) (III) If the Director receives no written comments, the decision will become final five days after the close of the comment period. The Director will notify the owner or operator that the decision is final, and that a revised closure plan, if necessary, must be submitted within 15 days of the final notice and that closure must begin in accordance with the deadlines in Sections 7(d)(i) and (ii) of this Chapter.

...(iv) (IV) If the Director receives written comments on the decision, he or she shall make a final decision within 30 days after the end of the comment period, and provide the owner or operator in writing and the public through a newspaper notice, a detailed statement of reasons for the final decision. If the Director determines that substantial progress has not been made, closure must be initiated in accordance with the deadlines in Sections 7(d)(i) and (ii) of this Chapter.

...(v) (V) The final determinations made by the Director under Sections 7(d)(v)(G)(III) and (IV) of this Chapter are not subject to appeal to the Wyoming Environmental Quality Council.

264.114 (e) DISPOSAL OR DECONTAMINATION OF EQUIPMENT, STRUCTURES AND SOILS. During the partial and final closure periods, all contaminated equipment, structures and soils must be properly disposed of or decontaminated unless otherwise specified in Sections 9(h), 10(i), 11(i), 12(k) or 13(k) of this Chapter. By removing any hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that waste in accordance with all applicable requirements of Chapter 8 of these rules and regulations.

264.115 (f) CERTIFICATION OF CLOSURE. Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile, land treatment, and landfill unit, and within 60 days of the completion of final closure, the owner or operator must submit to the Director, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Director upon request until he or she releases the owner or operator from the financial assurance requirements for closure under Chapter 5, Section 1(d)(ix) of these rules and regulations.

264.116 (g) SURVEY PLAT. No later than the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Director, a survey plat indicating the location and dimensions of landfills cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use, must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable Section 7 regulations of this Chapter.

264.117 (h) POST-CLOSURE CARE AND USE OF PROPERTY.

(i) Care and use requirements:

264.117(a)(1) (A) Post-closure care for each hazardous waste management unit subject to the requirements of Sections 7(h) through 7(k) of this Chapter must begin after completion of closure of the unit and continue for 30 years after that date and must consist of at least the following:

...(i) (I) Monitoring and reporting in accordance with the requirements of Sections 6, 10, 11, 12, 13, and 23 of this Chapter; and

...(ii) (II) Maintenance and monitoring of waste containment systems in accordance with the requirements of Sections 6, 10, 11, 12, 13, and 23 of this Chapter.

264.117(a)(2) (B) Any time preceding partial closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular unit, the Director may, in accordance with the permit modification procedures in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Section 2 of these rules and regulations:

...(i) (I) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if he or she finds that the reduced period is sufficient to protect human health and the

environment (e.g., leachate or ground water monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure); or

- ...
 - (ii) (II) Extend the post-closure care period applicable to the hazardous waste management unit or facility if he or she finds that the extended period is necessary to protect human health and the environment (e.g., leachate or ground water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).
- 264.117(b) (ii) The Director may require, at partial and final closure, continuation of any of the security requirements of Section 2(e) of this Chapter during part or all of the post-closure period when:
 - 264.117(b)(1) (A) Hazardous wastes may remain exposed after completion of partial or final closure; or
 - 264.117(b)(2) (B) Access by the public or domestic livestock may pose a hazard to human health.
- 264.117(c) (iii) Post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring systems, unless the Director finds that the disturbance:
 - 264.117(c)(1) (A) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or
 - 264.117(c)(2) (B) Is necessary to reduce a threat to human health or the environment.
- 264.117(d) (iv) All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in Section 7(i) of this Chapter.
- 264.118 (i) POST-CLOSURE PLAN; AMENDMENT OF PLAN.
- 264.118(a) (i) Written Plan. The owner or operator of a hazardous waste disposal unit must have a written post-closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by Section 10(i)(iii)(A)(II) and Section 11(i)(iii)(A)(II) of this Chapter to have contingent post-closure plans. Owners or operators of surface impoundments and waste piles not otherwise required to prepare contingent post-closure plans under Section 10(i)(iii)(A)(II) and Section 11(i)(iii)(A)(II) of this Chapter must submit a post-closure plan to the Director within 90 days from the date that the owner or operator or Director determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of Sections 7(h) through 7(k) of this Chapter. The plan must be

submitted with the permit application, in accordance with Chapter 3, Section 2(e)(ii)(M) of these rules and regulations, and approved by the Director as part of the permit issuance procedures under Chapter 3, Section 1 and Chapter 6, Section 1 of these rules and regulations. In accordance with Chapter 4, Section 1(c) of these rules and regulations, the approved post-closure plan will become a condition of any State hazardous waste management facility permit issued.

- 264.118(b) (ii) For each hazardous waste management unit subject to the requirements of Section 7(i) of this Chapter, the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:
- 264.118(b)(1) (A) A description of the planned monitoring activities and frequencies at which they will be performed to comply with Sections 6, 10, 11, 12, 13, and 23 of this Chapter during the post-closure care period; and
- 264.118(b)(2) (B) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:
- ... (i) (I) The integrity of the cap and final cover or other containment systems in accordance with the requirements of Sections 6, 10, 11, 12, 13, and 23 of this Chapter; and
- ... (ii) (II) The function of the monitoring equipment in accordance with the requirements of Sections 6, 10, 11, 12, 13, and 23 of this Chapter; and
- 264.118(b)(3) (C) The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.
- 264.118(b)(4) (D) For facilities where the Director has applied alternative requirements at a regulated unit under Section 6(a)(vi) of this Chapter, Section 7(a)(iii) of this Chapter, and/or Chapter 5, Section 1(a)(v) of these rules and regulations, either the alternative requirements that apply to the regulated unit, or a reference to the enforceable document containing those requirements.
- 264.118(c) (iii) Until final closure of the facility, a copy of the approved post-closure plan must be furnished to the Director upon request, including request by mail. After final closure has been certified, the person or office specified in Section 7(i)(ii)(C) of this Chapter must keep the approved post-closure plan during the remainder of the post-closure period.
- 264.118(d) (iv) Amendment of plan. The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved post-closure plan in accordance with the applicable requirements in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Section 2 of these rules and regulations. The written notification or request must include a copy of the amended post-closure plan for review or approval by the Director.

264.118(d)(1) (A) The owner or operator may submit a written notification or request to the Director for a permit modification to amend the post-closure plan at any time during the active life of the facility or during the post-closure care period.

264.118(d)(2) (B) The owner or operator must submit a written notification of or request for a permit modification to authorize a change in the approved post-closure plan whenever:

...(i) (I) Changes in operating plans or facility design affect the approved post-closure plan, or

...(ii) (II) There is a change in the expected year of final closure, if applicable, or

...(iii) (III) Events which occur during the active life of the facility, including partial and final closures, affect the approved post-closure plan.

...(iv) (IV) The owner or operator requests the Director to apply alternative requirements to a regulated unit under Section 6(a)(vi) of this Chapter, Section 7(a)(iii) of this Chapter, and/or Chapter 5, Section 1(a)(v) of these rules and regulations.

264.118(d)(3) (C) The owner or operator must submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan. An owner or operator of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent post-closure plan under Section 10(i)(iii)(A)(II) and Section 11(i)(iii)(A)(II) of this Chapter must submit a post-closure plan to the Director no later than 90 days after the date that the owner or operator or Director determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of Section 13(k) of this Chapter. The Director will approve, disapprove or modify this plan in accordance with the procedures in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Sections 2 and 3 of these rules and regulations. In accordance with Chapter 4, Section 1(c) of these rules and regulations, the approved post-closure plan will become a permit condition.

264.118(d)(4) (D) The Director may request modifications to the plan under the conditions described in Section 7(i)(iv)(B) of this Chapter. The owner or operator must submit the modified plan no later than 60 days after the Director's request, or no later than 90 days if the unit is a surface impoundment or waste pile not previously required to prepare a contingent post-closure plan. Any modifications requested by the Director will be approved, disapproved, or modified in accordance with the procedures in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Sections 2 and 3 of these rules and regulations.

264.119 (j) POST-CLOSURE NOTICES.

264.119(a) (i) No later than 60 days after certification of

closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Director a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator must identify the type, location, and quantity of the hazardous wastes to the best of his or her knowledge and in accordance with any records he or she has kept.

264.119(b) (ii) Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

264.119(b)(1) (A) Record, in accordance with State law, a notation on the deed to the facility property -- or on some other instrument which is normally examined during title search -- that will in perpetuity notify any potential purchaser of the property that:

...(i) (I) The land has been used to manage hazardous wastes; and

...(ii) (II) Its use is restricted under regulations within Section 7 of this Chapter; and

...(iii) (III) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by Sections 7(g) and 7(j)(i) of this Chapter have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Director; and

264.119(b)(2) (B) Submit a certification, signed by the owner or operator, that he or she has recorded the notation specified in Section 7(j)(ii)(A) of this Chapter, including a copy of the document in which the notation has been placed, to the Director.

264.119(c) (iii) If the owner or operator or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, he or she must request a modification to the post-closure permit in accordance with the applicable requirements in Chapter 1, Sections 1(h)-1(j); Chapter 3; Chapter 4; Chapter 6; Chapter 7; and Chapter 11, Section 2 of these rules and regulations. The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of Section 7(h)(iii) of this Chapter. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of these rules and regulations. If he or she is granted a permit modification or otherwise granted approval to conduct such removal activities, the owner or operator may request that the Director approve either:

264.119(c)(1) (A) The removal of the notation on the deed to the facility property or other instrument normally examined during title search; or

264.119(c)(2) (B) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

264.120 (k) CERTIFICATION OF COMPLETION OF POST-CLOSURE CARE. No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator must submit to the Director, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification must be signed by the owner or operator and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Director upon request until he or she releases the owner or operator from the financial assurance requirements for post-closure care under Chapter 5, Section 1(d)(ix) of these rules and regulations.

264/Subpart I Section 8. USE AND MANAGEMENT OF CONTAINERS

264.170 (a) APPLICABILITY. The regulations in this Section apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as Section 1(a) of this Chapter provides otherwise.

[Comment: Under Chapter 2, Sections 1(g) and 4(d)(iii) of these rules and regulations, if a hazardous waste is emptied from a container the residue remaining in the container is not considered a hazardous waste if the container is "empty" as defined in Chapter 2, Section 1(g) of these rules and regulations. In that event, management of the container is exempt from the requirements of this Section.]

264.171 (b) CONDITION OF CONTAINERS. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this Chapter.

264.172 (c) COMPATIBILITY OF WASTE WITH CONTAINERS. The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

264.173 (d) MANAGEMENT OF CONTAINERS.

264.173(a) (i) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

264.173(b) (ii) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

[Comment: Reuse of containers in transportation is governed by U.S. Department of Transportation regulations including those set forth

in 49 CFR part 173.28.]

264.174 (e) INSPECTIONS.

(i) At least weekly, the owner or operator must inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

[Comment: See Sections 2(f)(iii) and 8(b) of this Chapter for remedial action required if deterioration or leaks are detected.]

264.175 (f) CONTAINMENT.

264.175(a) (i) Container storage areas must have a containment system that is designed and operated in accordance with Section 8(f)(ii) of this Chapter, except as otherwise provided by Section 8(f)(iii) of this Chapter.

264.175(b) (ii) A containment system must be designed and operated as follows:

264.175(b)(1) (A) A base must underly the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

264.175(b)(2) (B) The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

264.175(b)(3) (C) The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination;

264.175(b)(4) (D) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in Section 8(f)(ii)(C) of this Chapter to contain any run-on which might enter the system; and

264.175(b)(5) (E) Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

[Comment: If the collected material is a hazardous waste under Chapter 2 of these rules and regulations, it must be managed as a hazardous waste in accordance with all applicable requirements of Chapter 5; Chapters 8 through 10; Chapter 11, Section 1 and Sections 4 through 342; and Chapter 12, Sections 1-8, 19 and 20 of these rules and regulations. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of Section 402 of the Clean Water Act, as amended.]

264.175(c) (iii) Storage areas that store containers holding only

wastes that do not contain free liquids need not have a containment system defined by Section 8(f)(ii) of this Chapter, except as provided by Section 8(f)(iv) of this Chapter or provided that:

- 264.175(c)(1) (A) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or
- 264.175(c)(2) (B) The containers are elevated or are otherwise protected from contact with accumulated liquid.
- 264.175(d) (iv) Storage areas that store containers holding the wastes listed below that do not contain free liquids must have a containment system defined by Section 8(f)(ii) of this Chapter:
- 264.175(d)(1) (A) F020, F021, F022, F023, F026, and F027.
- (B) Reserved.
- 264.176 (g) SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE.
- (i) Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.
- [Comment: See Section 2(h)(i) of this Chapter for additional requirements.]
- 264.177 (h) SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES.
- 264.177(a) (i) Incompatible wastes, or incompatible wastes and materials (see Appendix E of this Chapter for examples), must not be placed in the same container, unless Section 2(h)(ii) of this Chapter is complied with.
- 264.177(b) (ii) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material.
- [Comment: As required by Section 2(d) of this Chapter, the waste analysis plan must include analyses needed to comply with Section 8(h) of this Chapter. Also, Section 2(h)(iii) of this Chapter requires wastes analyses, trial tests or other documentation to assure compliance with Section 2(h)(ii) of this Chapter. As required by Section 8(d) of this Chapter, the owner or operator must place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.]
- 264.177(c) (iii) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.
- [Comment: The purpose of Section 8(h) of this Chapter is to prevent fires, explosions, gaseous emission, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak.]

264.178 (i) CLOSURE.

(i) At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

[Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with Chapter 2, Section 1(c)(iv) of these rules and regulations that the waste material removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Chapter 5; Chapters 8 through 10; Chapter 11, Section 1 and Sections 4 through 3+2; and Chapter 12, Sections 1 through 8, 19 and 20 of these rules and regulations.]

264.179 (j) AIR EMISSION STANDARDS.

(i) The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of Sections 26, 27 and 28 of this Chapter.

264/Subpart J Section 9. TANK SYSTEMS

264.190 (a) APPLICABILITY ~~←'264.190>~~. The requirements of this Section apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in Sections 9(a)(i), 9(a)(ii), and 9(a)(iii) of this Chapter or in Section 1(a) of this Chapter.

264.190(a) (i) Tank systems that are used to store or treat hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in Section 9(d) of this Chapter. To demonstrate the absence or presence of free liquids in the stored/treated waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Chapter 1, Section 1(g) of these rules and regulations.

264.190(b) (ii) Tank systems, including sumps, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in Section 9(d)(i) of this Chapter.

264.190(c) (iii) Tanks, sumps, and other such collection devices or systems used in conjunction with drip pads, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations and regulated under Section 22 of this Chapter, must meet the requirements of this Section.

264.191 (b) ASSESSMENT OF EXISTING TANK SYSTEM'S INTEGRITY.

264.191(a) (i) For each existing tank system that does not have secondary containment meeting the requirements of Section 9(d) of

this Chapter, the owner or operator must determine that the tank system is not leaking or is unfit for use. Except as provided in Section 9(b)(iii) of this Chapter, the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified registered professional engineer, in accordance with Chapter 3, Section 2(b)(iv) of these rules and regulations, that attests to the tank system's integrity by January 12, 1988.

264.191(b) (ii) This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated, to ensure that it will not collapse, rupture, or fail. At a minimum, this assessment must consider the following:

264.191(b)(1) (A) Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

264.191(b)(2) (B) Hazardous characteristics of the waste(s) that have been and will be handled;

264.191(b)(3) (C) Existing corrosion protection measures;

264.191(b)(4) (D) Documented age of the tank system, if available (otherwise, an estimate of the age); and

264.191(b)(5) (E) Results of a leak test, internal inspection, or other tank integrity examination such that:

...(i) (I) For non-enterable underground tanks, the assessment must include a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects, and

...(ii) (II) For other than non-enterable underground tanks and for ancillary equipment, this assessment must include either a leak test, as described above, or other integrity examination, that is certified by an independent, qualified, registered professional engineer in accordance with Chapter 3, Section 2(b)(iv) of these rules and regulations, that addresses cracks, leaks, corrosion, and erosion.

[Note: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines in conducting other than a leak test.]

264.191(c) (iii) Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986, must conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.

264.191(d) (iv) If, as a result of the assessment conducted in accordance with Section 9(b)(i) of this Chapter, a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of Section 9(g) of this Chapter.

264.192 (c) DESIGN AND INSTALLATION OF NEW TANK SYSTEMS OR

COMPONENTS.

264.192(a) (i) Owners or operators of new tank systems or components must obtain and submit to the Director, at time of submittal of Part B information, a written assessment, reviewed and certified by an independent, qualified registered professional engineer, in accordance with Chapter 3, Section 2(b)(iv) of these rules and regulations, attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment must show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. This assessment, which will be used by the Director to review and approve or disapprove the acceptability of the tank system design, must include, at a minimum, the following information:

264.192(a)(1) (A) Design standard(s) according to which tank(s) and/or the ancillary equipment are constructed;

264.192(a)(2) (B) Hazardous characteristics of the waste(s) to be handled;

264.192(a)(3) (C) For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system will be in contact with the soil or with water, a determination by a corrosion expert of:

...(i) (I) Factors affecting the potential for corrosion, including but not limited to:

...(i)(A) (1.) Soil moisture content;

...(i)(B) (2.) Soil pH;

...(i)(C) (3.) Soil sulfides level;

...(i)(D) (4.) Soil resistivity;

...(i)(E) (5.) Structure to soil potential;

...(i)(F) (6.) Influence of nearby underground metal structures (e.g., piping);

...(i)(G) (7.) Existence of stray electric current;

...(i)(H) (8.) Existing corrosion-protection measures (e.g., coating, cathodic protection), and

...(ii) (II) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

...(ii)(A) (1.) Corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic,

etc.;

...(ii)(B) (2.) Corrosion-resistant coating (such as epoxy, fiberglass, etc.) with cathodic protection (e.g., impressed current or sacrificial anodes); and

...(ii)(C) (3.) Electrical isolation devices such as insulating joints, flanges, etc.

[Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85) -- Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in providing corrosion protection for tank systems.]

264.192(a)(4) (D) For underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

264.192(a)(5) (E) Design considerations to ensure that:

...(i) (I) Tank foundations will maintain the load of a full tank;

...(ii) (II) Tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of Section 2(i)(ii)(A) of this Chapter; and

...(iii) (III) Tank systems will withstand the effects of frost heave.

264.192(b) (ii) The owner or operator of a new tank system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system for the presence of any of the following items:

264.192(b)(1) (A) Weld breaks;

264.192(b)(2) (B) Punctures;

264.192(b)(3) (C) Scrapes of protective coatings;

264.192(b)(4) (D) Cracks;

264.192(b)(5) (E) Corrosion;

264.192(b)(6) (F) Other structural damage or inadequate construction/installation. All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

264.192(c) (iii) New tank systems or components that are placed underground and that are backfilled must be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

264.192(d) (iv) All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed, or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being covered, enclosed, or placed into use.

264.192(e) (v) Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

[Note: The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems," or ANSI Standard B31.3, "Petroleum Refinery Piping," and ANSI Standard B31.4 "Liquid Petroleum Transportation Piping System," may be used, where applicable, as guidelines for proper installation of piping systems.]

264.192(f) (vi) The owner or operator must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under Section 9(c)(i)(C) of this Chapter, or other corrosion protection if the Director believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

264.192(g) (vii) The owner or operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of Sections 9(c)(ii) through (vi) of this Chapter, that attest that the tank system was properly designed and installed and that repairs, pursuant to Sections 9(c)(ii) and (iv) of this Chapter, were performed. These written statements must also include the certification statement as required in Chapter 3, Section 2(b)(iv) of these rules and regulations.

264.193 (d) CONTAINMENT AND DETECTION OF RELEASES.

264.193(a) (i) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of Section 9(d) of this Chapter must be provided (except as provided in Sections 9(d)(vi) and (vii) of this Chapter):

264.193(a)(1) (A) For all new tank systems or components, prior to their being put into service;

- 264.193(a)(2) (B) For all existing tank systems used to store or treat EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027, within two years after January 12, 1987;
- 264.193(a)(3) (C) For those existing tank systems of known and documented age, within two years after January 12, 1987 or when the tank system has reached 15 years of age, whichever comes later;
- 264.193(a)(4) (D) For those existing tank systems for which the age cannot be documented, within eight years of January 12, 1987; but if the age of the facility is greater than seven years, secondary containment must be provided by the time the facility reaches 15 years of age, or within two years of January 12, 1987, whichever comes later; and
- 264.193(a)(5) (E) For tank systems that store or treat materials that become hazardous wastes subsequent to January 12, 1987, within the time intervals required in Sections 9(d)(i)(A) through 9(d)(i)(D) of this Chapter, except that the date that a material becomes a hazardous waste must be used in place of January 12, 1987.
- 264.193(b) (ii) Secondary containment systems must be:
- 264.193(b)(1) (A) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system; and
- 264.193(b)(2) (B) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.
- 264.193(c) (iii) To meet the requirements of Section 9(d)(ii) of this Chapter, secondary containment systems must be at a minimum:
- 264.193(c)(1) (A) Constructed of or lined with materials that are compatible with the wastes(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions, and the stress of daily operation (including stresses from nearby vehicular traffic).
- 264.193(c)(2) (B) Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift;
- 264.193(c)(3) (C) Provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the owner or operator can demonstrate to the Director that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and
- 264.193(c)(4) (D) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or

precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the owner or operator can demonstrate to the Director that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

[Note: If the collected material is a hazardous waste under Chapter 2 of these rules and regulations, it is subject to management as a hazardous waste in accordance with all applicable requirements of Chapter 5; Chapters 8 through 10; and Chapter 11, Section 1 and Sections 4 through 3~~1~~₂ of these rules and regulations. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of Sections 301, 304, and 402 of the Clean Water Act, as amended. If discharged to a Publicly Owned Treatment Works (POTW), it is subject to the requirements of Section 307 of the Clean Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR part 302.]

- 264.193(d) (iv) Secondary containment for tanks must include one or more of the following devices:
 - 264.193(d)(1) (A) A liner (external to the tank);
 - 264.193(d)(2) (B) A vault;
 - 264.193(d)(3) (C) A double-walled tank; or
 - 264.193(d)(4) (D) An equivalent device as approved by the Director.
- 264.193(e) (v) In addition to the requirements of Sections 9(d)(ii), 9(d)(iii), and 9(d)(iv) of this Chapter, secondary containment systems must satisfy the following requirements:
 - 264.193(e)(1) (A) External liner systems must be:
 - ...(i) (I) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;
 - ...(ii) (II) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event.
 - ...(iii) (III) Free of cracks or gaps; and
 - ...(iv) (IV) Designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).
 - 264.193(e)(2) (B) Vault systems must be:
 - ...(i) (I) Designed or operated to contain 100

percent of the capacity of the largest tank within its boundary;

- ...(ii) (II) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event:
- ...(iii) (III) Constructed with chemical-resistant water stops in place at all joints (if any):
- ...(iv) (IV) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;
- ...(v) (V) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:
 - ...(v)(A) (1.) Meets the definition of ignitable waste under Chapter 2, Section 3(b) of these rules and regulations; or
 - ...(v)(B) (2.) Meets the definition of reactive waste under Chapter 2, Section 3(d) of these rules and regulations, and may form an ignitable or explosive vapor.
- ...(vi) (VI) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

264.193(e)(3) (C) Double-walled tanks must be:

- ...(i) (I) Designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell.
- ...(ii) (II) Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell: and
- ...(iii) (III) Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours, or at the earliest practicable time, if the owner or operator can demonstrate to the Director, and the Director concludes, that the existing detection technology or site conditions would not allow detection of a release within 24 hours.

[Note: The provisions outlined in the Steel Tank Institute's (STI) "Standard for Dual Wall Underground Steel Storage Tanks" may be used as guidelines for aspects of the design of underground steel double-walled tanks.]

264.193(f) (vi) Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of Sections 9(d)(ii) and

9(d)(iii) of this Chapter except for:

- 264.193(f)(1) (A) Aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;
- 264.193(f)(2) (B) Welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;
- 264.193(f)(3) (C) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and
- 264.193(f)(4) (D) Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.
- 264.193(g) (vii) The owner or operator may obtain a variance from the requirements of Section 9(d) of this Chapter if the Director finds, as a result of a demonstration by the owner or operator that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituents into the ground water; or surface water at least as effectively as secondary containment during the active life of the tank system or that in the event of a release that does migrate to ground water or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with Section 9(d)(vii)(B) of this Chapter, be exempted from the secondary containment requirements of Section 9(d) of this Chapter.
- 264.193(g)(1) (A) In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the Director will consider:
- ...(i) (I) The nature and quantity of the wastes;
- ...(ii) (II) The proposed alternate design and operation;
- ...(iii) (III) The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and ground water, and
- ...(iv) (IV) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to ground water or surface water
- 264.193(g)(2) (B) In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the Director will consider:
- ...(i) (I) The potential adverse effects on ground water, surface water, and land quality taking into account:
- ...(i)(A) (1.) The physical and chemical characteristics of the waste in the tank system, including its

potential for migration.

- ... (i) (B) (2.) The hydrogeological characteristics of the facility and surrounding land,
- ... (i) (C) (3.) The potential for health risks caused by human exposure to waste constituents,
- ... (i) (D) (4.) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents, and
- ... (i) (E) (5.) The persistence and permanence of the potential adverse effects;
- ... (ii) (II) The potential adverse effects of a release on ground-water quality, taking into account:
 - ... (ii) (A) (1.) The quantity and quality of ground water and the direction of ground-water flow,
 - ... (ii) (B) (2.) The proximity and withdrawal rates of ground-water users,
 - ... (ii) (C) (3.) The current and future uses of ground water in the area, and
 - ... (ii) (D) (4.) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;
- ... (iii) (III) The potential adverse effects of a release on surface water quality, taking into account:
 - ... (iii) (A) (1.) The quantity and quality of ground water and the direction of ground-water flow,
 - ... (iii) (B) (2.) The patterns of rainfall in the region,
 - ... (iii) (C) (3.) The proximity of the tank system to surface waters,
 - ... (iii) (D) (4.) The current and future uses of surface waters in the area and any water quality standards established for those surface waters, and
 - ... (iii) (E) (5.) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; and
- ... (iv) (IV) The potential adverse effects of a release on the land surrounding the tank system, taking into account:
 - ... (iv) (A) (1.) The patterns of rainfall in the region, and
 - ... (iv) (B) (2.) The current and future uses of

the surrounding land.

264.193(g)(3) (C) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of Section 9(d)(vii)(A) of this Chapter, at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), must:

...(i) (I) Comply with the requirements of Section 9(g), except Section 9(g)(iv) of this Chapter, and

...(ii) (II) Decontaminate or remove contaminated soil to the extent necessary to:

...(ii)(A) (1.) Enable the tank system for which the variance was granted to resume operation with the capability for the detection of releases at least equivalent to the capability it had prior to the release; and

...(ii)(B) (2.) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water; and

...(iii) (III) If contaminated soil cannot be removed or decontaminated in accordance with Section 9(d)(vii)(C)(II) of this Chapter, comply with the requirement of Section 9(h)(ii) of this Chapter.

264.193(g)(4) (D) The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of Section 9(d)(vii)(A) of this Chapter, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), must:

...(i) (I) Comply with the requirements of Sections 9(g)(i), 9(g)(ii), 9(g)(iii), and 9(g)(iv) of this Chapter; and

...(ii) (II) Prevent the migration of hazardous waste or hazardous constituents to ground water or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if ground water has been contaminated, the owner or operator must comply with the requirements of Section 9(h)(ii) of this Chapter; and

...(iii) (III) If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of Sections 9(d)(i) through (vi) of this Chapter or reapply for a variance from secondary containment and meet the requirements for new tank systems in Section 9(c) of this Chapter if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed and ground water or surface water has not been contaminated.

264.193(h) (viii) The following procedures must be followed in order to request a variance from secondary containment:

- 264.193(h)(1) (A) The Director must be notified in writing by the owner or operator that he or she intends to conduct and submit a demonstration for a variance from secondary containment as allowed in Section 9(d)(vii) of this Chapter according to the following schedule:
- ... (i) (I) For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with Section 9(d)(i) of this Chapter.
- ... (ii) (II) For new tank systems, at least 30 days prior to entering into a contract for installation.
- 264.193(h)(2) (B) As part of the notification, the owner or operator must also submit to the Director a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in Section 9(d)(vii)(A) or Section 9(d)(vii)(B) of this Chapter;
- 264.193(h)(3) (C) The demonstration for a variance must be completed within 180 days after notifying the Director of an intent to conduct the demonstration; and
- 264.193(h)(4) (D) If a variance is granted under Section 9(d)(viii) of this Chapter, the will require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.
- 264.193(i) (ix) All tank systems, until such time as secondary containment that meets the requirements of Section 9(d) of this Chapter is provided, must comply with the following:
- 264.193(i)(1) (A) For non-enterable underground tanks, a leak test that meets the requirements of Section 9(b)(ii)(E) of this Chapter or other tank integrity method, as approved or required by the Director, must be conducted at least annually.
- 264.193(i)(2) (B) For other than non-enterable underground tanks, the owner or operator must either conduct a leak test as in Section 9(d)(ix)(A) of this Chapter or develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified registered professional engineer. The schedule and procedure must be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed. The frequency of these assessments must be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection, and the characteristics of the waste being stored or treated.
- 264.193(i)(3) (C) For ancillary equipment, a leak test or other integrity assessment as approved by the Director must be conducted at least annually.

[Note: The practices described in the American Petroleum Institute (API) Publication Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks," 4th edition, 1981, may be used, where applicable, as guidelines for assessing the overall condition of the tank system.]

264.193(i)(4) (D) The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with Sections 9(d)(ix)(A) through 9(d)(ix)(C) of this Chapter.

264.193(i)(5) (E) If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in Sections 9(d)(ix)(A) through 9(d)(ix)(C) of this Chapter, the owner or operator must comply with the requirements of Section 9(g) of this Chapter.

264.194 (e) GENERAL OPERATING REQUIREMENTS.

264.194(a) (i) Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.

264.194(b) (ii) The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:

264.194(b)(1) (A) Spill prevention controls (e.g., check valves, dry disconnect couplings);

264.194(b)(2) (B) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

264.194(b)(3) (C) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

264.194(c) (iii) The owner or operator must comply with the requirements of Section 9(g) of this Chapter if a leak or spill occurs in the tank system.

264.195 (f) INSPECTIONS.

264.195(a) (i) The owner or operator must develop and follow a schedule and procedure for inspecting overfill controls.

264.195(b) (ii) The owner or operator must inspect at least once each operating day:

264.195(b)(1) (A) Aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

264.195(b)(2) (B) Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design; and

264.195(b)(3) (C) The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

[Note: Section 2(f)(iii) of this Chapter requires the owner or operator to remedy any deterioration or malfunction he or she finds. Section 9(g) of this Chapter requires the owner or operator to notify the Director within 24 hours of confirming a leak. Also, 40 CFR part 302 may require the owner or operator to notify the National Response Center of a release.]

264.195(c) (iii) The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

264.195(c)(1) (A) The proper operation of the cathodic protection system must be confirmed within six months after initial installation and annually thereafter; and

264.195(c)(2) (B) All sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

[Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85) -- Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems," and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems," may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.]

264.195(d) (iv) The owner or operator must document in the operating record of the facility an inspection of those items in Sections 9(f)(i) through (iii) of this Chapter.

264.196 (g) RESPONSE TO LEAKS OR SPILLS AND DISPOSITION OF LEAKING OR UNFIT-FOR-USE TANK SYSTEMS. A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

264.196(a) (i) Cessation of use; prevent flow or addition of wastes. The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

264.196(b) (ii) Removal of waste from tank system or secondary containment system.

264.196(b)(1) (A) If the release was from the tank system, the owner/operator must, within 24 hours after detection of the leak or, if the owner/operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

- 264.195(b)(2) (B) If the material released was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.
- 264.196(c) (iii) Containment of visible releases to the environment. The owner/operator must immediately conduct a visual inspection of the release and, based upon that inspection:
- 264.196(c)(1) (A) Prevent further migration of the leak or spill to soils or surface water; and
- 264.196(c)(2) (B) Remove, and properly dispose of, any visible contamination of the soil or surface water.
- 264.196(d) (iv) Notifications, reports.
- 264.196(d)(1) (A) Any release to the environment, except as provided in Section 9(g)(iv)(B) of this Chapter, must be reported to the Director within 24 hours of its detection. If the release has been reported pursuant to 40 CFR part 302, that report will satisfy this requirement.
- 264.196(d)(2) (B) A leak or spill of hazardous waste is exempted from the requirements of Section 9(g)(iv) of this Chapter if it is:
- ...(i) (I) Less than or equal to a quantity of one (1) pound, and
- ...(ii) (II) Immediately contained and cleaned up.
- 264.196(d)(3) (C) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Director:
- ...(i) (I) Likely route of migration of the release;
- ...(ii) (II) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);
- ...(iii) (III) Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Director as soon as they become available.
- ...(iv) (IV) Proximity to downgradient drinking water, surface water, and populated areas; and
- ...(v) (V) Description of response actions taken or planned.
- 264.196(e) (v) Provision of secondary containment, repair, or closure.
- 264.196(e)(1) (A) Unless the owner/operator satisfies the

requirements of Sections 9(g)(v)(B) through (D) of this Chapter, the tank system must be closed in accordance with Section 9(h) of this Chapter.

264.196(e)(2) (B) If the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

264.196(e)(3) (C) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

264.196(e)(4) (D) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of Section 9(d) of this Chapter before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of Section 9(g)(vi) of this Chapter are satisfied. If a component is replaced to comply with the requirements of Section 9(g)(v)(D) of this Chapter, that component must satisfy the requirements for new tank systems or components in Sections 9(c) and 9(d) of this Chapter. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with Section 9(d) of this Chapter prior to being returned to use.

264.196(f) (vi) Certification of major repairs. If the owner/operator has repaired a tank system in accordance with Section 9(g)(v) of this Chapter, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner/operator has obtained a certification by an independent, qualified, registered, professional engineer in accordance with Chapter 3, Section 2(b)(iv) of these rules and regulations that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be submitted to the Director within seven days after returning the tank system to use.

[Note: The Director or EPA Regional Administrator may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under W.S. 35-11-503(d) and Section 6(1)(iii) of this Chapter; Chapter 11, Section 8(f); Chapter 1, Section 1(k)(i); RCRA Section 3008(h); or RCRA Section 7003(a) requiring corrective action or such other response as deemed necessary to protect human health or the environment.]

[Note: See Section 2(f)(iii) of this Chapter for the requirements necessary to remedy a failure. Also, 40 CFR part 302 may require the

owner or operator to notify the National Response Center of certain releases.]

264.197 (h) CLOSURE AND POST-CLOSURE CARE.

264.197(a) (i) At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless Chapter 2, Section 1(c)(iv) of these rules and regulations applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in Section 7 of this Chapter and Chapter 5 of these rules and regulations.

264.197(b) (ii) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in Section 9(h)(i) of this Chapter, then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (Section 13(k) of this Chapter). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in Section 7 of this Chapter and Chapter 5 of these rules and regulations.

264.197(c) (iii) If an owner or operator has a tank system that does not have secondary containment that meets the requirements of Sections 9(d)(ii) through (vi) of this Chapter and has not been granted a variance from the secondary containment requirements in accordance with Section 9(d)(vii) of this Chapter, then:

264.197(c)(1) (A) The closure plan for the tank system must include both a plan for complying with Section 9(h)(i) of this Chapter and a contingent plan for complying with Section 9(h)(ii) of this Chapter.

264.197(c)(2) (B) A contingent post-closure plan for complying with Section 9(h)(ii) of this Chapter must be prepared and submitted as part of the permit application.

264.197(c)(3) (C) The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under Section 9(h)(i) of this Chapter.

264.197(c)(4) (D) Financial assurance must be based on the cost estimates in Section 9(h)(iii)(C) of this Chapter.

264.197(c)(5) (E) For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under Section 7 of this Chapter and Chapter 5 of these rules and regulations.

- 264.198 (i) SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTES.
- 264.198(a) (i) Ignitable or reactive waste must not be placed in tank systems, unless:
- 264.198(a)(1) (A) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:
- ... (i) (I) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under Chapter 2, Section 3(b) or 3(d) of these rules and regulations, and
- ... (ii) (II) Section 2(h)(ii) of this Chapter is complied with; or
- 264.198(a)(2) (B) The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or
- 264.198(a)(3) (C) The tank system is used solely for emergencies.
- 264.198(b) (ii) The owner or operator of a facility where ignitable or reactive waste is stored or treated in a tank must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981), (incorporated by reference, see Chapter 1, Section 1(g) of these rules and regulations).
- 264.199 (j) SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES.
- 264.199(a) (i) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless Section 2(h)(ii) of this Chapter is complied with.
- 264.199(b) (ii) Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless Section 2(h)(ii) of this Chapter is complied with.
- 264.200 (k) AIR EMISSION STANDARDS. The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of Sections 26, 27 and 28 of this Chapter.
- 264/Subpart K Section 10. SURFACE IMPOUNDMENTS
- 264.220 (a) APPLICABILITY. The regulations in this Section apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste except as Section 1(a) of this Chapter provides otherwise.
- 264.221 (b) DESIGN AND OPERATING REQUIREMENTS.
- 264.221(a) (i) Any surface impoundment that is not covered by Section 10(b)(iii) of this Chapter or Chapter 11, Section 12(b) of

these rules and regulations must have a liner for all portions of the impoundment (except for existing portions of such impoundments). The liner must be designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with Section 10(i)(i)(A) of this Chapter. For impoundments that will be closed in accordance with Section 10(i)(i)(B) of this Chapter, the liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner must be:

- 264.221(a)(1) (A) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;
- 264.221(a)(2) (B) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and
- 264.221(a)(3) (C) Installed to cover all surrounding earth likely to be in contact with the waste or leachate.
- 264.221(b) (ii) The owner or operator will be exempted from the requirements of Section 10(b)(i) of this Chapter if the Director finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see Section 6(d) of this Chapter) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Director will consider:
 - 264.221(b)(1) (A) The nature and quantity of the wastes;
 - 264.221(b)(2) (B) The proposed alternate design and operation;
 - 264.221(b)(3) (C) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the impoundment and ground water or surface water; and
 - 264.221(b)(4) (D) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.
- 264.221(c) (iii) The owner or operator of each new surface impoundment unit on which construction commences after January 29, 1992, each lateral expansion of a surface impoundment unit on which construction commences after July 29, 1992 and each replacement of an existing surface impoundment unit that is to commence reuse after

July 29, 1992 must install two or more liners and a leachate collection and removal system between such liners. "Construction commences" is as defined in Chapter 1, Section 1(f)(i) of these rules and regulations under "existing hazardous waste management facility" or "existing facility".

(A) The liner system.

264.221(c)(1)(i)

(I) The liner system must include:

...(i)(A)

(1.) A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

...(i)(B)

(2.) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} /cm/sec.

...(ii)

(II) The liners must comply with Sections 10(b)(i)(A), (B), and (C) of this Chapter.

264.221(c)(2)

(B) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in Section 10(b)(iii) of this Chapter are satisfied by installation of a system that is, at a minimum:

...(i)

(I) Constructed with a bottom slope of one percent or more;

...(ii)

(II) Constructed of granular drainage materials with a hydraulic conductivity of 1×10^{-1} /cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-4} /m²/sec or more;

...(iii)

(III) Constructed of materials that are chemically resistant to the waste managed in the surface impoundment and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes and any waste cover materials or equipment used at the surface impoundment;

...(iv)

(IV) Designed and operated to minimize clogging during the active life and post-closure care period; and

- ...(v) (V) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.
- 264.221(c)(3) (C) The owner or operator shall collect and remove pumpable liquids in the sumps to minimize the head on the bottom liner.
- 264.221(c)(4) (D) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.
- 264.221(d) (iv) The Director may approve alternative design or operating practices to those specified in Section 10(b)(iii) of this Chapter if the owner or operator demonstrates to the Director that such design and operating practices, together with location characteristics:
- 264.221(d)(1) (A) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal system specified in Section 10(b)(iii) of this Chapter; and
- 264.221(d)(2) (B) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.
- 264.221(e) (v) The double liner requirement set forth in Section 10(b)(iii) of this Chapter may be waived by the Director for any monofill, if:
- 264.221(e)(1) (A) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the toxicity characteristics in Chapter 2, Section 3(e) of these rules and regulations; and
- (B) Either:
- 264.221(e)(2)(i)(A) (I) The monofill:
- 264.221(e)(2)(i)(A) (1.) has at least one liner for which there is no evidence that such liner is leaking. For the purposes of Section 10(b)(v) of this Chapter, the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of Section 10(b)(iii) of this Chapter on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from

passing beyond the liner, at the closure of such impoundment, the owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment will comply with appropriate post-closure requirements, including but not limited to ground-water monitoring and corrective action;

- ...(i)(B) (2.) The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in Chapter 1, Section 1(f)(i) of these rules and regulations); and
- ...(i)(C) (3.) The monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with permits under W.S. 35-11-503(d); W.S. 35-11-801; Chapter 4, Section 2(a) of these rules and regulations; and RCRA Section 3005(c); or
- ...(ii) (II) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.
- 264.221(f) (vi) The owner or operator of any replacement surface impoundment unit is exempt from Section 10(b)(iii) of this Chapter if:
- 264.221(f)(1) (A) The existing unit was constructed in compliance with the design standards of Chapter 10, Sections 10(b)(iii) and 13(b)(iii); Chapter 11, Sections 12(b)(i) and 15(b)(i); W.S. 35-11-503(d); and RCRA Section 3004(o)(5); and
- 264.221(f)(2) (B) There is no reason to believe that the liner is not functioning as designed.
- 264.221(g) (vii) A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error.
- 264.221(h) (viii) A surface impoundment must have dikes that are designed, constructed, and maintained with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.
- 264.221(i) (ix) The Director will specify in the permit all design and operating practices that are necessary to ensure that the requirements of Section 10(b) of this Chapter are satisfied.
- RCRA3005(j)(1) (x) **Existing surface impoundments subject to Subtitle C prior to November 8, 1984, must comply with new unit requirements by November 8, 1988 or stop hazardous waste activity.**

RCRA3005(j)(6) (xi) Surface impoundments regulated for the first time by a listing or characteristic promulgated after November 8, 1984, must comply with new unit requirements or stop hazardous waste activity by four (4) years after the date of promulgation of the new listing or characteristic.

RCRA3005(j)(7)(B) (xii) Surface impoundments regulated for the first time by a listing or characteristic promulgated after November 8, 1984, where the Director determines hazardous constituents are likely to migrate into groundwater, the Director is authorized to impose such requirements as may be necessary to protect human health and the environment, including requiring compliance with new unit requirements.

264.222 (c) ACTION LEAKAGE RATE.

264.222(a) (i) The Director shall approve an action leakage rate for surface impoundment units subject to Sections 10(b)(iii) or (iv) of this Chapter. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

264.222(b) (ii) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under Section 10(g)(iv) of this Chapter to an average daily flow rate (gallons per acre per day) for each sump. Unless the Director approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and if the unit is closed in accordance with Section 10(i)(ii) of this Chapter, monthly during the post-closure care period when monthly monitoring is required under Section 10(g)(iv) of this Chapter.

264.223 (d) RESPONSE ACTIONS.

264.223(a) (i) The owner or operator of surface impoundment units subject to Sections 10(b)(iii) or (iv) of this Chapter must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in Section 10(d)(ii) of this Chapter.

264.223(b) (ii) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

264.223(b)(1) (A) Notify the Director in writing of the exceedence within 7 days of the determination;

- 264.223(b)(2) (B) Submit a preliminary written assessment to the Director within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
- 264.223(b)(3) (C) Determine to the extent practicable the location, size, and cause of any leak;
- 264.223(b)(4) (D) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
- 264.223(b)(5) (E) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and
- 264.223(b)(6) (F) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Director the results of the analyses specified in Sections 10(d)(ii)(C), (D), and (E) of this Chapter, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Director a report summarizing the results of any remedial actions taken and actions planned.
- 264.223(c) (iii) To make the leak and/or remediation determinations in Sections 10(d)(ii)(C), (D), and (E) of this Chapter, the owner or operator must:
- (A) Conduct the following activities:
- 264.223(c)(1)(i) (I) Assess the source of liquids and amounts of liquids by source,
- ...(ii) (II) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
- ...(iii) (III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- 264.223(c)(2) (B) Document why such assessments are not needed.
- 264.224 (e) RESERVED.
- 264.225 (f) RESERVED.
- 264.226 (g) MONITORING AND INSPECTION.
- 264.226(a) (i) During construction and installation, liners (except in the case of existing portions of surface impoundments exempt from Section 10(b)(i) of this Chapter) and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

- 264.226(a)(1) (A) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and
- 264.226(a)(2) (B) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.
- 264.226(b) (ii) While a surface impoundment is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:
- 264.226(b)(1) (A) Deterioration, malfunctions, or improper operation of overtopping control systems;
- 264.226(b)(2) (B) Sudden drops in the level of the impoundment's contents; and
- 264.226(b)(3) (C) Severe erosion or other signs of deterioration in dikes or other containment devices.
- 264.226(c) (iii) Prior to the issuance of a permit, and after any extended period of time (at least six months) during which the impoundment was not in service, the owner or operator must obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification must establish, in particular, that the dike:
- 264.226(c)(1) (A) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment; and
- 264.226(c)(2) (B) Will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.
- 264.226(d)(1) (iv) An owner or operator required to have a leak detection system under Sections 10(b)(iii) or (iv) of this Chapter must:
- 264.226(d)(1) (A) Record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.
- 264.226(d)(2) (B) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

- 264.226(d)(3) (C) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Director based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.
- 264.227 (h) EMERGENCY REPAIRS; CONTINGENCY PLANS.
- 264.227(a) (i) A surface impoundment must be removed from service in accordance with Section 10(h)(ii) of this Chapter when:
- 264.227(a)(1) (A) The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment; or
- 264.227(a)(2) (B) The dike leaks.
- 264.227(b) (ii) When a surface impoundment must be removed from service as required by Section 10(h)(i) of this Chapter, the owner or operator must:
- 264.227(b)(1) (A) Immediately shut off the flow or stop the addition of wastes into the impoundment;
- 264.227(b)(2) (B) Immediately contain any surface leakage which has occurred or is occurring;
- 264.227(b)(3) (C) Immediately stop the leak;
- 264.227(b)(4) (D) Take any other necessary steps to stop or prevent catastrophic failure;
- 264.227(b)(5) (E) If a leak cannot be stopped by any other means, empty the impoundment; and
- 264.227(b)(6) (F) Notify the Director of the problem in writing within seven days after detecting the problem.
- 264.227(c) (iii) As part of the contingency plan required in Section 4 of this Chapter, the owner or operator must specify a procedure for complying with the requirements of Section 10(h)(ii) of this Chapter.
- 264.227(d) (iv) No surface impoundment that has been removed from service in accordance with the requirements of Section 10(h) of this Chapter may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:
- 264.227(d)(1) (A) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with Section 10(g)(iii) of this Chapter.
- 264.227(d)(2) (B) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:
- ...(i) (I) For any existing portion of the impoundment, a liner must be installed in compliance with Section

10(b)(i) of this Chapter; and

- ...
 - (ii) (II) For any other portion of the impoundment, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.
- 264.227(e) (v) A surface impoundment that has been removed from service in accordance with the requirements of Section 10(h) of this Chapter and that is not being repaired must be closed in accordance with the provisions of Section 10(i) of this Chapter.
- 264.228 (i) CLOSURE AND POST-CLOSURE CARE.
- 264.228(a) (i) At closure, the owner or operator must:
 - 264.228(a)(1) (A) Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Chapter 2, Section 1(c)(iv) of these rules and regulations applies; or
 - (B) The owner/operator:
 - 264.228(a)(2)(i) (I) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;
 - ...
 - (ii) (II) Stabilize remaining wastes to a bearing capacity sufficient to support final cover; and
 - ...
 - (iii) (III) Cover the surface impoundment with a final cover designed and constructed to:
 - ...
 - (iii)(A) (1.) Provide long-term minimization of the migration of liquids through the closed impoundment;
 - ...
 - (iii)(B) (2.) Function with minimum maintenance;
 - ...
 - (iii)(C) (3.) Promote drainage and minimize erosion or abrasion of the final cover;
 - ...
 - (iii)(D) (4.) Accommodate settling and subsidence so that the cover's integrity is maintained; and
 - ...
 - (iii)(E) (5.) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
 - 264.228(b) (ii) If some waste residues or contaminated materials are left in place at final closure, the owner or operator must comply with all post-closure requirements contained in Sections 7(h) through (k) of this Chapter, including maintenance and monitoring throughout the post-closure care period (specified in the permit under Section 7(h) of this Chapter). The owner or operator must:
 - 264.228(b)(1) (A) Maintain the integrity and effectiveness of

the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

264.228(b)(2) (B) Maintain and monitor the leak detection system in accordance with Sections 10(b)(iii)(B)(IV) and 10(b)(iii)(C) and 10(g)(iv) of this Chapter, and comply with all other applicable leak detection system requirements of this Chapter;

264.228(b)(3) (C) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of Section 6 of this Chapter; and

264.228(b)(4) (D) Prevent run-on and run-off from eroding or otherwise damaging the final cover.

(iii) Closure of a surface impoundment:

264.228(c)(1) (A) If an owner or operator plans to close a surface impoundment in accordance with Section 10(i)(i)(A) of this Chapter, and the impoundment does not comply with the liner requirements of Section 10(b)(i) of this Chapter and is not exempt from them in accordance with Section 10(b)(ii) of this Chapter, then:

...(i) (I) The closure plan for the impoundment under Section 7(c) of this Chapter must include both a plan for complying with Section 10(i)(i)(A) of this Chapter and a contingent plan for complying with Section 10(i)(i)(B) of this Chapter in case not all contaminated subsoils can be practicably removed at closure; and

...(ii) (II) The owner or operator must prepare a contingent post-closure plan under Section 7(i) of this Chapter for complying with Section 10(i)(ii) of this Chapter in case not all contaminated subsoils can be practicably removed at closure.

264.228(c)(2) (B) The cost estimates calculated under Chapter 5, Section 1(c) of these rules and regulations for closure and post-closure care of an impoundment subject to Section 10(i)(iii) of this Chapter must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under Section 10(i)(i)(A) of this Chapter.

264.229 (j) SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE. Ignitable or reactive waste must not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of Chapter 13 of these rules and regulations, and:

264.229(a) (i) The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

264.229(a)(1) (A) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Chapter 2, Section 3(b) or 3(d) of these rules and regulations; and

264.229(a)(2) (B) Section 2(h)(ii) of this Chapter is complied

with; or

- 264.229(b) (ii) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; or
- 264.229(c) (iii) The surface impoundment is used solely for emergencies.
- 264.230 (k) SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES.
- (i) Incompatible wastes, or incompatible wastes and materials, (see Appendix E of this Chapter for examples) must not be placed in the same surface impoundment, unless Section 2(h)(ii) of this Chapter is complied with.
- 264.231 (l) SPECIAL REQUIREMENTS FOR HAZARDOUS WASTES FO20, FO21, FO22, FO23, FO26, AND FO27.
- 264.231(a) (i) Hazardous Wastes F020, F021, F022, F023, F026, and F027 must not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the Director pursuant to the standards set out in Section 10(l)(i) of this Chapter, and in accord with all other applicable requirements of this Chapter and Chapter 5 of these rules and regulations. The factors to be considered are:
- 264.231(a)(1) (A) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;
- 264.231(a)(2) (B) The attenuative properties of underlying and surrounding soils or other materials;
- 264.231(a)(3) (C) The mobilizing properties of other materials co-disposed with these wastes; and
- 264.231(a)(4) (D) The effectiveness of additional treatment, design, or monitoring techniques.
- 264.231(b) (ii) The Director may determine that additional design, operating, and monitoring requirements are necessary for surface impoundments managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.
- 264.232 (m) AIR EMISSION STANDARDS.
- (i) The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the applicable requirements of Sections ~~26~~, 27 and 28 of this Chapter.
- 264/Subpart L Section 11. WASTE PILES
- 264.250 (a) APPLICABILITY.
- 264.250(a) (i) The regulations in this Section apply to owners

and operators of facilities that store or treat hazardous waste in piles, except as Section 1(a) of this Chapter provides otherwise.

264.250(b) (ii) The regulations in this Section do not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation under Section 13 of this Chapter (Landfills).

264.250(c) (iii) The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under Section 11(b) of this Chapter or under Section 6 of this Chapter, provided that:

264.250(c)(1) (A) Liquids or materials containing free liquids are not placed in the pile;

264.250(c)(2) (B) The pile is protected from surface water run-on by the structure or in some other manner;

264.250(c)(3) (C) The pile is designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and

264.250(c)(4) (D) The pile will not generate leachate through decomposition or other reactions.

264.251 (b) DESIGN AND OPERATING REQUIREMENTS.

264.251(a) (i) A waste pile (except for an existing portion of a waste pile) must have:

264.251(a)(1) (A) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the pile into the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the waste pile. The liner may be constructed of materials that may allow waste to migrate into the liner itself (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility. The liner must be:

...(i) (I) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

...(ii) (II) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

...(iii) (III) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

264.251(a)(2) (B) A leachate collection and removal system immediately above the liner that is designed, constructed,

maintained, and operated to collect and remove leachate from the pile. The Director will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

- ... (i) (I) Constructed of materials that are:
 - ... (i)(A) (1.) Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and
 - ... (i)(B) (2.) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the pile; and
 - ... (ii) (II) Designed and operated to function without clogging through the scheduled closure of the waste pile.
- 264.251(b) (ii) The owner or operator will be exempted from the requirements of Section 11(b)(i) of this Chapter, if the Director finds, based on a demonstration by the owner or operator, that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see Section 6(d) of this Chapter) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Director will consider:
- 264.251(b)(1) (A) The nature and quantity of the wastes;
 - 264.251(b)(2) (B) The proposed alternate design and operation;
 - 264.251(b)(3) (C) The hydrogeologic setting of the facility, including attenuative capacity and thickness of the liners and soils present between the pile and ground water or surface water; and
 - 264.251(b)(4) (D) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.
- 264.251(c) (iii) The owner or operator of each new waste pile unit on which construction commences after January 29, 1992, each lateral expansion of a waste pile unit on which construction commences after July 29, 1992, and each replacement of an existing waste pile unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners. "Construction commences" is as defined in Chapter 1, Section 1(f)(i) of these rules and regulations under "existing hazardous waste management facility" or "existing facility".
- (A) Components of a liner system:
 - 264.251(c)(1)(i) (I) The liner system must include:
 - ... (i)(A) (1.) A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the

active life and post-closure care period; and

- ...(i)(B) (2.) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.
- ...(ii) (II) The liners must comply with Sections 11(b)(i)(A)(I), (II), and (III) of this Chapter.
- 264.251(c)(2) (B) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and post-closure care period. The Director will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must comply with Sections 11(b)(iii)(C)(III) and (IV) of this Chapter.
- 264.251(c)(3) (C) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in Section 11(b)(iii) of this Chapter are satisfied by installation of a system that is, at a minimum:
- ...(i) (I) Constructed with a bottom slope of one percent or more;
- ...(ii) (II) Constructed of granular drainage materials with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m²/sec or more;
- ...(iii) (III) Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;
- ...(iv) (IV) Designed and operated to minimize clogging during the active life and post-closure care period; and
- ...(v) (V) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The

design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

- 264.251(c)(4) (D) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.
- 264.251(c)(5) (E) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.
- 264.251(d) (iv) The Director may approve alternative design or operating practices to those specified in Section 11(b)(iii) of this Chapter if the owner or operator demonstrates to the Director that such design and operating practices, together with location characteristics:
- 264.251(d)(1) (A) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in Section 11(b)(iii) of this Chapter; and
- 264.251(d)(2) (B) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.
- 264.251(e) (v) Section 11(b)(iii) of this Chapter does not apply to monofills that are granted a waiver by the Director in accordance with Section 10(b)(v) of this Chapter.
- 264.251(f) (vi) The owner or operator of any replacement waste pile unit is exempt from Section 11(b)(iii) of this Chapter if:
- 264.251(f)(1) (A) The existing unit was constructed in compliance with the design standards of Chapter 10, Sections 10(b)(iii) and 13(b)(iii) and Chapter 11, Sections 12(b)(i) and 15(b)(i) of these rules and regulations; W.S. 35-11-503(d); and RCRA Section 3004(o)(5); and
- 264.251(f)(2) (B) There is no reason to believe that the liner is not functioning as designed.
- 264.251(g) (vii) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.
- 264.251(h) (viii) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.
- 264.251(i) (ix) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

- 264.251(j) (x) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.
- 264.251(k) (xi) The Director will specify in the permit all design and operating practices that are necessary to ensure that the requirements of Section 11(b) of this Chapter are satisfied.
- 264.252 (c) ACTION LEAKAGE RATE.
- 264.252(a) (i) The Director shall approve an action leakage rate for surface impoundment units subject to Section 11(b)(iii) or (iv) of this Chapter. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).
- 264.252(b) (ii) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under Section 11(e)(iii) of this Chapter to an average daily flow rate (gallons per acre per day) for each sump. Unless the Director approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.
- 264.253 (d) RESPONSE ACTIONS.
- 264.253(a) (i) The owner or operator of waste pile units subject to Section 11(b)(iii) or (iv) of this Chapter must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in Section 11(d)(ii) of this Chapter.
- 264.253(b) (ii) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:
- 264.253(b)(1) (A) Notify the Director in writing of the exceedance within 7 days of the determination;
- 264.253(b)(2) (B) Submit a preliminary written assessment to the Director within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;
- 264.253(b)(3) (C) Determine to the extent practicable the location, size, and cause of any leak;

- 264.253(b)(4) (D) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;
- 264.253(b)(5) (E) Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and
- 264.253(b)(6) (F) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Director the results of the analyses specified in Sections 11(d)(ii)(C), (D), and (E) of this Chapter, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Director a report summarizing the results of any remedial actions taken and actions planned.
- 264.253(c) (iii) To make the leak and/or remediation determinations in Sections 11(d)(ii)(C), (D), and (E) of this Chapter, the owner or operator must:
- (A) Conduct the following activities:
- 264.253(c)(1)(I) (I) Assess the source of liquids and amounts of liquids by source,
- ...(ii) (II) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
- ...(iii) (III) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- 264.253(c)(2) (B) Document why such assessments are not needed.
- 264.254 (e) MONITORING AND INSPECTION.
- 264.254(a) (i) During construction or installation, liners (except in the case of existing portions of piles exempt from Section 11(b)(i) of this Chapter) and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:
- 264.254(a)(1) (A) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and
- 264.254(a)(2) (B) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.
- 264.254(b) (ii) While a waste pile is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

- 264.254(b)(1) (A) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;
- 264.254(b)(2) (B) Proper functioning of wind dispersal control systems, where present; and
- 264.254(b)(3) (C) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.
- 264.254(c) (iii) An owner or operator required to have a leak detection system under Section 11(b)(iii) of this Chapter must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.
- 264.255 (f) RESERVED.
- 264.256 (g) SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE. Ignitable or reactive waste must not be placed in a waste pile unless the waste and waste pile satisfy all applicable requirements of Chapter 13 of these rules and regulations, and:
- 264.256(a) (i) The waste is treated, rendered, or mixed before or immediately after placement in the pile so that:
- 264.256(a)(1) (A) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Chapter 2, Section 3(b) or 3(d) of these rules and regulations; and
- 264.256(a)(2) (B) Section 2(h)(ii) of this Chapter is complied with; or
- 264.256(b) (ii) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.
- 264.257 (h) SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES.
- 264.257(a) (i) Incompatible wastes, or incompatible wastes and materials, (see Appendix E of this Chapter for examples) must not be placed in the same pile, unless Section 2(h)(ii) of this Chapter is complied with.
- 264.257(b) (ii) A pile of hazardous waste that is incompatible with any waste or other material stored nearby in containers, other piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.
- 264.257(c) (iii) Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with Section 2(h)(ii) of this Chapter.
- 264.258 (i) CLOSURE AND POST-CLOSURE CARE.
- 264.258(a) (i) At closure, the owner or operator must remove or

decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Chapter 2, Section 1(c)(iv) of these rules and regulations applies.

264.258(b) (ii) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in Section 11(i)(i) of this Chapter, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (Section 13(k) of this Chapter).

264.258(c)(1) (iii) The owner or operator of a waste pile that does not comply with the liner requirements of Section 11(b)(i)(A) of this Chapter and is not exempt from them in accordance with Section 11(a)(iii) or Section 11(b)(ii) of this Chapter, must:

...(i) (A) Include in the closure plan for the pile under Section 7(c) of this Chapter both a plan for complying with Section 11(i)(i) of this Chapter and a contingent plan for complying with Section 11(i)(ii) of this Chapter in case not all contaminated subsoils can be practicably removed at closure; and

...(ii) (B) Prepare a contingent post-closure plan under Section 7(i) of this Chapter for complying with Section 11(i)(ii) of this Chapter in case not all contaminated subsoils can be practicably removed at closure.

264.258(c)(2) (iv) The cost estimates calculated under Chapter 5, Section 1(c) of these rules and regulations for closure and post-closure care of a pile subject to Section 11(i)(iii) of this Chapter must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under Section 11(i)(i) of this Chapter.

264.259 (j) SPECIAL REQUIREMENTS FOR HAZARDOUS WASTES F020, F021, F022, F023, F026, AND F027.

264.259(a) (i) Hazardous Wastes F020, F021, F022, F023, F026, and F027 must not be placed in waste piles that are not enclosed (as defined in Section 11(a)(iii) of this Chapter) unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the Director pursuant to the standards set out in Section 11(j)(i) of this Chapter, and in accord with all other applicable requirements of this Chapter and Chapter 5 of these rules and regulations. The factors to be considered are:

264.259(a)(1) (A) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;

264.259(a)(2) (B) The attenuative properties of underlying and surrounding soils or other materials;

264.259(a)(3) (C) The mobilizing properties of other materials co-disposed with these wastes; and

264.259(a)(4) (D) The effectiveness of additional treatment, design, or monitoring techniques.

264.259(b) (ii) The Director may determine that additional design, operating, and monitoring requirements are necessary for piles managing hazardous wastes F020, F021, F022, F023, F026, and, F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

264/Subpart M Section 12. LAND TREATMENT

264.270 (a) APPLICABILITY. The regulations in this Section apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as Section 1(a) of this Chapter provides otherwise.

264.271 (b) TREATMENT PROGRAM.

264.271(a) (i) An owner or operator subject to this Section must establish a land treatment program that is designed to ensure that hazardous constituents placed in or on the treatment zone are degraded, transformed, or immobilized within the treatment zone. The Director will specify in the facility permit the elements of the treatment program, including:

264.271(a)(1) (A) The wastes that are capable of being treated at the unit based on a demonstration under Section 12(c) of this Chapter;

264.271(a)(2) (B) Design measures and operating practices necessary to maximize the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with Section 12(d)(i) of this Chapter; and

264.271(a)(3) (C) Unsaturated zone monitoring provisions meeting the requirements of Section 12(i) of this Chapter.

264.271(b) (ii) The Director will specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized under this Section. Hazardous constituents are constituents identified in Chapter 2, Appendix H of these rules and regulations that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

264.271(c) (iii) The Director will specify the vertical and horizontal dimensions of the treatment zone in the facility permit. The treatment zone is the portion of the unsaturated zone below and including the land surface in which the owner or operator intends to maintain the conditions necessary for effective degradation, transformation, or immobilization of hazardous constituents. The maximum depth of the treatment zone must be:

264.271(c)(1) (A) No more than 1.5 meters (5 feet) from the initial soil surface; and

- 264.271(c)(2) (B) More than 1 meter (3 feet) above the seasonal high water table.
- 264.272 (c) TREATMENT DEMONSTRATION.
- 264.272(a) (i) For each waste that will be applied to the treatment zone, the owner or operator must demonstrate, prior to application of the waste, that hazardous constituents in the waste can be completely degraded, transformed, or immobilized in the treatment zone.
- 264.272(b) (ii) In making this demonstration, the owner or operator may use field tests, laboratory analyses, available data, or, in the case of existing units, operating data. If the owner or operator intends to conduct field tests or laboratory analyses in order to make the demonstration required under Section 12(c)(i) of this Chapter, he or she must obtain a treatment or disposal permit under Chapter 7, Section 1(d) of these rules and regulations. The Director will specify in this permit the testing, analytical, design, and operating requirements (including the duration of the tests and analyses, and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure and clean-up activities) necessary to meet the requirements in Section 12(c)(iii) of this Chapter.
- 264.272(c) (iii) Any field test or laboratory analysis conducted in order to make a demonstration under Section 12(c)(i) of this Chapter must:
- 264.272(c)(1) (A) Accurately simulate the characteristics and operating conditions for the proposed land treatment unit including:
- ...(i) (I) The characteristics of the waste (including the presence of Chapter 2, Appendix H of these rules and regulations constituents);
 - ...(ii) (II) The climate in the area;
 - ...(iii) (III) The topography of the surrounding area;
 - ...(iv) (IV) The characteristics of the soil in the treatment zone (including depth); and
 - ...(v) (V) The operating practices to be used at the unit.
- 264.272(c)(2) (B) Be likely to show that hazardous constituents in the waste to be tested will be completely degraded, transformed, or immobilized in the treatment zone of the proposed land treatment unit; and
- 264.272(c)(3) (C) Be conducted in a manner that protects human health and the environment considering:
- ...(i) (I) The characteristics of the waste to be tested;

- ...(ii) (II) The operating and monitoring measures taken during the course of the test;
 - ...(iii) (III) The duration of the test;
 - ...(iv) (IV) The volume of waste used in the test;
 - ...(v) (V) In the case of field tests, the potential for migration of hazardous constituents to ground water or surface water.
- 264.273 (d) DESIGN AND OPERATING REQUIREMENTS. The Director will specify in the facility permit how the owner or operator will design, construct, operate, and maintain the land treatment unit in compliance with Section 12(d) of this Chapter.
- 264.273(a) (i) The owner or operator must design, construct, operate, and maintain the unit to maximize the degradation, transformation, and immobilization of hazardous constituents in the treatment zone. The owner or operator must design, construct, operate, and maintain the unit in accord with all design and operating conditions that were used in the treatment demonstration under Section 12(c) of this Chapter. At a minimum, the Director will specify the following in the facility permit:
- 264.273(a)(1) (A) The rate and method of waste application to the treatment zone;
 - 264.273(a)(2) (B) Measures to control soil pH;
 - 264.273(a)(3) (C) Measures to enhance microbial or chemical reactions (e.g., fertilization, tilling); and
 - 264.273(a)(4) (D) Measures to control the moisture content of the treatment zone.
- 264.273(b) (ii) The owner or operator must design, construct, operate, and maintain the treatment zone to minimize run-off of hazardous constituents during the active life of the land treatment unit.
- 264.273(c) (iii) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a 25-year storm.
- 264.273(d) (iv) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.
- 264.273(e) (v) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.
- 264.273(f) (vi) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

- 264.273(g) (vii) The owner or operator must inspect the unit weekly and after storms to detect evidence of:
- 264.273(g)(1) (A) Deterioration, malfunctions, or improper operation of run-on and run-off control systems; and
- 264.273(g)(2) (B) Improper functioning of wind dispersal control measures.
- 264.274 (e) RESERVED.
- 264.275 (f) RESERVED.
- 264.276 (g) FOOD-CHAIN CROPS. The Director may allow the growth of food-chain crops in or on the treatment zone only if the owner or operator satisfies the conditions of Section 12(g) of this Chapter. The Director will specify in the facility permit the specific food-chain crops which may be grown.
- (i) Demonstration:
- 264.276(a)(1) (A) The owner or operator must demonstrate that there is no substantial risk to human health caused by the growth of such crops in or on the treatment zone by demonstrating, prior to the planting of such crops, that hazardous constituents other than cadmium:
- ... (i) (I) Will not be transferred to the food or feed portions of the crop by plant uptake or direct contact, and will not otherwise be ingested by food-chain animals (e.g., by grazing); or
- ... (ii) (II) Will not occur in greater concentrations in or on the food or feed portions of crops grown on the treatment zone than in or on identical portions of the same crops grown on untreated soils under similar conditions in the same region.
- 264.276(a)(2) (B) The owner or operator must make the demonstration required under Section 12(g)(i) of this Chapter prior to the planting of crops at the facility for all constituents identified in Chapter 2, Appendix H of these rules and regulations that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.
- 264.276(a)(3) (C) In making a demonstration under Section 12(g)(i) of this Chapter, the owner or operator may use field tests, greenhouse studies, available data, or, in the case of existing units, operating data, and must:
- ... (i) (I) Base the demonstration on conditions similar to those present in the treatment zone, including soil characteristics (e.g., pH, cation exchange capacity), specific wastes, application rates, application methods, and crops to be grown; and
- ... (ii) (II) Describe the procedures used in conducting any tests, including the sample selection criteria,

sample size, analytical methods, and statistical procedures.

264.276(a)(4) (D) If the owner or operator intends to conduct field tests or greenhouse studies in order to make the demonstration required under Section 12(g)(i) of this Chapter, he or she must obtain a permit for conducting such activities.

264.276(b) (ii) The owner or operator must comply with the following conditions if cadmium is contained in wastes applied to the treatment zone:

264.276(b)(1) (A) Either:

...(i) (I) The pH of the waste and soil mixture must be 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less;

...(ii) (II) The annual application of cadmium from waste must not exceed 0.5 kilograms per hectare (kg/ha) on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food-chain crops, the annual cadmium application rate must not exceed:

| Time period | Annual Cd application rate
(kilograms per hectare) |
|-----------------------------------|---|
| Present to June 30, 1984 | 2.0 |
| July 1, 1984 to December 31, 1986 | 1.25 |
| Beginning January 1, 1987 | 0.5 |

...(iii) (III) The cumulative application of cadmium from waste must not exceed 5 kg/ha if the waste and soil mixture has a pH of less than 6.5; and

...(iv) (IV) If the waste and soil mixture has a pH of 6.5 or greater or is maintained at a pH of 6.5 or greater during crop growth, the cumulative application of cadmium from waste must not exceed: 5 kg/ha if soil cation exchange capacity (CEC) is less than 5 meq/100g; 10 kg/ha if soil CEC is 5-15 meq/100g; and 20 kg/ha if soil CEC is greater than 15 meq/100g;

264.276(b)(2) (B) Or:

...(i) (I) Animal feed must be the only food-chain crop produced;

...(ii) (II) The pH of the waste and soil mixture must be 6.5 or greater at the time of waste application or at the time the crop is planted, whichever occurs later, and this pH level must be maintained whenever food-chain crops are grown;

...(iii) (III) There must be an operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The operating plan must describe the measures to be taken to safeguard against possible health hazards from

cadmium entering the food chain, which may result from alternative land uses; and

- ...(iv) (IV) Future property owners must be notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food-chain crops must not be grown except in compliance with Section 12(g)(ii)(B) of this Chapter.
- 264.277 (h) RESERVED.
- 264.278 (i) UNSATURATED ZONE MONITORING. An owner or operator subject to Section 12 of this Chapter must establish an unsaturated zone monitoring program to discharge the following responsibilities:
- 264.278(a) (i) The owner or operator must monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.
- 264.278(a)(1) (A) The Director will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under Section 12(b)(ii) of this Chapter.
- 264.278(a)(2) (B) The Director may require monitoring for principal hazardous constituents (PHCs) in lieu of the constituents specified under Section 12(b)(ii) of this Chapter. PHCs are hazardous constituents contained in the wastes to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation, and immobilization. The Director will establish PHCs if he or she finds, based on waste analyses, treatment demonstrations, or other data, that effective degradation, transformation, or immobilization of the PHCs will assure treatment at least equivalent levels for the other hazardous constituents in the wastes.
- 264.278(b) (ii) The owner or operator must install an unsaturated zone monitoring system that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters. The unsaturated zone monitoring system must consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that:
- 264.278(b)(1) (A) Represent the quality of background soil-pore liquid quality and the chemical make-up of soil that has not been affected by leakage from the treatment zone; and
- 264.278(b)(2) (B) Indicate the quality of soil-pore liquid and the chemical make-up of the soil below the treatment zone.
- 264.278(c) (iii) The owner or operator must establish a background value for each hazardous constituent to be monitored under Section 12(i)(i) of this Chapter. The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.
- 264.278(c)(1) (A) Background soil values may be based on a one-time sampling at a background plot having characteristics similar to those of the treatment zone.

- 264.278(c)(2) (B) Background soil-pore liquid values must be based on at least quarterly sampling for one year at a background plot having characteristics similar to those of the treatment zone.
- 264.278(c)(3) (C) The owner or operator must express all background values in a form necessary for the determination of statistically significant increases under Section 12 (i)(vi) of this Chapter.
- 264.278(c)(4) (D) In taking samples used in the determination of all background values, the owner or operator must use an unsaturated zone monitoring system that complies with Section 12(i)(ii)(A) of this Chapter.
- 264.278(d) (iv) The owner or operator must conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The Director will specify the frequency and timing of soil and soil-pore liquid monitoring in the facility permit after considering the frequency, timing, and rate of waste application, and the soil permeability. The owner or operator must express the results of soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under Section 12(i)(vi) of this Chapter.
- 264.278(e) (v) The owner or operator must use consistent sampling and analysis procedures that are designed to ensure sampling results that provide a reliable indication of soil-pore liquid quality and the chemical make-up of the soil below the treatment zone. At a minimum, the owner or operator must implement procedures and techniques for:
- 264.278(e)(1) (A) Sample collection;
- 264.278(e)(2) (B) Sample preservation and shipment;
- 264.278(e)(3) (C) Analytical procedures; and
- 264.278(e)(4) (D) Chain of custody control.
- 264.278(f) (vi) The owner or operator must determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under Section 12(i)(i) of this Chapter below the treatment zone each time he or she conducts soil monitoring and soil-pore liquid monitoring under Section 12(i)(iv) of this Chapter.
- 264.278(f)(1) (A) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent, as determined under Section 12(i)(iv) of this Chapter, to the background value for that constituent according to the statistical procedure specified in the facility permit under Section 12(i)(vi) of this Chapter.
- 264.278(f)(2) (B) The owner or operator must determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after completion of sampling. The Director will specify that time period in the facility permit after considering the complexity of the statistical test and

the availability of laboratory facilities to perform the analysis of soil and soil-pore liquid samples.

264.278(f)(3) (C) The owner or operator must determine whether there is a statistically significant increase below the treatment zone using a statistical procedure that provides reasonable confidence that migration from the treatment zone will be identified. The Director will specify a statistical procedure in the facility permit that he or she finds:

...(i) (I) Is appropriate for the distribution of the data used to establish background values; and

...(ii) (II) Provides a reasonable balance between the probability of falsely identifying migration from the treatment zone and the probability of failing to identify real migration from the treatment zone.

264.278(g) (vii) If the owner or operator determines, pursuant to Section 12(i)(vi) of this Chapter, that there is a statistically significant increase of hazardous constituents below the treatment zone, he or she must:

264.278(g)(1) (A) Notify the Director of this finding in writing within seven days. The notification must indicate what constituents have shown statistically significant increases.

264.278(g)(2) (B) Within 90 days, submit to the Director an application for a permit modification to modify the operating practices at the facility in order to maximize the success of degradation, transformation, or immobilization processes in the treatment zone.

264.278(h) (viii) If the owner or operator determines, pursuant to Section 12(i)(vi) of this Chapter, that there is a statistically significant increase of hazardous constituents below the treatment zone, he or she may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under Section 12(i)(viii) of this Chapter in addition to, or in lieu of, submitting a permit modification application under Section 12(i)(vii)(B) of this Chapter, he or she is not relieved of the requirement to submit a permit modification application within the time specified in Section 12(i)(vii)(B) of this Chapter unless the demonstration made under Section 12(i)(viii) of this Chapter successfully shows that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. In making a demonstration under Section 12(i)(viii) of this Chapter, the owner or operator must:

264.278(h)(1) (A) Notify the Director in writing within seven days of determining a statistically significant increase below the treatment zone that he or she intends to make a determination under Section 12(i)(viii) of this Chapter;

264.278(h)(2) (B) Within 90 days, submit a report to the Director demonstrating that a source other than the regulated units caused the increase or that the increase resulted from error in

- sampling, analysis, or evaluation;
- 264.278(h)(3) (C) Within 90 days, submit to the Director an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and
- 264.278(h)(4) (D) Continue to monitor in accordance with the unsaturated zone monitoring program established under Section 12(i) of this Chapter.
- 264.279 (j) RECORDKEEPING. The owner or operator must include hazardous waste application dates and rates in the operating record required under Section 5(d) of this Chapter.
- 264.280 (k) CLOSURE AND POST-CLOSURE CARE.
- 264.280(a) (i) During the closure period the owner or operator must:
- 264.280(a)(1) (A) Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under Section 12(d)(i) of this Chapter, except to the extent such measures are inconsistent with Section 12(k)(i)(H) of this Chapter.
- 264.280(a)(2) (B) Continue all operations in the treatment zone to minimize run-off of hazardous constituents as required under Section 12(d)(ii) of this Chapter;
- 264.280(a)(3) (C) Maintain the run-on control system required under Section 12(d)(iii) of this Chapter;
- 264.280(a)(4) (D) Maintain the run-off management system required under Section 12(d)(iv) of this Chapter;
- 264.280(a)(5) (E) Control wind dispersal of hazardous waste if required under Section 12(d)(vi) of this Chapter;
- 264.280(a)(6) (F) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under Section 12(g) of this Chapter;
- 264.280(a)(7) (G) Continue unsaturated zone monitoring in compliance with Section 12(i) of this Chapter, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone; and
- 264.280(a)(8) (H) Establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.
- 264.280(b) (ii) For the purpose of complying with Section 7(f) of this Chapter, when closure is completed the owner or operator may submit to the Director certification by an independent qualified

soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

- 264.280(c) (iii) During the post-closure care period the owner or operator must:
- 264.280(c)(1) (A) Continue all operations (including pH control) necessary to enhance degradation and transformation and sustain immobilization of hazardous constituents in the treatment zone to the extent that such measures are consistent with other post-closure care activities;
- 264.280(c)(2) (B) Maintain a vegetative cover over closed portions of the facility;
- 264.280(c)(3) (C) Maintain the run-on control system required under Section 12(d)(iii) of this Chapter;
- 264.280(c)(4) (D) Maintain the run-off management system required under Section 12(d)(iv) of this Chapter;
- 264.280(c)(5) (E) Control wind dispersal of hazardous waste if required under Section 12(d)(vi) of this Chapter;
- 264.280(c)(6) (F) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under Section 12(g) of this Chapter; and
- 264.280(c)(7) (G) Continue unsaturated zone monitoring in compliance with Section 12(i) of this Chapter, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone.
- 264.280(d) (iv) The owner or operator is not subject to regulation under Sections 12(k)(i)(H) and 12(k)(iii) of this Chapter if the Director finds that the level of hazardous constituents in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in Section 12(k)(iv)(C) of this Chapter. The owner or operator may submit such a demonstration to the Director at any time during the closure of post-closure care periods. For the purposes of Section 12(k)(iv) of this Chapter:
- 264.280(d)(1) (A) The owner or operator must establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under Section 12(b)(ii) of this Chapter.
- ...(i) (I) Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.
- ...(ii) (II) The owner or operator must express background values and values for hazardous constituents in the treatment zone in a form necessary for the determination of statistically significant increases under Section 12(k)(iv)(C) of this Chapter.

264.280(d)(2) (B) In taking samples used in the determination of background and treatment zone values, the owner or operator must take samples at a sufficient number of sampling points and at appropriate locations and depths to yield samples that represent the chemical make-up of soil that has not been affected by leakage from the treatment zone and the soil within the treatment zone, respectively.

264.280(d)(3) (C) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent in the treatment zone to the background value for that constituent using a statistical procedure that provides reasonable confidence that constituent presence in the treatment zone will be identified. The owner or operator must use a statistical procedure that:

...(i) (I) Is appropriate for the distribution of the data used to establish background values; and

...(ii) (II) Provides a reasonable balance between the probability of falsely identifying hazardous constituent presence in the treatment zone and the probability of failing to identify real presence in the treatment zone.

264.280(e) (v) The owner or operator is not subject to regulation under Section 6 of this Chapter if the Director finds that the owner or operator satisfies Section 12(k)(iv) of this Chapter and if unsaturated zone monitoring under Section 12(i) of this Chapter indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

(vi) **The following loading limits shall not be exceeded in the landfarm soils:**

| | | | |
|---------|------------|----------------|------------|
| Arsenic | 50 mg/kg | Barium | 1000 mg/kg |
| Cadmium | 20 mg/kg | Chromium | 1000 mg/kg |
| Lead | 1000 mg/kg | Mercury | 20 mg/kg |
| Nickel | 100 mg/kg | Oil and Grease | 5 percent |

(A) If soil core test data show any sample to exceed one of these limits, four additional samples will be taken twenty feet in each cardinal direction from the location of the original boring. The resampling shall take place within thirty (30) days of receipt of the original test results. If any of the additional samples contain excessive contaminant levels, resampling will continue until the extent of contamination is determined. Copies of all resampling analytical data shall be forwarded immediately to the department. The department shall determine whether remedial action and/or closure of the landfarm plot as required.

(B) This resampling procedure shall also be followed if soil core analyses in the 3-4' depth interval show concentrations of any of the above constituents to exceed background levels. Exceedance of background levels shall be determined by calculating the mean and standard deviation of the metals

concentrations.

(vii) Closure of the landfarm plot shall be in compliance with one of the following provisions:

(A) A low permeability clay cap shall be placed over any plot which contains metals in excess of the limits in Section 12(k)(vi) of this Chapter. The cap shall have a maximum vertical hydraulic conductivity of $10\text{EE-}7$ cm/sec and a minimum thickness of twenty-four (24) inches. The cap shall be overlain by a layer of soil of sufficient thickness to protect the cap from frost penetration. This requirement will also apply to any plot in which contaminants are confirmed to have migrated below the treatment zone.

(B) A compacted soil cover shall be placed over any plot which, upon closure, contains metals in concentrations exceeding 50% of the limits in Section 12(k)(vi) of this Chapter. The cover shall have a minimum thickness of 12 inches and be compacted to a minimum of 85% of standard Proctor.

(C) No additional cover shall be required if a plot is shown to contain less than 50% of the concentration limits for all metals.

- 264.281 (l) SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE. The owner or operator must not apply ignitable or reactive waste to the treatment zone unless the waste and the treatment zone meet all applicable requirements of Chapter 13 of these rules and regulations, and:
- 264.281(a) (i) The waste is immediately incorporated into the soil so that:
- 264.281(a)(1) (A) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Chapter 2, Section 3(b) or 3(d) of these rules and regulations; and
- 264.281(a)(2) (B) Section 2(h)(ii) of this Chapter is complied with; or
- 264.281(b) (ii) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.
- 264.282 (m) SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES. The owner or operator must not place incompatible wastes, or incompatible wastes and materials (see Appendix E of this Chapter for examples), in or on the same treatment zone, unless Section 2(h)(ii) of this Chapter is complied with.
- 264.283 (n) SPECIAL REQUIREMENTS FOR HAZARDOUS WASTES F020, F021, F022, F023, F026, AND F027.
- 264.283(a) (i) Hazardous Wastes F020, F021, F022, F023, F026 and, F027 must not be placed in a land treatment unit unless the owner or

operator operates the facility in accordance with a management plan for these wastes that is approved by the Director pursuant to the standards set out in Section 12(n)(i) of this Chapter, and in accord with all other applicable requirements of this Chapter and Chapter 5 of these rules and regulations. The factors to be considered are:

- 264.283(a)(1) (A) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through soil or to volatilize or escape into the atmosphere;
 - 264.283(a)(2) (B) The attenuative properties of underlying and surrounding soils or other materials;
 - 264.283(a)(3) (C) The mobilizing properties of other materials co-disposed with these wastes; and
 - 264.283(a)(4) (D) The effectiveness of additional treatment, design, or monitoring techniques.
- 264.283(b) (ii) The Director may determine that additional design, operating, and monitoring requirements are necessary for land treatment facilities managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

264/Subpart N Section 13. LANDFILLS

264.300(a) (a) APPLICABILITY. The regulations in this Section apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as Section 1(a) of this Chapter provides otherwise.

264.301 (b) DESIGN AND OPERATING REQUIREMENTS.

264.301(a) (i) Any landfill that is not covered by Section 13(b)(iii) of this Chapter or Chapter 11, Section 15(b)(i) of these rules and regulations must have a liner system for all portions of the landfill (except for existing portions of such landfill). The liner system must have:

264.301(a)(1) (A) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent subsurface soil or ground water or surface water at anytime during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner must be:

...(i) (I) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

...(ii) (II) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure

gradients above and below the liner to prevent failure of the liner due to settlement, compression, or uplift; and

...(iii) (III) Installed to cover all surrounding earth likely to be in contact with the waste or leachate; and

264.301(a)(2) (B) A leachate collection and removal system immediately above the liner that is designed, constructed, maintained, and operated to collect and remove leachate from the landfill. The Director will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

...(i) (I) Constructed of materials that are:

...(i)(A) (1.) Chemically resistant to the waste managed in the landfill and the leachate expected to be generated; and

...(i)(2) (2.) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and

...(ii) (II) Designed and operated to function without clogging through the scheduled closure of the landfill.

264.301(b) (ii) The owner or operator will be exempted from the requirements of Section 13(b)(i) of this Chapter if the Director finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see Section 6(d) of this Chapter) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Director will consider:

264.301(b)(1) (A) The nature and quantity of the wastes;

264.301(b)(2) (B) The proposed alternate design and operation;

264.301(b)(3) (C) The hydrogeologic setting of the facility, including the attenuative capacity and thickness of the liners and soils present between the landfill and ground water or surface water; and

264.301(b)(4) (D) All other factors which would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

264.301(c) (iii) The owner or operator of each new landfill unit on which construction commences after January 29, 1992, each lateral expansion of a landfill unit on which construction commences after July 29, 1992, and each replacement of an existing landfill unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners. "Construction commences" is as defined in Chapter 1, Section 1(f)(i) of these rules and regulations under "existing hazardous waste management facility" or "existing

facility".

(A) Components of a liner system:

264.301(c)(1)(i)

(I) The liner system must include:

...(i)(A)

(1.) A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

...(i)(B)

(2.) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/sec.

...(ii)

(II) The liners must comply with Sections 13(b)(i)(A)(I), (II), and (III) of this Chapter.

264.301(c)(2)

(B) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and post-closure care period. The Director will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must comply with Sections 13(b)(iii)(C)(III) and (IV) of this Chapter.

264.301(c)(3)

(C) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:

...(i)

(I) Constructed with a bottom slope of one percent or more;

...(ii)

(II) Constructed of granular drainage materials with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m²/sec or more;

...(iii)

(III) Constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the

- landfill;
- ...(iv) (IV) Designed and operated to minimize clogging during the active life and post-closure care period; and
 - ...(v) (V) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.
- 264.301(c)(4) (D) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.
- 264.301(c)(5) (E) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.
- 264.301(d) (iv) The Director may approve alternative design or operating practices to those specified in Section 13(b)(iii) of this Chapter if the owner or operator demonstrates to the Director that such design and operating practices, together with location characteristics:
- 264.301(d)(1) (A) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in Section 13(b)(iii) of this Chapter; and
 - 264.301(d)(2) (B) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.
- 264.301(e) (v) The double liner requirement set forth in Section 13(b)(iii) of this Chapter may be waived by the Director for any monofill, if:
- 264.301(e)(1) (A) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic in Chapter 2, Section 3(e) of these rules and regulations, with EPA Hazardous Waste Numbers D004 through D017; and
 - 264.301(e)(2) (B) Either:
 - ...(i) (I) The monofill:
 - ...(i)(A) (1.) The monofill has at least one liner for which there is no evidence that such liner is leaking;
 - ...(i)(B) (2.) The monofill is located more than one-quarter mile from an underground source of drinking water (as that term is defined in Chapter 1, Section 1(f)(i) of these rules and regulations); and

- ... (i)(C) (3.) The monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with permits under W.S. 35-11-503(d); W.S. 35-11-801; Chapter 4, Section 2(a); and RCRA Section 3005(c); or
- ... (ii) (II) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.
- 264.301(f) (vi) The owner or operator of any replacement landfill unit is exempt from Section 13(b)(iii) of this Chapter if:
- 264.301(f)(1) (A) The existing unit was constructed in compliance with the design standards of Chapter 10, Sections 10(b)(iii) and 13(b)(iii) and Chapter 11, Sections 12(b)(i) and 15(b)(i); W.S. 35-11-503(d); and RCRA Section 3004(o)(5); and
- 264.301(f)(2) (B) There is no reason to believe that the liner is not functioning as designed.
- 264.301(g) (vii) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.
- 264.301(h) (viii) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.
- 264.301(i) (ix) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.
- 264.301(j) (x) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to control wind dispersal.
- 264.301(k) (xi) The Director will specify in the permit all design and operating practices that are necessary to ensure that the requirements of Section 13(b) of this Chapter are satisfied.
- 264.301(l) (xii) **Reserved.** ^
- 264.302 (c) ACTION LEAKAGE RATE.
- 264.302(a) (i) The Director shall approve an action leakage rate for surface impoundment units subject to Section 13(b)(iii) or (iv) of this Chapter. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed

response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

264.302(b) (ii) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under Section 13(d)(iii) of this Chapter, to an average daily flow rate (gallons per acre per day) for each sump. Unless the Director approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the post-closure care period when monthly monitoring is required under Section 13(d)(iii) of this Chapter.

264.303 (d) MONITORING AND INSPECTION.

264.303(a) (i) During construction or installation, liners (except in the case of existing portions of landfills exempt from Section 13(b)(i) of this Chapter) and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

264.303(a)(1) (A) Synthetic liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters; and

264.303(a)(2) (B) Soil-based and admixed liners and covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

264.303(b) (ii) While a landfill is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

264.303(b)(1) (A) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;

264.303(b)(2) (B) Proper functioning of wind dispersal control systems, where present; and

264.303(b)(3) (C) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

264.303(c)(1) (iii) An owner or operator required to have a leak detection system under Section 13(b)(iii) or (iv) of this Chapter must:

264.303(c)(1) (A) Record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

264.303(c)(2) (B) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the

amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

264.303(c)(3) (C) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Director based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.

264.304 (e) RESPONSE ACTIONS.

264.304(a) (i) The owner or operator of landfill units subject to Section 13(b)(iii) or (iv) of this Chapter must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in Section 13(e)(ii) of this Chapter.

264.304(b) (ii) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

264.304(b)(1) (A) Notify the Director in writing of the exceedence within 7 days of the determination;

264.304(b)(2) (B) Submit a preliminary written assessment to the Director within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

264.304(b)(3) (C) Determine to the extent practicable the location, size, and cause of any leak;

264.304(b)(4) (D) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

264.304(b)(5) (E) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

264.304(b)(6) (F) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Director the results of the analyses specified in Sections 13(e)(ii)(C), (D), and (E) of this Chapter, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Director a report summarizing the results of any remedial actions taken and actions planned.

264.304(c) (iii) To make the leak and/or remediation determinations in Sections 13(e)(ii)(C), (D), and (E) of this Chapter, the owner or operator must:

- 264.304(c)(1)(i) (A) Assess the source of liquids and amounts of liquids by source,
- ...(ii) (I) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and
- ...(iii) (II) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or
- 264.304(c)(2) (B) Document why such assessments are not needed.
- 264.305-.308 (f) - (i) RESERVED.
- 264.309 (j) SURVEYING AND RECORDKEEPING. The owner or operator of a landfill must maintain the following items in the operating record required under Section 5(d) of this Chapter:
- 264.309(a) (i) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and
- 264.309(b) (ii) The contents of each cell and the approximate location of each hazardous waste type within each cell.
- 264.310 (k) CLOSURE AND POST-CLOSURE CARE.
- 264.310(a) (i) At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:
- 264.310(a)(1) (A) Provide long-term minimization of migration of liquids through the closed landfill;
- 264.310(a)(2) (B) Function with minimum maintenance;
- 264.310(a)(3) (C) Promote drainage and minimize erosion or abrasion of the cover;
- 264.310(a)(4) (D) Accommodate settling and subsidence so that the cover's integrity is maintained; and
- 264.310(a)(5) (E) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
- 264.310(b) (ii) After final closure, the owner or operator must comply with all post-closure requirements contained in Sections 7(h) through 7(k) of this Chapter, including maintenance and monitoring throughout the post-closure care period (specified in the permit under Section 7(h) of this Chapter). The owner or operator must:
- 264.310(b)(1) (A) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

- 264.310(b)(2) (B) Continue to operate the leachate collection and removal system until leachate is no longer detected;
- 264.310(b)(3) (C) Maintain and monitor the leak detection system in accordance with Sections 13(b)(iii)(C)(IV), 13(b)(iii)(D) and 13(d)(iii) of this Chapter, and comply with all other applicable leak detection system requirements of this Chapter;
- 264.310(b)(4) (D) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of Section 6 of this Chapter;
- 264.310(b)(5) (E) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and
- 264.310(b)(6) (F) Protect and maintain surveyed benchmarks used in complying with Section 13(j) of this Chapter.
- 264.311 (l) RESERVED.
- 264.312 (m) SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE.
- 264.312(a) (i) Except as provided in Section 13(m)(ii) of this Chapter, and in Section 13(q) of this Chapter, ignitable or reactive waste must not be placed in a landfill, unless the waste and landfill meet all applicable requirements of Chapter 13 of these rules and regulations, and:
- 264.312(a)(1) (A) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Chapter 2, Section 3(b) or 3(d) of these rules and regulations; and
- 264.312(a)(2) (B) Section 2(h)(ii) of this Chapter is complied with.
- 264.312(b) (ii) Except for prohibited wastes which remain subject to treatment standards in Chapter 13, Section 4 of these rules and regulations, ignitable wastes in containers may be landfilled without meeting the requirements of Section 13(m)(i) of this Chapter, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.
- 264.313 (n) SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES. Incompatible wastes, or incompatible wastes and materials, (see Appendix E of this Chapter for examples) must not be placed in the same landfill cell, unless Section 2(h)(ii) of this Chapter is complied with.
- 264.314 (o) SPECIAL REQUIREMENTS FOR BULK AND CONTAINERIZED LIQUIDS.

- 264.314(a) (i) Bulk or non-containerized liquid waste or waste containing free liquids may be placed in a landfill prior to May 8, 1985 only if:
- 264.314(a)(1) (A) The landfill has a liner and leachate collection and removal system that meet the requirements of Section 13(b)(i) of this Chapter; or
- 264.314(a)(2) (B) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with a sorbent solid), so that free liquids are no longer present.
- 264.314(b) (ii) Effective May 8, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.
- 264.314(c) (iii) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Chapter 1, Section 1(g) of these rules and regulations.
- 264.314(d) (iv) Containers holding free liquids must not be placed in a landfill unless:
- 264.314(d)(1) (A) All free-standing liquid:
- ... (i) (I) has been removed by decanting, or other methods;
- ... (ii) (II) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or
- ... (iii) (III) has been otherwise eliminated; or
- 264.314(d)(2) (B) The container is very small, such as an ampule; or
- 264.314(d)(3) (C) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or
- 264.314(d)(4) (D) The container is a lab pack as defined in Section 13(q) of this Chapter and is disposed of in accordance with Section 13(q) of this Chapter.
- 264.314(e) (v) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in Section 13(o)(v)(A) of this Chapter; materials that pass one of the tests in Section 13(o)(v)(B) of this Chapter; or materials that are determined by EPA to be nonbiodegradable through the Chapter 1, Sections 1(a) through 1(g) and Section 3 of these rules and regulations petition process.

- 264.314(e)(1) (A) Nonbiodegradable sorbents.
- ... (i) (I) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or
- ... (ii) (II) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or
- ... (iii) (III) Mixtures of these nonbiodegradable materials.
- 264.314(e)(2) (B) Tests for nonbiodegradable sorbents.
- ... (i) (I) The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a)-Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or
- ... (ii) (II) The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b)-Standard Practice for Determining Resistance of Plastics to Bacteria; or
- ... (iii) (III) The sorbent material is determined to be non-biodegradable under OECD test 301B: [CO₂ Evolution (Modified Sturm Test)].
- 264.314(f) (vi) ^ The placement of any liquid which is not a hazardous waste in a landfill is prohibited^.
- 264.315 (p) SPECIAL REQUIREMENTS FOR CONTAINERS. Unless they are very small, such as an ampule, containers must be either:
- 264.315(a) (i) At least 90 percent full when placed in the landfill; or
- 264.315(b) (ii) Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.
- 264.316 (q) DISPOSAL OF SMALL CONTAINERS OF HAZARDOUS WASTE IN OVERPACKED DRUMS (LAB PACKS). Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:
- 264.316(a) (i) Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside

containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR parts 173, 178, and 179), if those regulations specify a particular inside container for the waste.

- 264.316(b) (ii) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with Section 13(o)(v) of this Chapter, to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.
- 264.316(c) (iii) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with Section 2(h)(ii) of this Chapter.
- 264.316(d) (iv) Incompatible wastes, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, must not be placed in the same outside container.
- 264.316(e) (v) Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in Chapter 2, Section 3(d)(i)(E) of these rules and regulations, must be treated or rendered non-reactive prior to packaging in accordance with Sections 13(q)(i) through (iv) of this Chapter. Cyanide- and sulfide-bearing reactive waste may be packed in accordance with Sections (q)(i) through (iv) of this Chapter without first being treated or rendered non-reactive.
- 264.316(f) (vi) Such disposal is in compliance with the requirements of Chapter 13 of these rules and regulations. Persons who incinerate lab packs according to the requirements in Chapter 13, Section 4(c)(iii)(C) and (D) of these rules and regulations may use fiber drums in place of metal outer containers. Such fiber drums must meet the DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements in Section 13(q)(ii) of this Chapter.
- 264.317 (r) SPECIAL REQUIREMENTS FOR HAZARDOUS WASTES F020, F021, F022, F023, F026, AND F027.
- 264.317(a) (i) Hazardous Wastes F020, F021, F022, F023, F026, and F027 must not be placed in a landfills unless the owner or operator operates the landfill in accord with a management plan for these wastes that is approved by the Director pursuant to the standards set out in Section 13(r)(i) of this Chapter, and in accord with all other applicable requirements of this Chapter and Chapter 5 of these rules and regulations. The factors to be considered are:
- 264.317(a)(1) (A) The volume, physical, and chemical characteristics of the wastes, including their potential to migrate through the soil or to volatilize or escape into the atmosphere;
- 264.317(a)(2) (B) The attenuative properties of underlying and surrounding soils or other materials;

264.317(a)(3) (C) The mobilizing properties of other materials co-disposed with these wastes; and

264.317(a)(4) (D) The effectiveness of additional treatment, design, or monitoring requirements.

264.317(b) (ii) The Director may determine that additional design, operating, and monitoring requirements are necessary for landfills managing hazardous wastes F020, F021, F022, F023, F026, and F027 in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

264/Subpart O Section 14. INCINERATORS

264.340 (a) APPLICABILITY.

264.340(a) (i) The regulations of Section 14 of this Chapter apply to owners and operators of hazardous waste incinerators (as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, except as Section 1(a) of this Chapter provides otherwise.

264.340(b) (ii) After consideration of the waste analysis included with Part B of the permit application, the Director, in establishing the permit conditions, **may** exempt the applicant from all requirements of this Section except Section 14(b) of this Chapter (Waste analysis) and Section 14(l) of this Chapter (Closure),

264.340(b)(1) (A) If the Director finds that the waste to be burned is:

...(i) (I) Listed as a hazardous waste in Chapter 2, Section 4 of these rules and regulations solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

...(ii) (II) Listed as a hazardous waste in Chapter 2, Section 4 of these rules and regulations solely because it is reactive (Hazard Code R) for characteristics other than those listed in Chapter 2, Sections 3(d)(i)(D) and (E) of these rules and regulations, and will not be burned when other hazardous wastes are present in the combustion zone; or

...(iii) (III) A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the test for characteristics of hazardous wastes under Chapter 2, Section 3 of these rules and regulations; or

...(iv) (IV) A hazardous waste solely because it possesses any of the reactivity characteristics described by Chapter 2, Section 3(d)(i)(A), (B), (C), (F), (G), and (H) of these rules and regulations, and will not be burned when other hazardous wastes are present in the combustion zone; and

264.340(b)(2) (B) If the waste analysis shows that the waste contains none of the hazardous constituents listed in Chapter 2, Appendix H of these rules and regulations, which would reasonably be expected to be in the waste.

264.340(c) (iii) If the waste to be burned is one which is described by Section 14(a)(ii)(A)(I), (II), (III), or (IV) of this Chapter and contains insignificant concentrations of the hazardous constituents listed in Appendix H of Chapter 2 of these rules and regulations, then the Director may, in establishing permit conditions, exempt the applicant from all requirements of this Section, except Section 14(b) of this Chapter (Waste analysis) and Section 14(l) of this Chapter (Closure), after consideration of the waste analysis included with Part B of the permit application, unless the Director finds that the waste will pose a threat to human health and the environment when burned in an incinerator. **In making a determination under Section 14(a)(ii) of this Chapter to exempt the applicant from requirements under Section 14 of this Chapter, the Director shall consider:**

(A) The source of the waste to be incinerated;

(B) The extent to which the applicant can demonstrate control over the chemical quality of wastes to be incinerated, to assure that a consistent quality of hazardous wastes meeting the chemical specifications of wastes described by Section 14(a)(iii) of this Chapter is received for incineration; and

(C) Other factors he or she determines are material.

264.340(d) (iv) The owner or operator of an incinerator may conduct trial burns subject only to the requirements of Chapter 7, Section 1(c) of these rules and regulations (Hazardous waste incinerator permits).

264.341 (b) WASTE ANALYSIS.

264.341(a) (i) As a portion of the trial burn plan required by Chapter 7, Section 1(c) of these rules and regulations, or with Part B of the permit application, the owner or operator must have included an analysis of the waste feed sufficient to provide all information required by Chapter 7, Section 1(c)(ii) or Chapter 3, Section 2(j) of these rules and regulations. Owners or operators of new hazardous waste incinerators must provide the information required by Chapter 7, Section 1(c)(iii) or Chapter 3, Section 2(j) of these rules and regulations to the greatest extent possible.

264.341(b) (ii) Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his or her permit (under Section 14(f)(ii) of this Chapter).

264.342 (c) PRINCIPAL ORGANIC HAZARDOUS CONSTITUENTS (POHCs).

264.342(a) (i) Principal Organic Hazardous Constituents (POHCs) in the waste feed must be treated to the extent required by the performance standard of Section 14(d) of this Chapter.

264.342(b)(1) (ii) Specification of POHCs in permits:

(A) One or more POHCs will be specified in the

facility's permit, from among those constituents listed in Chapter 2, Appendix H of these rules and regulations, for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with Part B of the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHCs if they are present in large quantities or concentrations in the waste.

264.342(b)(2) (B) Trial POHCs will be designated for performance of trial burns in accordance with the procedure specified in Chapter 7, Section 1(c) of these rules and regulations for obtaining trial burn permits.

264.343 (d) PERFORMANCE STANDARDS. An incinerator burning hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under Section 14(f) of this Chapter, it will meet the following performance standards:

264.343(a)(1)(i) (i) Except as provided in Section 14(d)(i)(B) of this Chapter, an incinerator burning hazardous waste must:

264.343(a)(1)(i) (A) Achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated (under Section 14(c) of this Chapter) in its permit for each waste feed. DRE is determined for each POHC from the following equation:

$$\text{DRE} = \frac{W_{in} - W_{out}}{W_{in}} \times 100\%$$

here:

W_{in} = mass feed rate of one principal organic hazardous constituent (POHC) in the waste stream feeding the incinerator)

and

W_{out} = mass emission rate of the same POHC present in exhaust emissions prior to release to the atmosphere.

264.343(a)(2) (B) An incinerator burning hazardous wastes F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal organic hazardous constituent (POHC) designated (under Section 14(c) of this Chapter) in its permit. This performance must be demonstrated on POHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in Section 14(d)(i)(A) of this Chapter. In addition, the owner or operator of the incinerator must notify the Director of his or her intent to incinerate hazardous wastes

F020, F021, F022, F023, F026, or F027.

264.343(b) (ii) An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is no greater than the larger of either 1.8 kilograms per hour or 1% of the HCl in the stack gas prior to entering any pollution control equipment.

264.343(c) (iii) An incinerator burning hazardous waste must not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = P_m \times \frac{14}{21 - Y}$$

Where P_c is the corrected concentration of particulate matter, P_m is the measured concentration of particulate matter, and Y is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas, presented in 40 CFR 60, appendix A (Method 3). This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the Director will select an appropriate correction procedure, to be specified in the facility permit.

264.343(d) (iv) For purposes of permit enforcement, compliance with the operating requirements specified in the permit (under Section 14(f) of this Chapter) will be regarded as compliance with Section 14(d) of this Chapter. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of Section 14(d) of this Chapter may be "information" justifying modification, revocation, or reissuance of a permit under Chapter 6, Section 2(b) of these rules and regulations.

264.344 (e) HAZARDOUS WASTE INCINERATOR PERMITS.

264.344(a) (i) The owner or operator of a hazardous waste incinerator may burn only wastes specified in his or her permit and only under operating conditions specified for those wastes under Section 14(f) of this Chapter, except:

264.344(a)(1) (A) In approved trial burns under Chapter 7, Section 1(c) of these rules and regulations; or

264.344(a)(2) (B) Under exemptions created by Section 14(a) of this Chapter.

264.344(b) (ii) Other hazardous wastes may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with Part B of a permit application under Chapter 3, Section 2(j) of these rules and regulations.

264.344(c) (iii) The permit for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable

requirements of this Section, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of Section 14(f) of this Chapter, sufficient to comply with the following standards:

264.344(c)(1) (A) For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in Section 14(e)(iii)(B) of this Chapter, not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of Section 14(d) of this Chapter, based on the Director's engineering judgment. The Director may extend the duration of this period once for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.

264.344(c)(2) (B) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate compliance with the performance standards of Section 14(d) of this Chapter and must be in accordance with the approved trial burn plan;

264.344(c)(3) (C) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the Director, the operating requirements must be those most likely to ensure compliance with the performance standards of Section 14(d) of this Chapter, based on the Director's engineering judgement.

264.344(c)(4) (D) For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in Chapter 3, Section 2(j)(iii) of these rules and regulations, as sufficient to ensure compliance with the performance standards of Section 14(d) of this Chapter.

264.345 (f) OPERATING REQUIREMENTS.

264.345(a) (i) An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in Section 14(e)(ii) of this Chapter and included with Part B of a facility's permit application) to be sufficient to comply with the performance standards of Section 14(d) of this Chapter.

264.345(b) (ii) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of Section 14(d) of this Chapter) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits including the following conditions:

264.345(b)(1) (A) Carbon monoxide (CO) level in the stack exhaust gas;

- 264.345(b)(2) (B) Waste feed rate;
- 264.345(b)(3) (C) Combustion temperature;
- 264.345(b)(4) (D) An appropriate indicator of combustion gas velocity;
- 264.345(b)(5) (E) Allowable variations in incinerator system design or operating procedures; and
- 264.345(b)(6) (F) Such other operating requirements as are necessary to ensure that the performance standards of Section 14(d) of this Chapter are met.
- 264.345(c) (iii) During start-up and shut-down of an incinerator, hazardous waste (except wastes exempted in accordance with Section 14(a) of this Chapter) must not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.
- 264.345(d) (iv) Fugitive emissions from the combustion zone must be controlled by:
 - 264.345(d)(1) (A) Keeping the combustion zone totally sealed against fugitive emissions; or
 - 264.345(d)(2) (B) Maintaining a combustion zone pressure lower than atmospheric pressure; or
 - 264.345(d)(3) (C) An alternate means of control demonstrated (with Part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.
- 264.345(e) (v) An incinerator must be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under Section 14(f)(i) of this Chapter.
- 264.345(f) (vi) An incinerator must cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.
- 264.346 (g) RESERVED.
- 264.347 (h) MONITORING AND INSPECTIONS.
 - 264.347(a) (i) The owner or operator must conduct, as a minimum, the following monitoring while incinerating hazardous waste:
 - 264.347(a)(1) (A) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit must be monitored on a continuous basis.
 - 264.347(a)(2) (B) CO must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere.

- 264.347(a)(3) (C) Upon request by the Director, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of Section 14(d) of this Chapter.
- 264.347(b) (ii) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions, and signs of tampering.
- 264.347(c) (iii) The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the Director that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.
- 264.347(d)(1) (iv) This monitoring and inspection data must be recorded and the records must be placed in the operating log required by Section 5(d) of this Chapter.
- 264.348 (i) - (k) RESERVED.
- 264.351 (1) CLOSURE.
- (i) At closure the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site.
- [Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Chapter 2, Section 1(c)(iv) of these rules and regulations, that the residue removed from the incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of Chapter 5; Chapters 8 through 10; Chapter 11, Section 1 and Sections 4 through 31; and Chapter 12, Sections 1 through 8, 19 and 20 of these rules and regulations.]
- 264/Subpart P Section 15. RESERVED.
- 264/Subpart Q Section 16. RESERVED.
- 264/Subpart R Section 17. RESERVED.
- 264/Subpart S Section 18. ~~Corrective Action for Waste Material Management Units~~ SPECIAL PROVISIONS FOR CLEANUP
- 264.550 (a) APPLICABILITY OF CORRECTIVE ACTION MANAGEMENT UNIT (CAMU) REGULATIONS.
- 264.550(a) (i) Except as provided in Section 18(a)(ii) of this Chapter, CAMUs are subject to the requirements of Section 18(c) of this Chapter.
- 264.550(b) (ii) CAMUs that were approved before April 22, 2002, or for which substantially complete applications (or equivalents) were submitted to the Department on or before November 20, 2000, are subject to the requirements in Section 18(b) of this Chapter for

grandfathered CAMUs; CAMU waste, activities, and design will not be subject to the standards in Section 18(c) of this Chapter, so long as the waste, activities, and design remain within the general scope of the CAMU as approved.

264.551 (b) GRANDFATHERED CORRECTIVE ACTION MANAGEMENT UNITS (CAMU).

264.551(a) (i) To implement remedies under Section 6(1) of this Chapter, W.S. 35-11-503(d), W.S.35-11-1607 or RCRA Section 3008(h), ^ the Director may designate an area at the facility as a corrective action management unit under the requirements in Section 18(b)of this Chapter or a signed remedy agreement pursuant to W.S. 35-11-1607. Corrective action management unit means an area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility. A CAMU must be located within the contiguous property under the control of the owner or operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

264.5521(a)(1) (A) Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

264.5521(a)(2) (B) Consolidation or placement of remediation wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

(ii) **Designation of regulated units:**

264.5521(b)(1) (A) The Director may designate a regulated unit (as defined in Section 6(a)(i)(B) of this Chapter) as a CAMU, or may incorporate a regulated unit into a CAMU, if:

...(i) (I) The regulated unit is closed or closing, meaning it has begun the closure process under Section 7(d) of this Chapter or Chapter 11, Section 9(d) of these rules and regulations; and

...(ii) (II) Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

264.5521(b)(2) (B) The Chapter 10, Sections 6 and 7 requirements, the Chapter 5 requirements and the unit-specific requirements of Chapter 10 or 11 of these rules and regulations that applied to that regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

264.5521(c) (iii) The Director shall designate a CAMU in accordance with the following:

264.5521(c)(1) (A) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

264.5521(c)(2) (B) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;

- 264.5521 (c)(3) (C) The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing remediation waste is more protective than management of such wastes at contaminated areas of the facility;
- 264.5521 (c)(4) (D) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;
- 264.5521 (c)(5) (E) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;
- 264.5521 (c)(6) (F) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and
- 264.5521 (c)(7) (G) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.
- 264.5521 (d) (iv) The owner/operator shall provide sufficient information to enable the Director to designate a CAMU in accordance with the criteria in Section 18(a~~c~~) of this Chapter.
- 264.5521 (e) (v) The Director shall specify, in the permit or order, requirements for CAMUs to include the following:
- 264.5521 (e)(1) (A) The areal configuration of the CAMU.
- 264.5521 (e)(2) (B) Requirements for remediation waste management to include the specification of applicable design, operation and closure requirements.
- 264.5521 (e)(3) (C) Requirements for ground water monitoring that are sufficient to:
- ... (i) (I) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU; and
- ... (ii) (II) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU.
- 264.5521 (e)(4) (D) Closure and post-closure requirements.
- ... (i) (I) Closure of corrective action management units shall:
- ... (i)(A) (1.) Minimize the need for further maintenance; and
- ... (i)(B) (2.) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment,

for areas where wastes remain in place, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

- ...(ii) (II) Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the Director for a given CAMU:
 - ...(ii)(A) (1.) Requirements for excavation, removal, treatment or containment of wastes;
 - ...(ii)(B) (2.) For areas in which wastes will remain after closure of the CAMU, requirements for capping of such areas; and
 - ...(ii)(C) (3.) Requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the CAMU.
 - ...(iii) (III) In establishing specific closure requirements for CAMUs under Section 18(~~ac~~)(vi) of this Chapter, the Director shall consider the following factors:
 - ...(iii)(A) (1.) CAMU characteristics;
 - ...(iii)(B) (2.) Volume of wastes which remain in place after closure;
 - ...(iii)(C) (3.) Potential for releases from the CAMU;
 - ...(iii)(D) (4.) Physical and chemical characteristics of the waste;
 - ...(iii)(E) (5.) Hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and
 - ...(iii)(F) (6.) Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.
 - ...(iv) (IV) Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.
- 264.5521 (f) (vi) The Director shall document the rationale for designating CAMUs and shall make such documentation available to the public.
- 264.5521 (g) (vii) Incorporation of a CAMU into an existing permit must be approved by the Director according to the procedures for DEQ-initiated permit modifications under Chapter 6, Section 2(b) of these rules and regulations, or according to the permit modification procedures of Chapter 6, Section 2(c) of these rules and regulations.

264.552~~1~~(h) (viii) The designation of a CAMU does not change DEQ's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

264.552 (a) CORRECTIVE ACTION MANAGEMENT UNITS (CAMU).

264.552(a) (i) ~~For the purpose of implementing remedies under Section 6(1) of this Chapter, or under Chapter 11, Section 8(f) of these rules and regulations; W.S. 35-11-503(d); or RCRA Section 3008(h), the Director may designate an area at the facility as a corrective action management unit, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, in accordance with the requirements of Section 18(a) of this Chapter. One or more CAMUs may be designated at a facility. To implement remedies under Section 6(1) of this Chapter, W.S. 35-11-503(d), W.S. 35-11-1607, Chapter 11, Section 8(f) or RCRA 3008(h),~~ the Director may designate an area at the facility as a corrective action management unit, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, under the requirements in this Section or a signed remedy agreement pursuant to W.S. 35-11-1607. A CAMU must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the CAMU originated. One or more CAMUs may be designated at a facility.

264.552(a)(1) (A) CAMU-eligible waste means:

...(i) (I) All solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) and debris, that are managed for implementing cleanup. As-generated wastes (either hazardous or non-hazardous) from ongoing industrial operations at a site are not CAMU-eligible wastes.

...(ii) (II) Wastes that would otherwise meet the description in Section 18(c)(i)(A)(I) of this Chapter are not CAMU-Eligible Wastes where:

...(ii)(A) (1.) The wastes are hazardous wastes found during cleanup in intact or substantially intact containers, tanks, or other non-land-based units found above ground, unless the wastes are first placed in the tanks, containers or non-land-based units as part of cleanup, or the containers or tanks are excavated during the course of cleanup; or

...(ii)(B) (2.) The Director exercises the discretion in Section 18(c)(i)(B) of this Chapter to prohibit the wastes from management in a CAMU.

...(iii) (III) Notwithstanding Section 18 (c)(i)(A)(I) of this Chapter, where appropriate, as-generated non-hazardous waste may be placed in a CAMU where such waste is being used to facilitate treatment or the performance of the CAMU.

264.552(a)(2) (B) The Director may prohibit, where appropriate, the placement of waste in a CAMU where the Director has or receives information that such wastes have not been managed in compliance with applicable land disposal treatment standards of Chapter 13 of these rules and regulations, or applicable unit design

requirements of this Chapter, or applicable unit design requirements of Chapter 11, Section 1 and Sections 4 through 32 of these rules and regulations, or that non-compliance with other applicable requirements of these rules and regulations likely contributed to the release of the waste.

264.552(a)(3) (C) Prohibition against placing liquids in CAMUs.

...(i) (I) The placement of bulk or noncontainerized liquid hazardous waste or free liquids contained in hazardous waste (whether or not sorbents have been added) in any CAMU is prohibited except where placement of such wastes facilitates the remedy selected for the waste.

...(ii) (II) The requirements in Chapter 10, Section 13(o)(iv) of these rules and regulations for placement of containers holding free liquids in landfills apply to placement in a CAMU except where placement facilitates the remedy selected for the waste.

...(iii) (III) The placement of any liquid which is not a hazardous waste in a CAMU is prohibited unless such placement facilitates the remedy selected for the waste or a demonstration is made pursuant to Chapter 10, Section 13(o)(vi) of these rules and regulations.

...(iv) (IV) The absence or presence of free liquids in either a containerized or a bulk waste must be determined in accordance with Chapter 10, Section 13(o)(iii) of these rules and regulations. Sorbents used to treat free liquids in CAMUs must meet the requirements of Chapter 10, Section 13(o)(v) of these rules and regulations.

264.552(a)(4) (D) Placement of CAMU-eligible wastes into or within a CAMU does not constitute land disposal of hazardous wastes.

264.552(a)(5) (E) Consolidation or placement of CAMU-eligible wastes into or within a CAMU does not constitute creation of a unit subject to minimum technology requirements.

264.552(b)(1) (ii) The Director may designate a regulated unit (as defined in Chapter 10, Section 6(a)(i)(B) of these rules and regulations) as a CAMU, or may incorporate a regulated unit into a CAMU, if:

...(i) (A) The regulated unit is closed or closing, meaning it has begun the closure process under Chapter 10, Section 7(d) or Chapter 11, Section 9(d) of these rules and regulations; and

...(ii) (B) Inclusion of the regulated unit will enhance implementation of effective, protective and reliable remedial actions for the facility.

264.552(b)(2) (iii) The Chapter 10, Sections 6 and 7 requirements, the Chapter 5 requirements and the unit-specific requirements of Chapter 10 or Chapter 11, Section 1 and Sections 4 through 32 of these rules and regulations that applied to the regulated unit will continue to apply to that portion of the CAMU after incorporation into the CAMU.

- 264.552(c) (iv) The Director shall designate a CAMU that will be used for storage and/or treatment only in accordance with Section 18(c)(vi) of this Chapter. The Director shall designate all other CAMUs in accordance with the following:
- 264.552(c)(1) (A) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;
- 264.552(c)(2) (B) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or to the environment resulting from exposure to hazardous wastes or hazardous constituents;
- 264.552(c)(3) (C) The CAMU shall include uncontaminated areas of the facility, only if including such areas for the purpose of managing CAMU-eligible waste is more protective than management of such wastes at contaminated areas of the facility;
- 264.552(c)(4) (D) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practicable;
- 264.552(c)(5) (E) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;
- 264.552(c)(6) (F) The CAMU shall enable the use, when appropriate, of treatment technologies (including innovative technologies) to enhance the long-term effectiveness of remedial actions by reducing the toxicity, mobility, or volume of wastes that will remain in place after closure of the CAMU; and
- 264.552(c)(7) (G) The CAMU shall, to the extent practicable, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.
- 264.552(d) (v) The owner/operator shall provide sufficient information to enable the Director to designate a CAMU in accordance with the criteria in Section 18(c) of this Chapter. This must include, unless not reasonably available, information on:
- 264.552(d)(1) (A) The origin of the waste and how it was subsequently managed (including a description of the timing and circumstances surrounding the disposal and/or release);
- 264.552(d)(2) (B) Whether the waste was listed or identified as hazardous at the time of disposal and/or release; and
- 264.552(d)(3) (C) Whether the disposal and/or release of the waste occurred before or after the land disposal requirements of Chapter 13 of these rules and regulations were in effect for the waste listing or characteristic.
- 264.552(e) (vi) The Director shall specify, in the permit or order **or remedy agreement**, requirements for CAMUs to include the following:
- 264.552(e)(1) (A) The areal configuration of the CAMU.
- 264.552(e)(2) (B) Except as provided in Section 18(c)(vii) of this Chapter, requirements for CAMU-eligible waste management to include the specification of applicable design, operation, treatment

and closure requirements.

264.552(e)(3) (C) Minimum design requirements. CAMUs, except as provided in Section 18(c)(vi) of this Chapter, into which wastes are placed must be designed in accordance with the following:

...(i) (I) Unless the Director approves alternate requirements under Section 18(c)(v)(C)(II) of this Chapter, CAMUs that consist of new, replacement, or laterally expanded units must include a composite liner and a leachate collection system that is designed and constructed to maintain less than a 30-cm depth of leachate over the liner. For purposes of Section 18(c) of this Chapter, composite liner means a system consisting of two components; the upper component must consist of a minimum 30-mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of high density polyethylene (HDPE) must be at least 60 mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component;

...(ii) (II) Alternate requirements. The Director may approve alternate requirements if:

...(ii)(A) (1.) The Director finds that alternate design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents into the ground water or surface water at least as effectively as the liner and leachate collection systems in Section 18(c)(v)(C)(I) of this Chapter; or

...(ii)(B) (2.) The CAMU is to be established in an area with existing significant levels of contamination, and the Director finds that an alternative design, including a design that does not include a liner, would prevent migration from the unit that would exceed long-term remedial goals.

264.552(e)(4) (D) Minimum treatment requirements: Unless the wastes will be placed in a CAMU for storage and/or treatment only in accordance with Section 18(c)(vi) of this Chapter, CAMU-eligible wastes that, absent Section 18(c) of this Chapter, would be subject to the treatment requirements of Chapter 13 of these rules and regulations, and that the Director determines contain principal hazardous constituents must be treated to the standards specified in Section 18(c)(v)(D)(III) of this Chapter.

...(i) (I) Principal hazardous constituents are those constituents that the Director determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

...(i)(A) (1.) In general, the Director will designate as principal hazardous constituents:

...(i)(A)(1) a. Carcinogens that pose a potential direct risk from ingestion or inhalation at the site at or above 10^{-3} ; and

...(i)(A)(2) b. Non-carcinogens that pose a potential direct risk from ingestion or inhalation at the site an order of magnitude or greater over their reference dose.

...(i)(B) (2.) The Director will also designate constituents as principal hazardous constituents, where appropriate, when risks to human health and the environment posed by the potential migration of constituents in wastes to ground water are substantially higher than cleanup levels or goals at the site; when making such a designation, the Director may consider such factors as constituent concentrations, and fate and transport characteristics under site conditions.

...(i)(C) (3.) The Director may also designate other constituents as principal hazardous constituents that the {Regional Administrator} Director determines pose a risk to human health and the environment substantially higher than the cleanup levels or goals at the site.

...(ii) (II) In determining which constituents are principal hazardous constituents, the Director must consider all constituents which, absent Section 18(c) of this Chapter, would be subject to the treatment requirements in Chapter 13 of these rules and regulations.

...(iii) (III) Waste that the Director determines contains principal hazardous constituents must meet treatment standards determined in accordance with Section 18(c)(v)(D)(IV) or (V) of this Chapter:

...(iv) (IV) Treatment standards for wastes placed in CAMUs.

...(iv)(A) (1.) For non-metals, treatment must achieve 90 percent reduction in total principal hazardous constituent concentrations, except as provided by Section 18(c)(v)(D)(IV)(3.) of this Chapter.

...(iv)(B) (2.) For metals, treatment must achieve 90 percent reduction in principal hazardous constituent concentrations as measured in leachate from the treated waste or media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by Section 18(c)(v)(D)(IV)(3.) of this Chapter.

...(iv)(C) (3.) When treatment of any principal hazardous constituent to a 90 percent reduction standard would result in a concentration less than 10 times the Universal Treatment Standard for that constituent, treatment to achieve constituent concentrations less than 10 times the Universal Treatment Standard is not required. Universal Treatment Standards are identified in Chapter 13, Section 4(h)(i) Table UTS of these rules and regulations.

...(iv)(D) (4.) For waste exhibiting the hazardous characteristic of ignitability, corrosivity or reactivity, the waste must also be treated to eliminate these characteristics.

...(iv)(E) (5.) For debris, the debris must be treated in accordance with Chapter 13, Section 4(f) of these rules and regulations, or by methods or to levels established under Section

18(c)(v)(D)(IV)(1.) through (4.) or Section 18(c)(v)(D)(V) of this Chapter, whichever the Director determines is appropriate.

...(iv)(F) (6.) Alternatives to TCLP. For metal bearing wastes for which metals removal treatment is not used, the Director may specify a leaching test other than the TCLP (SW-846 Method 1311, Chapter 1, Section 1(g) of these rules and regulations to measure treatment effectiveness, provided the Director determines that an alternative leach testing protocol is appropriate for use, and that the alternative more accurately reflects conditions at the site that affect leaching.

...(v) (V) Adjusted standards. The Director may adjust the treatment level or method in Section 18(c)(v)(D)(IV) of this Chapter to a higher or lower level, based on one or more of the following factors, as appropriate. The adjusted level or method must be protective of human health and the environment:

...(v)(A) (1.) The technical impracticability of treatment to the levels or by the methods in Section 18(c)(v)(D)(IV) of this Chapter;

...(v)(B) (2.) The levels or methods in Section 18(c)(v)(D)(IV) of this Chapter would result in concentrations of principal hazardous constituents ^ {PHCs} that are significantly above or below cleanup standards applicable to the site (established either site-specifically, or promulgated under state or federal law);

...(v)(C) (3.) The views of the affected local community on the treatment levels or methods in Section 18(c)(v)(D)(IV) of this Chapter as applied at the site, and, for treatment levels, the treatment methods necessary to achieve these levels;

...(v)(D) (4.) The short-term risks presented by the on-site treatment method necessary to achieve the levels or treatment methods in Section 18(c)(v)(D)(IV) of this Chapter;

...(v)(E) (5.) The long-term protection offered by the engineering design of the CAMU and related engineering controls:

...(v)(E)(1) a. Where the treatment standards in Section 18(c)(v)(D)(IV) of this Chapter are substantially met and the principal hazardous constituents in the waste or residuals are of very low mobility; or

...(v)(E)(2) b. Where cost-effective treatment has been used and the CAMU meets the W.S. 305-11-503(d) liner and leachate collection requirements for new land disposal units at Chapter 10, Section 13(b)(iii) and (iv) of these rules and regulations; or

...(v)(E)(3) c. Where, after review of appropriate treatment technologies, the Director determines that cost-effective treatment is not reasonably available, and the CAMU meets the W.S. 305-11-503(d) liner and leachate collection requirements for new land disposal units at Chapter 10, Section 13(b)(iii) and (iv) of these rules and regulations; or

...(v)(E)(4) d. Where cost-effective treatment has been used and the principal hazardous constituents in the treated wastes are of very low mobility; or

...(v)(E)(5) e. Where, after review of appropriate treatment technologies, the Director determines that cost-effective treatment is not reasonably available, the principal hazardous constituents in the wastes are of very low mobility, and either the CAMU meets or exceeds the liner standards for new, replacement, or laterally expanded CAMUs in Section 18(c)(V)(C)(I) and (II) of this Chapter, or the CAMU provides substantially equivalent or greater protection.

...(vi) (VI) The treatment required by the treatment standards must be completed prior to, or within a reasonable time after, placement in the CAMU.

...(vii) (VII) For the purpose of determining whether wastes placed in CAMUs have met site-specific treatment standards, the Director may, as appropriate, specify a subset of the principal hazardous constituents in the waste as analytical surrogates for determining whether treatment standards have been met for other principal hazardous constituents. This specification will be based on the degree of difficulty of treatment and analysis of constituents with similar treatment properties.

264.552(e)(5) (E) Except as provided in Section 18(c)(vi) of this Chapter, requirements for ground water monitoring and corrective action that are sufficient to:

...(i) (I) Continue to detect and to characterize the nature, extent, concentration, direction, and movement of existing releases of hazardous constituents in ground water from sources located within the CAMU; and

...(ii) (II) Detect and subsequently characterize releases of hazardous constituents to ground water that may occur from areas of the CAMU in which wastes will remain in place after closure of the CAMU; and

...(iii) (III) Require notification to the Director and corrective action as necessary to protect human health and the environment for releases to ground water from the CAMU.

264.552(e)(6) (F) Except as provided in Section 18(c)(vi) of this Chapter, closure and post-closure requirements:

...(i) (I) Closure of corrective action management units shall:

...(i)(A) (1.) Minimize the need for further maintenance; and

...(i)(B) (2.) Control, minimize, or eliminate, to the extent necessary to protect human health and the environment, for areas where wastes remain in place, post-closure escape of hazardous wastes, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, to surface waters, or to the atmosphere.

- ...(ii) (II) Requirements for closure of CAMUs shall include the following, as appropriate and as deemed necessary by the Director for a given CAMU:
- ...(ii)(A) (1.) Requirements for excavation, removal, treatment or containment of wastes; and
- ...(ii)(B) (2.) Requirements for removal and decontamination of equipment, devices, and structures used in CAMU-eligible waste management activities within the CAMU.
- ...(iii) (III) In establishing specific closure requirements for CAMUs under Section 18(c)(v) of this Chapter, the Director shall consider the following factors:
- ...(iii)(A) (1.) CAMU characteristics;
- ...(iii)(B) (2.) Volume of wastes which remain in place after closure;
- ...(iii)(C) (3.) Potential for releases from the CAMU;
- ...(iii)(D) (4.) Physical and chemical characteristics of the waste;
- ...(iii)(E) (5.) Hydrological and other relevant environmental conditions at the facility which may influence the migration of any potential or actual releases; and
- ...(iii)(F) (6.) Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU.
- ...(iv) (IV) Cap requirements:
- ...(iv)(A) (1.) At final closure of the CAMU, for areas in which wastes will remain after closure of the CAMU, with constituent concentrations at or above remedial levels or goals applicable to the site, the owner or operator must cover the CAMU with a final cover designed and constructed to meet the following performance criteria, except as provided in Section 18(c)(v)(F)(IV)(2.) of this Chapter:
- ...(iv)(A)(1) a. Provide long-term minimization of migration of liquids through the closed unit;
- ...(iv)(A)(2) b. Function with minimum maintenance;
- ...(iv)(A)(3) c. Promote drainage and minimize erosion or abrasion of the cover;
- ...(iv)(A)(4) d. Accommodate settling and subsidence so that the cover's integrity is maintained; and
- ...(iv)(A)(5) e. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
- ...(iv)(B) (2.) The Director may determine that modifications to Section 18(c)(v)(F)(IV)(1.) of this Chapter are

needed to facilitate treatment or the performance of the CAMU (e.g., to promote biodegradation).

...(v) (V) Post-closure requirements as necessary to protect human health and the environment, to include, for areas where wastes will remain in place, monitoring and maintenance activities, and the frequency with which such activities shall be performed to ensure the integrity of any cap, final cover, or other containment system.

264.552(f) (vii) CAMUs used for storage and/or treatment only are CAMUs in which wastes will not remain after closure. Such CAMUs must be designated in accordance with all of the requirements of Section 18(c) of this Chapter, except as follows:

264.552(f)(1) (A) CAMUs that are used for storage and/or treatment only and that operate in accordance with the time limits established in the staging pile regulations at Section 18(e)(iv)(A)(III), (e)(viii) and (e)(ix) of this Chapter are subject to the requirements for staging piles at Section 18(e)(iv)(A)(I) and (II), Section 18(e)(iv)(B), Section 18(e)(v) and (vi), and Section 18(e)(x) and (xi) of this Chapter in lieu of the performance standards and requirements for CAMUs in Section 18 (c)(iii) and (c)(v)(C) through (F) of this Chapter.

264.552(f)(2) (B) CAMUs that are used for storage and/or treatment only and that do not operate in accordance with the time limits established in the staging pile regulations at Section 18(e)(iv)(A)(III), (e)(viii) and (e)(ix) of this Chapter:

...(i) (I) Must operate in accordance with a time limit, established by the Director, that is no longer than necessary to achieve a timely remedy selected for the waste, and

...(ii) (II) Are subject to the requirements for staging piles at Section 18(e)(iv)(A)(I) and (II), Section 18(e)(iv)(B), Section 18(e)(v) and (vi), and Section 18(e)(x) and (xi) of this Chapter in lieu of the performance standards and requirements for CAMUs in Section 18 (c)(iii) and (c)(v)(D) and (F) of this Chapter.

264.552(g) (viii) CAMUs into which wastes are placed where all wastes have constituent levels at or below remedial levels or goals applicable to the site do not have to comply with the requirements for liners at Section 18(c)(v)(C)(I) of this Chapter, caps at Section 18 (c)(v)(F)(IV) of this Chapter, ground water monitoring requirements at Section 18(c)(v)(E) of this Chapter or, for treatment and/or storage-only CAMUs, the design standards at {paragraph (f) of this Section} Section 18(c)(vi) of this Chapter.

264.552(h) (ix) The Director shall provide public notice and a reasonable opportunity for public comment before designating a CAMU. Such notice shall include the rationale for any proposed adjustments under Section 18(c)(v)(D)(V) of this Chapter to the treatment standards in Section 18(c)(v)(D)(IV) of this Chapter.

264.552(i) (x) Notwithstanding any other provision of this Section, the Director may impose additional requirements as necessary to protect human health and the environment.

264.552(i) (xi) Incorporation of a CAMU into an existing permit

must be approved by the Director according to the procedures for Department-initiated permit modifications under Chapter 6, Section 2(b) of these rules and regulations, or according to the permit modification procedures of Chapter 6, Section 2 (c) of these rules and regulations.

264.552(k) (xii) The designation of a CAMU does not change the Department's existing authority to address clean-up levels, media-specific points of compliance to be applied to remediation at a facility, or other remedy selection decisions.

264.553 (b) TEMPORARY UNITS (TU).

264.553(a) (i) For temporary tanks and container storage areas used for treatment or storage of hazardous remediation wastes during remedial activities required under Section 6(1) of this Chapter, or under Chapter 11, 8(f) of these rules and regulations; W.S. 35-11-503(d); or RCRA Section 3008(h), the Director may determine that a design, operating, or closure standard applicable to such units may be replaced by alternative requirements which are protective of human health and the environment the Director may designate a unit at the facility, as a temporary unit. A temporary unit must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the temporary unit originated. For temporary units, the Director may replace the design, operating, or closure standard applicable to these units under Chapters 5, 10 or 11 of these rules and regulations with alternative requirements which protect human health and the environment.

264.553(b) (ii) Any temporary unit to which alternative requirements are applied in accordance with Section 18(b)(i) of this Chapter shall be:

264.553(b)(1) (A) Located within the facility boundary; and

264.553(b)(2) (B) Used only for treatment or storage of remediation wastes.

264.553(c) (iii) In establishing standards to be applied to a temporary unit, the Director shall consider the following factors:

264.553(c)(1) (A) Length of time such unit will be in operation;

264.553(c)(2) (B) Type of unit;

264.553(c)(3) (C) Volumes of wastes to be managed;

264.553(c)(4) (D) Physical and chemical characteristics of the wastes to be managed in the unit;

264.553(c)(5) (E) Potential for releases from the unit;

264.553(c)(6) (F) Hydrogeological and other relevant environmental conditions at the facility which may influence the migration of any potential releases; and

264.553(c)(7) (G) Potential for exposure of humans and

environmental receptors if releases were to occur from the unit.

264.553(d) (iv) The Director shall specify in the permit or order the length of time a temporary unit will be allowed to operate, to be no longer than a period of one year. The Director shall also specify the design, operating, and closure requirements for the unit.

264.553(e) (v) The Director may extend the operational period of a temporary unit once for no longer than a period of one year beyond that originally specified in the permit or order, if the Director determines that:

264.553(e)(1) (A) Continued operation of the unit will not pose a threat to human health and the environment; and

264.553(e)(2) (B) Continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

264.553(f) (vi) Incorporation of a temporary unit or a time extension for a temporary unit into an existing permit shall be:

264.553(f)(1) (A) Approved in accordance with the procedures for Agency-initiated permit modifications under Chapter 6, Section 2(b) of these rules and regulations; or

264.553(f)(2) (B) Requested by the owner/operator as a Class II modification according to the procedures under Chapter 6, Section 2(c) of these rules and regulations.

264.553(g) (vii) The Director shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and shall make such documentation available to the public.

264.554 (e) STAGING PILES. ^ "I" and "you" refer to the owner/operator.

264.554(a) (i) What is a staging pile? A staging pile is an accumulation of solid, non-flowing remediation waste (as defined in Chapter 1, Section 1(f)(i) of these rules and regulations) that is not a containment building and is used only during remedial operations for temporary storage at a facility. A staging pile must be located within the contiguous property under the control of the owner/operator where the wastes to be managed in the staging pile originated. Staging piles must be designated by the Director according to the requirements in Section 18(e) of this Chapter.

264.554(a)(1) (A) For the purposes of Section 18(e) of this Chapter, storage includes mixing, sizing, blending, or other similar physical operations as long as they are intended to prepare the wastes for subsequent management or treatment.

264.554(a)(2) (B) Reserved

264.554(b) (ii) When may I use a staging pile? You may use a staging pile to store hazardous remediation waste (or remediation waste otherwise subject to land disposal restrictions) only if you

follow the standards and design criteria the Director has designated for that staging pile. The Director must designate the staging pile in a permit or, at an interim status facility, in a closure plan, or order (consistent with Chapter 11, Sections 2(c)(i)(E) and (ii)(E)). The Director must establish conditions in the permit, closure plan, or order that comply with Sections 18(c)(iv)-(xi) of this Chapter.

264.554(c) (iii) What information must I provide to get a staging pile designated? When seeking a staging pile designation, you must provide:

264.554(c)(1) (A) Sufficient and accurate information to enable the Director to impose standards and design criteria for your staging pile according to [paragraphs (d) through (k) of this Section] Sections 18(c)(iv)-(xi) of this Chapter;

264.554(c)(2) (B) Certification by an independent, qualified, registered professional engineer for technical data, such as design drawings and specifications, and engineering studies, unless the Director determines, based on information that you provide, that this certification is not necessary to ensure that a staging pile will protect human health and the environment; and

264.554(c)(3) (C) Any additional information the Director determines is necessary to protect human health and the environment.

264.554(d) (iv) What performance criteria must a staging pile satisfy? The Director must establish the standards and design criteria for the staging pile in the permit, closure plan, or order.

264.554(d)(1) (A) The standards and design criteria must comply with the following:

... (i) (I) The staging pile must facilitate a reliable, effective and protective remedy;

... (ii) (II) The staging pile must be designed so as to prevent or minimize releases of hazardous wastes and hazardous constituents into the environment, and minimize or adequately control cross-media transfer, as necessary to protect human health and the environment (for example, through the use of liners, covers, run-off/run-on controls, as appropriate); and

... (iii) (III) The staging pile must not operate for more than two years, except when the Director grants an operating term extension under Section 18(c)(ix) of this Chapter (entitled "May I receive an operating extension for a staging pile?"). You must measure the two-year limit, or other operating term specified by the Director in the permit, closure plan, or order, from the first time you place remediation waste into a staging pile. You must maintain a record of the date when you first placed remediation waste into the staging pile for the life of the permit, closure plan, or order, or for three years, whichever is longer.

264.554(d)(2) (B) In setting the standards and design criteria, the Director must consider the following factors:

... (i) (I) Length of time the pile will be in operation;

- ...(ii) (II) Volumes of wastes you intend to store in the pile;
- ...(iii) (III) Physical and chemical characteristics of the wastes to be stored in the unit;
- ...(iv) (IV) Potential for releases from the unit;
- ...(v) (V) Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and
- ...(vi) (VI) Potential for human and environmental exposure to potential releases from the unit;
- 264.554(e) (v) May a staging pile receive ignitable or reactive remediation waste? You must not place ignitable or reactive remediation waste in a staging pile unless:
- 264.554(e)(1) (A) You have treated, rendered or mixed the remediation waste before you placed it in the staging pile so that:
- ...(i) (I) The remediation waste no longer meets the definition of ignitable or reactive under Chapter 2, Sections 3(b) or (d); and
- ...(ii) (II) You have complied with Section 2(h)(ii) of this Chapter;
- 264.554(e)(2) (B) You manage the remediation waste to protect it from exposure to any material or condition that may cause it to ignite or react.
- 264.554(f) (vi) How do I handle incompatible remediation wastes in a staging pile? The term "incompatible waste" is defined in Chapter 1, Section 1(f)(i) of these rules and regulations. You must comply with the following requirements for incompatible wastes in staging piles:
- 264.554(f)(1) (A) You must not place incompatible remediation wastes in the same staging pile unless you have complied with Section 2(h)(ii) of this Chapter;
- 264.554(f)(2) (B) If remediation waste in a staging pile is incompatible with any waste or material stored nearby in containers, other piles, open tanks or land disposal units (for example, surface impoundments), you must separate the incompatible materials, or protect them from one another by using a dike, berm, wall or other device; and
- 264.554(f)(3) (C) You must not pile remediation waste on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to comply with [Sec. 264.17(b)] Section 2(h)(ii) of this Chapter.
- 264.554(g) (vii) Are staging piles subject to Land Disposal Restrictions (LDR) and Minimum Technological Requirements (MTR)? No. Placing hazardous remediation wastes into a staging pile does not

constitute land disposal of hazardous wastes or create a unit that is subject to the minimum technological requirements of W.S. 35-11-503(d) and RCRA Section 3004(o).

264.554(h) (viii) How long may I operate a staging pile? The Director may allow a staging pile to operate for up to two years after hazardous remediation waste is first placed into the pile. You must use a staging pile no longer than the length of time designated by the Director in the permit, closure plan, or order (the "operating term"), except as provided in Section 18(c)(ix) of this Chapter.

264.554(i) (ix) May I receive an operating extension for a staging pile?

264.554(i)(1) (A) The Director may grant one operating term extension of up to 180 days beyond the operating term limit contained in the permit, closure plan, or order (see Section 18(c)(xii) of this Chapter for modification procedures). To justify to the Director the need for an extension, you must provide sufficient and accurate information to enable the Director to determine that continued operation of the staging pile:

... (i) (I) Will not pose a threat to human health and the environment; and

... (ii) (II) Is necessary to ensure timely and efficient implementation of remedial actions at the facility.

264.554(i)(2) (B) The Director may, as a condition of the extension, specify further standards and design criteria in the permit, closure plan, or order, as necessary, to ensure protection of human health and the environment.

264.554(j) (x) What is the closure requirement for a staging pile located in a previously contaminated area?

264.554(j)(1) (A) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in a previously contaminated area of the site by removing or decontaminating all:

... (i) (I) Remediation waste;

... (ii) (II) Contaminated containment system components; and

... (iii) (III) Structures and equipment contaminated with waste and leachate.

264.554(j)(2) (B) You must also decontaminate contaminated subsoils in a manner and according to a schedule that the Director determines will protect human health and the environment.

264.554(j)(3) (C) The Director must include the above requirements in the permit, closure plan, or order in which the staging pile is designated.

264.554(k) (xi) What is the closure requirement for a staging pile

located in an uncontaminated area?

264.554(k)(1) (A) Within 180 days after the operating term of the staging pile expires, you must close a staging pile located in an uncontaminated area of the site according to Sections 11(i)(i) and 7(b) of this Chapter; or according to Chapter 11, Sections 13(i)(i) and 9(b).

264.554(k)(2) (B) The Director must include the above requirement in the permit, closure plan, or order in which the staging pile is designated.

264.554(l) (xii) How may my existing permit ^, closure plan, or order be modified to allow me to use a staging pile?

264.554(l)(1) (A) To modify a permit, ^ to incorporate a staging pile or staging pile operating term extension, either:

...(i) (I) The Director must approve the modification under the procedures for DEQ-initiated permit modifications in Chapter 6, Section 2(b); or

...(ii) (II) You must request a Class 2 modification under Chapter 6, Section 2(b).

264.554(l)(2) (B) **Reserved** ^

264.554(l)(3) (C) To modify a closure plan to incorporate a staging pile or staging pile operating term extension, you must follow the applicable requirements under Section 7(c)(iii) of this Chapter or Chapter 11, Section 9(c)(iii).

264.554(l)(4) (D) To modify an order to incorporate a staging pile or staging pile operating term extension, you must follow the terms of the order and the applicable provisions of Chapter 11, Sections 2(c)(i)(E) or (c)(ii)(E) of these rules and regulations.

264.554(m) (xiii) Is information about the staging pile available to the public? The Director must document the rationale for designating a staging pile or staging pile operating term extension and make this documentation available to the public.

264.555 (f) DISPOSAL OF CAMU-ELIGIBLE WASTES IN PERMITTED HAZARDOUS WASTE LANDFILLS.

264.555(a) (i) The Director with regulatory oversight at the location where the cleanup is taking place may approve placement of CAMU-eligible wastes in hazardous waste landfills not located at the site from which the waste originated, without the wastes meeting the requirements of Chapter 13 of these rules and regulations, if the conditions in Section 18(f)(i)(A) through (C) of this Chapter are met:

264.555(a)(1) (A) The waste meets the definition of CAMU-eligible waste in Section 18 (c)(i)(A) and (B) of this Chapter.

264.555(a)(2) (B) The Director with regulatory oversight at the location where the cleanup is taking place identifies principal hazardous constituents in such waste, in accordance with Section 18(c)(v)(D)(I) and (II) of this Chapter, and requires that such

principal hazardous constituents are treated to any of the following standards specified for CAMU-eligible wastes:

- ...(i) (I) The treatment standards under Section 18(c)(v)(D)(IV) of this Chapter; or
 - ...(ii) (II) Treatment standards adjusted in accordance with Section 18(c)(v)(D)(V)(1.), (3.), (4.) or (5.)a. of this Chapter; or
 - ...(iii) (III) Treatment standards adjusted in accordance with Section 18(c)(v)(D)(V)(5.)b. of this Chapter, where treatment has been used and that treatment significantly reduces the toxicity or mobility of the principal hazardous constituents in the waste, minimizing the short-term and long-term threat posed by the waste, including the threat at the remediation site.
- 264.555(a)(3) (C) The landfill receiving the CAMU-eligible waste must have a RCRA **or State** hazardous waste permit, meet the requirements for new landfills in 40 CRF Part 264, Subpart N **or State equivalent**, and be authorized to accept CAMU-eligible wastes; for the purposes of this requirement, Apermit@ does not include interim status.
- 264.555(b) (ii) The person seeking approval shall provide sufficient information to enable the Director with regulatory oversight at the location where the cleanup is taking place to approve placement of CAMU-eligible waste in accordance with Section 18(f)(i) of this Chapter. Information required by Section 18(c)(iv)(A) through (C) of this Chapter for CAMU applications must be provided, unless not reasonably available.
- 264.555(c) (iii) The Director with regulatory oversight at the location where the cleanup is taking place shall provide public notice and a reasonable opportunity for public comment before approving CAMU-eligible waste for placement in an off-site permitted hazardous waste landfill, consistent with the requirements for CAMU approval at Section 18(c)(viii) of this Chapter. The approval must be specific to a single remediation.
- 264.555(d) (iv) Applicable hazardous waste management requirements in Chapter 10 of these rules and regulation, including recordkeeping requirements to demonstrate compliance with treatment standards approved under Section 18(f) of this Chapter for CAMU-eligible waste must be incorporated into the receiving facility permit through permit issuance or a permit modification, providing notice and an opportunity for comment and a hearing. Notwithstanding Chapter 4, Section 2(b)(i) of these rules and regulations, a landfill may not receive hazardous CAMU-eligible waste under Section 18(f) of this Chapter unless its permit specifically authorizes receipt of such waste.
- 264.555(e) (v) For each remediation, CAMU-eligible waste may not be placed in an off-site landfill authorized to receive CAMU-eligible waste in accordance with Section 18(f)(iv) of this Chapter until the following additional conditions have been met:
- 264.555(e)(1) (A) The landfill owner/operator notifies the Regional Administrator **or State Director** responsible for oversight of the landfill and persons on the facility mailing list, maintained

in accordance with 40 CFR 124.10(c)(1) or State equivalent, of his or her intent to receive CAMU-eligible waste in accordance with Section 18(f) of this Chapter the notice must identify the source of the remediation waste, the principal hazardous constituents in the waste, and treatment requirements.

264.555(e)(2) (B) Persons on the facility mailing list may provide comments, including objections to the receipt of the CAMU-eligible waste, to the Director within 15 days of notification.

264.555(e)(3) (C) The Regional Administrator or State Director may object to the placement of the CAMU-eligible waste in the landfill within 30 days of notification; the Regional Administrator or State Director may extend the review period an additional 30 days because of public concerns or insufficient information.

264.555(e)(4) (D) CAMU-eligible wastes may not be placed in the landfill until the Regional Administrator or State Director has notified the facility owner/operator that he or she does not object to its placement.

264.555(e)(5) (E) If the Regional Administrator or State Director objects to the placement or does not notify the facility owner/operator that he or she has chosen not to object, the facility may not receive the waste, notwithstanding 40 CFR 270.4(a) or State equivalent, until the objection has been resolved, or the owner/operator obtains a permit modification in accordance with the procedures of 40 CFR 270.42 or State equivalent specifically authorizing receipt of the waste.

264.555(e)(6) (F) As part of the permit issuance or permit modification process of Section 18(f)(iv) of this Chapter, the Director may modify, reduce, or eliminate the notification requirements of Section 18(f)(v) of this Chapter as they apply to specific categories of CAMU-eligible waste, based on minimal risk.

264.555(f) (vi) Generators of CAMU-eligible wastes sent off-site to a hazardous waste landfill under Section 18(f) of this Chapter must comply with the requirements of Chapter 13, Section 1(g)(i)(D); off-site facilities treating CAMU-eligible wastes to comply with Section 18(f) of this Chapter must comply with the requirements of Chapter 13, Section 1(g)(ii)(D), except that the certification must be with respect to the treatment requirements of Section 18(f)(i)(B) of this Chapter.

264.555(g) (vii) For the purposes of Section 18(f) of this Chapter only, the 'design of the CAMU' in Section 18(c)(v)(D)(V)(5.) of this Chapter means design of the permitted Subtitle C or W.S. 305-11-503(d) or a permitted State hazardous waste landfill.

264/Subpart T Section 19. RESERVED

264/Subpart U Section 20. RESERVED

264/Subpart V Section 21. RESERVED

264/Subpart W Section 22. DRIP PADS

264.570 (a) APPLICABILITY.

264.570(a) (i) The requirements of this Section apply to owners and operators of facilities that use new or existing drip pads to convey treated wood drippage, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before December 6, 1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 6, 1990. All other drip pads are new drip pads. The requirement at Section 22(d)(ii)(C) of this Chapter to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992 except for those constructed after December 24, 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992.

264.570(b) (ii) The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither run-off nor run-on is generated is not subject to regulation under Section 22(d)(v) or Section 22(d)(vi) of this Chapter, as appropriate.

264.570(c) (iii) The requirements of this Section are not applicable to the management of infrequent and incidental drippage in storage yards provided that:

264.570(c)(1) (A) The owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan must describe how the owner or operator will do the following:

- ...(i) (I) Clean up the drippage;
- ...(ii) (II) Document the cleanup of the drippage;
- ...(iii) (III) Retain documents regarding cleanup for three years; and
- ...(iv) (IV) Manage the contaminated media in a manner consistent with State regulations.

264.571 (b) ASSESSMENT OF EXISTING DRIP PAD INTEGRITY.

264.571(a) (i) For each existing drip pad as defined in Section 22(a) of this Chapter, the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of Section 22 of this Chapter, except the requirements for liners and leak detection systems of Section 22(d)(ii) of this Chapter. No later than the effective date of this rule, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of Section 22(d) of this Chapter are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards of Section 22(d) of this Chapter, except the standards for

liners and leak detection systems, specified in Section 22(d)(ii) of this Chapter.

264.571(b) (ii) The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of Section 22(d)(ii) of this Chapter, and submit the plan to the Director no later than 2 years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of Section 22(d) of this Chapter. The plan must be reviewed and certified by an independent qualified registered professional engineer.

264.571(c) (iii) Upon completion of all upgrades, repairs, and modifications, the owner or operator must submit to the Director, the as-built drawings for the drip pad together with a certification by an independent qualified registered professional engineer attesting that the drip pad conforms to the drawings.

264.571(d) (iv) If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of Section 22(d)(xiii) of this Chapter or close the drip pad in accordance with Section 22(f) of this Chapter.

264.572 (c) DESIGN AND INSTALLATION OF NEW DRIP PADS. Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following:

264.572(a) (i) All of the requirements of Section 22(d) of this Chapter, (except Section 22(d)(i)(D)), and Sections 22(e) and 22(f) of this Chapter, or

264.572(b) (ii) All of the requirements of Section 22(d) of this Chapter, (except Section 22(d)(ii)), and Sections 22(e) and 22(f) of this Chapter.

264.573 (d) DESIGN AND OPERATING REQUIREMENTS.

264.573(a) (i) Drip pads must:

264.573(a)(1) (A) Be constructed of non-earthern materials, excluding wood and non-structurally supported asphalt:

264.573(a)(2) (B) Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;

264.573(a)(3) (C) Have a curb or berm around the perimeter;

(D) Hydraulic conductivity requirements:

264.573(a)(4)(i) (I) Have a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to 1×10^{-7} centimeters per second such that the entire surface where drippage occurs or may run across is capable of containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface

material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with Section 22(c)(i) instead of Section 22(c)(ii) of this Chapter.

...(ii) (II) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by an independent, qualified registered professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of Section 22(d) of this Chapter, except for Section 22(d)(ii) of this Chapter.

264.573(a)(5) (E) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

[Note: The DEQ will generally consider applicable standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) or the American Society of Testing and Materials (ASTM) in judging the structural integrity requirement of Section 22(d)(i) of this Chapter.]

264.573(b) (ii) If an owner/operator elects to comply with Section 22(c)(ii) of this Chapter instead of Section 22(c)(i), the drip pad must have:

264.573(b)(1) (A) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and to prevent releases into the adjacent subsurface soil or groundwater or surface water during the active life of the facility. The liner must be:

...(i) (I) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);

...(ii) (II) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and

...(iii) (III) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and

264.573(b)(2) (B) A leakage detection system immediately above the liner that is designed, constructed, maintained and operated to detect leakage from the drip pad. The leakage detection system must be:

...(i) (I) Constructed of materials that are:

...(i)(A) (1.) Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

...(i)(B) (2.) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad;

...(ii) (II) Designed and operated to function without clogging through the scheduled closure of the drip pad; and

...(iii) (III) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

264.573(b)(3) (C) A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.

264.573(c) (iii) Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

[Note: See Section 22(d)(xiii) of this Chapter for remedial action required if deterioration or leakage is detected.]

264.573(d) (iv) The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.

264.573(e) (v) Unless protected by a structure, as described in Section 22(a)(ii) of this Chapter, the owner or operator must design, construct, operate and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm, unless the system has sufficient excess capacity to contain any run-off that might enter the system.

264.573(f) (vi) Unless protected by a structure or cover as described in Section 22(a)(ii) of this Chapter, the owner or operator must design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

264.573(g) (vii) The drip pad must be evaluated to determine that it meets the requirements of Sections 22(d)(i) through 22(d)(vi) of this Chapter and the owner or operator must obtain a statement from

an independent, qualified registered professional engineer certifying that the drip pad design meets the requirements of Section 22(d) of this Chapter.

- 264.573(h) (viii) Dripping and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.
- 264.573(i) (ix) The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log. The owner/operator must determine if the residues are hazardous as per Chapter 8, Section 1(b) of these rules and regulations and, if so, must manage them under Chapter 1, Sections 1(h)-1(j); Chapter 2; Chapter 3, Section 2; Chapter 4; Chapter 5; Chapter 6, Section 2; Chapter 7; Chapters 8 through 11; Chapter 12, Sections 1 through 8, 19 and 20; and Chapter 13 of these rules and regulations, and W.S. 35-11-503(d).
- 264.573(j) (x) Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.
- 264.573(k) (xi) After being removed from the treatment vessel, treated wood from pressure and non-pressure processes must be held on the drip pad until dripping has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.
- 264.573(l) (xii) Collection and holding units associated with run-on and run-off control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.
- 264.573(m) (xiii) Throughout the active life of the drip pad and as specified in the permit, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:
- 264.573(m)(1) (A) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage in the leak detection system), the owner or operator must:
- ...(i) (I) Enter a record of the discovery in the facility operating log;
- ...(ii) (II) Immediately remove the portion of the drip pad affected by the condition from service;

- ...(iii) (III) Determine what steps must be taken to repair the drip pad and clean up any leakage from below the drip pad, and establish a schedule for accomplishing the repairs;
- ...(iv) (IV) Within 24 hours after discovery of the condition, notify the Director of the condition and, within 10 working days, provide written notice to the Director with a description of the steps that will be taken to repair the drip pad and clean up any leakage, and the schedule for accomplishing this work.
- 264.573(m)(2) (B) The Director will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and clean up are complete and notify the owner or operator of the determination and the underlying rationale in writing.
- 264.573(m)(3) (C) Upon completing all repairs and clean up, the owner or operator must notify the Director in writing and provide a certification signed by an independent, qualified registered professional engineer, that the repairs and clean up have been completed according to the written plan submitted in accordance with Section 22(d)(xiii)(A)(IV) of this Chapter.
- 264.573(n) (xiv) Should a permit be necessary, the Director will specify in the permit all design and operating practices that are necessary to ensure that the requirements of Section 22(d) of this Chapter are satisfied.
- 264.573(o) (xv) The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.
- 264.574 (e) INSPECTIONS.
- 264.574(a) (i) During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of Section 22(d) of this Chapter by an independent qualified, registered professional engineer. This certification must be maintained at the facility as part of the facility operating record. After installation, liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.
- 264.574(b) (ii) While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:
- 264.574(b)(1) (A) Deterioration, malfunctions or improper operation of run-on and run-off control systems;
- 264.574(b)(2) (B) The presence of leakage in and proper functioning of leak detection system.

264.574(b)(3) (C) Deterioration or cracking of the drip pad surface.

[Note: See Section 22(d)(xiii) of this Chapter for remedial action required if deterioration or leakage is detected.]

264.575 (f) CLOSURE.

264.575(a) (i) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

264.575(b) (ii) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in Section 22(f)(i) of this Chapter, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills (Section 13(k) of this Chapter). For permitted units, the requirement to have a permit continues throughout the post-closure period. In addition, for the purpose of closure, post-closure, and financial responsibility, such a drip pad is then considered to be landfill, and the owner or operator must meet all of the requirements for landfills specified in Section 7 of this Chapter and Chapter 5 of these rules and regulations.

(iii) Existing drip pads:

264.575(c)(1) (A) The owner or operator of an existing drip pad, as defined in Section 22(a) of this Chapter, that does not comply with the liner requirements of Section 22(d)(ii)(A) of this Chapter must:

...(i) (I) Include in the closure plan for the drip pad under Section 7(c) of this Chapter both a plan for complying with Section 22(f)(i) of this Chapter and a contingent plan for complying with Section 22(f)(ii) of this Chapter in case not all contaminated subsoils can be practicably removed at closure; and

...(ii) (II) Prepare a contingent post-closure plan under Section 7(i) of this Chapter for complying with Section 22(f)(ii) of this Chapter in case not all contaminated subsoils can be practicably removed at closure.

264.575(c)(2) (B) The cost estimates calculated under Chapter 5, Section 1(c) of these rules and regulations for closure and post-closure care of a drip pad subject to Section 22(f)(iii) of this Chapter must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under Section 22(f)(i) of this Chapter.

264/Subpart X Section 23. MISCELLANEOUS UNITS

- 264.600 (a) APPLICABILITY. The requirements in this Section apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units, except as Section 1(a) of this Chapter provides otherwise.
- 264.601 (b) ENVIRONMENTAL PERFORMANCE STANDARDS. A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Permits for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions shall include those requirements of Sections 8 through 14 and Sections 26 through 28 of this Chapter; Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulations and 40 CFR part 146 that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:
- 264.601(a) (i) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in the ground water or subsurface environment, considering:
- 264.601(a)(1) (A) The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;
- 264.601(a)(2) (B) The hydrologic and geologic characteristics of the unit and the surrounding area;
- 264.601(a)(3) (C) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water;
- 264.601(a)(4) (D) The quantity and direction of ground-water flow;
- 264.601(a)(5) (E) The proximity to and withdrawal rates of current and potential ground-water users;
- 264.601(a)(6) (F) The patterns of land use in the region;
- 264.601(a)(7) (G) The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation;
- 264.601(a)(8) (H) The potential for health risks caused by human exposure to waste constituents; and
- 264.601(a)(9) (I) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;
- 264.601(b) (ii) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste

constituents in surface water, or wetlands or on the soil surface considering:

- 264.601(b)(1) (A) The volume and physical and chemical characteristics of the waste in the unit;
 - 264.601(b)(2) (B) The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;
 - 264.601(b)(3) (C) The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;
 - 264.601(b)(4) (D) The patterns of precipitation in the region;
 - 264.601(b)(5) (E) The quantity, quality, and direction of ground-water flow;
 - 264.601(b)(6) (F) The proximity of the unit to surface waters;
 - 264.601(b)(7) (G) The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;
 - 264.601(b)(8) (H) The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;
 - 264.601(b)(9) (I) The patterns of land use in the region;
 - 264.601(b)(10) (J) The potential for health risks caused by human exposure to waste constituents; and
 - 264.601(b)(11) (K) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.
- 264.601(c) (iii) Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering:
- 264.601(c)(1) (A) The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates;
 - 264.601(c)(2) (B) The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;
 - 264.601(c)(3) (C) The operating characteristics of the unit;
 - 264.601(c)(4) (D) The atmospheric, meteorologic, and topographic characteristics of the unit and the surrounding area;
 - 264.601(c)(5) (E) The existing quality of the air, including other sources of contamination and their cumulative impact on the air;

- 264.601(c)(6) (F) The potential for health risks caused by human exposure to waste constituents; and
- 264.601(c)(7) (G) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.
- 264.602 (c) MONITORING, ANALYSIS, INSPECTION, RESPONSE, REPORTING, AND CORRECTIVE ACTION. Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies must ensure compliance with Sections 23(b), 2(f), 3(d), 5(f), 5(g), 5(h), and 6(l) of this Chapter as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.
- 264.603 (d) POST-CLOSURE CARE. A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with Section 23(b) of this Chapter during the post-closure care period. In addition, if a treatment or storage unit has contaminated soils or ground water that cannot be completely removed or decontaminated during closure, then that unit must also meet the requirements of Section 23(b) of this Chapter during post-closure care. The post-closure plan under Section 7(i) of this Chapter must specify the procedures that will be used to satisfy this requirement.
- 264/Subpart Y Section 24. RESERVED.
- 264/Subpart Z Section 25. RESERVED.
- 264/Subpart AA Section 26. AIR EMISSION STANDARDS FOR PROCESS VENTS
- 264.1030 (a) APPLICABILITY.
- 264.1030(a) (i) The regulations in this Section apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in Section 1(a) of this Chapter).
- 264.1030(b) (ii) Except for Sections 26(e)(iv) and (v) of this Chapter, this Section applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10-ppmw, if these operations are conducted in one of the following:
- 264.1030(b)(1) (A) Units that are subject to the permitting requirements of Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Sections 2 of these rules and regulations, or
- 264.1030(b)(2) (B) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of Chapter 8, Section 3(e)(i) of these rules and regulations (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located on hazardous waste management facilities otherwise subject to the permitting requirements of Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulations, or

264.1030(b)(3) (C) A unit that is exempt from permitting under the provisions of Chapter 8, Section 3(e)(i) of these rules and regulations (i.e., a 90-day tank or container) and is not a recycling unit under the provisions of Chapter 2, Section 1(f) of these rules and regulations.

264.1030(c) (iii) For the owner and operator of a facility subject to Section 26 of this Chapter ~~[-subpart-]~~ and who received a final permit, under W.S. 35-11-503(d) and/or RCRA Section 3005 prior to December 6, 1996, the requirements of Section 26 of this Chapter shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Chapter 3, Section 1(l) of these rules and regulations or reviewed in accordance with the requirements of Chapter 4, Section 2(a)(iv) of these rules and regulations. Until such date when the owner and operator receives a final permit incorporating the requirements of Section 26, the owner and operator is subject to the requirements of Chapter 11, Section 28 of these rules and regulations.

[Note: The requirements of Sections 26(c) through 26(g) of this Chapter apply to process vents on hazardous waste recycling units previously exempt under Chapter 2, Section 1(f)(iii)(A) of these rules and regulations. Other exemptions under Chapter 2, Section 1(d) ~~and Chapter 8, Section 3(e)~~ of these rules and regulations, and Section 1(a)(vii) of this Chapter are not affected by these requirements.]

(iv) Reserved

(v) The requirements Section 26 of this Chapter do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to Section 26 of this Chapter are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. The documentation of compliance under regulations at 40 CFR part 60, part 61, or part 63 shall be kept with, or made readily available with the facility operating record.

264.1031 (b) DEFINITIONS. The following terms defined in Chapter 1, Section 1(f)(i) of these rules and regulations apply to Section 26 of this Chapter: "air stripping operation," "bottoms receiver," "closed-vent system," "condenser," "connector," "continuous recorder," "control device," "control device shutdown," "distillate receiver," "distillation operation," "double block and bleed system," "equipment," "flame zone," "flow indicator," "first attempt at repair," "fractionation operation," "hazardous waste management unit shutdown," "hot well," "in gas/vapor service," "in heavy liquid service," "in light liquid service," "in situ sampling system," "in vacuum service," "malfunction," "open-ended valve or line," "pressure release," "process heater," "process vent," "repaired," "sensor," "separator tank," "solvent extraction operation," "startup," "steam stripping operation," "surge control tank," "thin-film evaporation operation," "vapor incinerator," and "vented."

264.1032 (c) STANDARDS: PROCESS VENTS.

- 264.1032(a) (i) The owner or operator of a facility with process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations managing hazardous wastes with organic concentrations of at least 10 ppmw shall either:
- 264.1032(a)(1) (A) Reduce total organic emissions from all affected process vents at the facility below 1.4 kg/h (3 lb/h) and 2.8 Mg/yr (3.1 tons/yr), or
- 264.1032(a)(2) (B) Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by 95 weight percent.
- 264.1032(b) (ii) If the owner or operator installs a closed-vent system and control device to comply with the provisions of Section 26(c)(i) of this Chapter the closed-vent system and control device must meet the requirements of Section 26(d) of this Chapter.
- 264.1032(c) (iii) Determinations of vent emissions and emission reductions or total organic compound concentrations achieved by add-on control devices may be based on engineering calculations or performance tests. If performance tests are used to determine vent emissions, emission reductions, or total organic compound concentrations achieved by add-on control devices, the performance tests must conform with the requirements of Section 26(e)(iii) of this Chapter.
- 264.1032(d) (iv) When an owner or operator and the Director do not agree on determinations of vent emissions and/or emission reductions or total organic compound concentrations achieved by add-on control devices based on engineering calculations, the procedures in Section 26(e)(iii) of this Chapter shall be used to resolve the disagreement.
- 264.1033 (d) STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES.
- (i) Applicability.
- 264.1033(a)(1) (A) Owners or operators of closed-vent systems and control devices used to comply with provisions of this Chapter and Chapter 5 of these rules and regulations shall comply with the provisions of Section 26(d) of this Chapter.
- 264.1033(a)(2)(i) (B) (I) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this Section on the effective date that the facility becomes subject to the provisions of this Section must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this Section for installation and startup.
- ..(2)(ii) (II) Any unit that begins operation after December 21, 1990, and is subject to the provisions of ~~the~~ this Section ~~[subpart]~~ when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating

on startup of the affected unit); the 30-month implementation schedule does not apply.

.(2)(iii) (III) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this Section shall comply with all requirements of the Section as soon as practicable, but no later than 30 months after the amendment's effective date. When control equipment required by this Section can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this Section. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

.(2)(iv) (IV) Owners and operators of facilities and units that become newly subject to the requirements of this Section ~~[subpart]~~ after December 8, 1997, due to an action other than those described in Section 26(d)(i)(B)(III) of this Chapter must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this Section; the 30-month implementation schedule does not apply).

264.1033(b) (ii) A control device involving vapor recovery (e.g., a condenser or adsorber) shall be designed and operated to recover the organic vapors vented to it with an efficiency of 95 weight percent or greater unless the total organic emission limits of Section 26(c)(i)(A) of this Chapter for all affected process vents can be attained at an efficiency less than 95 weight percent.

264.1033(c) (iii) An enclosed combustion device (e.g., a vapor incinerator, boiler, or process heater) shall be designed and operated to reduce the organic emissions vented to it by 95 weight percent or greater; to achieve a total organic compound concentration of 20 ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to 3 percent oxygen; or to provide a minimum residence time of 0.50 seconds at a minimum temperature of 760°C. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater.

(iv) Flare design and operation:

264.1033(d)(1) (A) A flare shall be designed for and operated with no visible emissions as determined by the method specified in Section 26(d)(v)(A) of this Chapter, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

264.1033(d)(2) (B) A flare shall be operated with a flame present at all times, as determined by the method specified in Section 26(d)(vi)(B)(III) of this Chapter.

264.1033(d)(3) (C) A flare shall be used only if the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or if the net heating value of the gas being combusted is 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the method specified in Section 26(d)(v)(B) of this Chapter.

(D) Steam-assisted or nonassisted flare design and operation:

264.1033(d)(4)(i) (I) A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in Section 26(d)(v)(C) of this Chapter, less than 18.3 m/s (60 ft/s), except as provided in Sections 26(d)(iv)(D)(II) and (III) of this Chapter.

...(ii) (II) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in Section 26(d)(v)(C) of this Chapter, equal to or greater than 18.3 m/s (60 ft/s) but less than 122 m/s (400 ft/s) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

...(iii) (III) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in Section 26(d)(v)(C) of this Chapter, less than the velocity, V_{max} , as determined by the method specified in Section 26(d)(v)(D) of this Chapter and less than 122 m/s (400 ft/s) is allowed.

264.1033(d)(5) (E) An air-assisted flare shall be designed and operated with an exit velocity less than the velocity, V_{max} , as determined by the method specified in Section 26(d)(v)(E) of this Chapter.

264.1033(d)(6) (F) A flare used to comply with Section 26(d) of this Chapter shall be steam-assisted, air-assisted, or nonassisted.

(v) Reference method for compliance:

264.1033(e)(1) (A) Reference Method 22 in 40 CFR 60 shall be used to determine the compliance of a flare with the visible emission provisions of this Section. The observation period is 2 hours and shall be used according to Method 22.

264.1033(e)(2) (B) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_i = K \left[\sum_{i=1}^n C_i H_i \right]$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for

determining the volume corresponding to 1 mol is 20°C;

K = Constant, 1.74×10^{-7} (1/ppm) (g mol/scm) (MJ/kcal) where standard temperature for (g mol/scm) is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 in 40 CFR 60 and measured for hydrogen and carbon monoxide by ASTM D 1946-82 (incorporated by reference as specified in Chapter 1, Section 1(g) of these rules and regulations); and

H_i = Net heat of combustion of sample component i, kcal/9 mol at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D 2382-83 (incorporated by reference as specified in Chapter 1, Section 1(g) of these rules and regulations) if published values are not available or cannot be calculated.

264.1033(e)(3) (C) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D in 40 CFR part 60 as appropriate, by the unobstructed (free) cross-sectional area of the flare tip.

264.1033(e)(4) (D) The maximum allowed velocity in m/s, V_{max} , for a flare complying with Section 26(d)(iv)(D)(III) of this Chapter shall be determined by the following equation:

$$\text{Log}_{10}(V_{max}) = (H_i + 28.8) / 31.7$$

where:

28.8 = Constant,

31.7 = Constant,

H_T = The net heating value as determined in Section 26(d)(v)(B) of this Chapter.

264.1033(e)(5) (E) The maximum allowed velocity in m/s, V_{max} , for an air-assisted flare shall be determined by the following equation:

$$V_{max} = 8.706 + 0.7084(H_i)$$

where:

8.706 = Constant,

0.7084 = Constant,

H_T = The net heating value as determined in Section 26(d)(v)(B) of this Chapter.

264.1033(f) (vi) The owner or operator shall monitor and inspect each control device required to comply with Section 26(d) of this Chapter to ensure proper operation and maintenance of the control device by implementing the following requirements:

- 264.1033(f)(1) (A) Install, calibrate, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow from each affected process vent to the control device at least once every hour. The flow indicator sensor shall be installed in the vent stream at the nearest feasible point to the control device inlet but before the point at which the vent streams are combined.
- 264.1033(f)(2) (B) Install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor control device operation as specified below:
- ...(i) (I) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or $\pm 0.5^{\circ}\text{C}$, whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone.
- ...(ii) (II) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two locations and have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or $\pm 0.5^{\circ}\text{C}$, whichever is greater. One temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor shall be installed in the vent stream at the nearest feasible point to the catalyst bed outlet.
- ...(iii) (III) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame.
- ...(iv) (IV) For a boiler or process heater having a design heat input capacity less than 44 MW, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ± 1 percent of the temperature being monitored in $^{\circ}\text{C}$ or $\pm 0.5^{\circ}\text{C}$, whichever is greater. The temperature sensor shall be installed at a location in the furnace downstream of the combustion zone.
- ...(v) (V) For a boiler or process heater having a design heat input capacity greater than or equal to 44 MW, a monitoring device equipped with a continuous recorder to measure a parameter(s) that indicates good combustion operating practices are being used.
- ...(vi) (VI) For a condenser, either:
- ...(vi)(A) (1.) A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the condenser, or
- ...(vi)(B) (2.) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ± 1 percent of the temperature being monitored in degrees Celsius ($^{\circ}\text{C}$) or $\pm 0.5^{\circ}\text{C}$, whichever is greater. The temperature sensor shall be installed at

a location in the exhaust vent stream from the condenser exit (i.e, product side).

- ...(vii) (VII) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, either:
- ...(vii)(A) (1.) A monitoring device equipped with a continuous recorder to measure the concentration level of the organic compounds in the exhaust vent stream from the carbon bed, or
- ...(vii)(B) (2.) A monitoring device equipped with a continuous recorder to measure a parameter that indicates the carbon bed is regenerated on a regular, predetermined time cycle.
- 264.1033(f)(3) (C) Inspect the readings from each monitoring device required by Sections 26(d)(vi)(A) and (B) of this Chapter at least once each operating day to check control device operation and, if necessary, immediately implement the corrective measures necessary to ensure the control device operates in compliance with the requirements of Section 26(d) of this Chapter.
- 264.1033(g) (vii) An owner or operator using a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon at a regular, predetermined time interval that is no longer than the carbon service life established as a requirement of Section 26(f)(ii)(D)(III)(6.) of this Chapter.
- 264.1033(h) (viii) In owner or operator using a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device shall replace the existing carbon in the control device with fresh carbon on a regular basis by using one of the following procedures:
- 264.1033(h)(1) (A) Monitor the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system on a regular schedule, and replace the existing carbon with fresh carbon immediately when carbon breakthrough is indicated. The monitoring frequency shall be daily or at an interval no greater than 20 percent of the time required to consume the total carbon working capacity established as a requirement of Section 26(f)(ii)(D)(III)(7.) of this Chapter, whichever is longer.
- 264.1033(h)(2) (B) Replace the existing carbon with fresh carbon at a regular, predetermined time interval that is less than the design carbon replacement interval established as a requirement of Section 26(f)(ii)(D)(III)(7.) of this Chapter.
- 264.1033(i) (ix) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.
- 264.1033(j) (x) An owner or operator of an affected facility seeking to comply with the provisions of this Chapter by using a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or

carbon adsorption system is required to develop documentation including sufficient information to describe the control device operation and identify the process parameter or parameters that indicate proper operation and maintenance of the control device.

264.1033(k) (xi) A closed-vent system shall meet either of the following design requirements:

264.1033(k)(1) (A) closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in Section 26(e)(ii) of this Chapter ~~{264.1034(b) of this subpart}~~ and by visual inspections, or

264.1033(k)(2) (B) closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

264.1033(l) (xii) The owner or operator shall monitor and inspect each closed-vent system required to comply with this subsection (Section 26(d) of this Chapter) to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:

264.1033(l)(1) (A) Each closed-vent system that is used to comply with Section 26(d)(xi)(A) of this Chapter shall be inspected and monitored in accordance with the following requirements:

..(i) (I) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this subsection (Section 26(d) of this Chapter). The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in Section 26(e)(ii) of this Chapter to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

..(ii) (II) After initial leak detection monitoring required in Section 26(d)(xii)(A)(I) of this Chapter, the owner or operator shall inspect and monitor the closed-vent system as follows:

..(ii)(A) (1.) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two Sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in Section 26(e)(ii) of this Chapter to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a Section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

..(ii)(B) (2.) Closed-vent system components or

connections other than those specified in Section 26(d)(xii)(A)(II)(1.) of this Chapter shall be monitored annually and at other times as requested by the ~~Director Administrator~~ ~~Regional Administrator~~, except as provided for in Section 26(d)(xv) of this Chapter, using the procedures specified in Section 26(e)(ii) of this Chapter to demonstrate that the components or connections operate with no detectable emissions.

...(iii) (III) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of Section 26(d)(xii)(C) of this Chapter.

...(iv) (IV) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in Section 26(f) of this Chapter.

264.1033(l)(2) (B) Each closed-vent system that is used to comply with Section 26(d)(xi)(B) of this Chapter shall be inspected and monitored in accordance with the following requirements:

..(i) (I) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.

..(ii) (II) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this subsection (Section 26(d) of this Chapter). Thereafter, the owner or operator shall perform the inspections at least once every year.

..(iii) (III) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 26(d)(xii)(C) of this Chapter.

...(iv) (IV) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in Section 26(f) of this Chapter.

264.1033(l)(3) (C) The owner or operator shall repair all detected defects as follows:

..(i) (I) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in Section 26(d)(xii)(C)(III) of this Chapter.

..(ii) (II) A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.

..(iii) (III) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate

repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.

- ..(iv) (IV) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in Section 26(f) of this Chapter.
- 264.1033(m) (xiii) Closed-vent systems and control devices used to comply with provisions of Section 26 of this Chapter shall be operated at all times when emissions may be vented to them.
- 264.1033(n) (xiv) The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon:
 - 264.1033(n)(1) (A) Regenerated or reactivated in a thermal treatment unit that meets one of the following:
 - ..(i) (I) The owner or operator of the unit has been issued a final permit under Chapter 1, Section 1(h) through (j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7 and Chapter 11, Section 2 of these rules and regulations which implements the requirements of Section 23 of this Chapter; or
 - ..(ii) (II) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of Sections 26 and 28 of this Chapter or Chapter 11, Sections 28 and 30 of these rules and regulations; or
 - ..(iii) (III) The unit is equipped with and operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR part 61 or 40 CFR part 63.
 - 264.1033(n)(2) (B) Incinerated in a hazardous waste incinerator for which the owner or operator either:
 - ..(i) (I) Has been issued a final permit under Chapter 1, Section 1(h) through (j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7 and Chapter 11, Section 2 of these rules and regulations which implements the requirements of Section ~~26(d)(xv)~~ 14 of this Chapter; or
 - ..(ii) (II) Has designed and operates the incinerator in accordance with the interim status requirements of Chapter 11, Section 16 of these rules and regulations.
 - 264.1033(n)(3) (C) Burned in a boiler or industrial furnace for which the owner or operator either:
 - ..(i) (I) Has been issued a final permit under Chapter 1, Section 1(h) through (j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulations which implements the requirements of Chapter 12, Section 8 of these rules and regulations; or

- ..(ii) (II) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR part 266, subpart H. **See Chapter 12, Section 8(d) and Chapter 7, Section 1(g)(vii).**
- 264.1033(o) (xv) Any components of a closed-vent system that are designated, as described in Section 26(f)(iii)(I) of this Chapter, as unsafe to monitor are exempt from the requirements of Section 26(d)(xii)(A)(II)(2.) of this Chapter if:
- 264.1033(o)(1) (A) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Section 26(d)(xii)(A)(II)(2.) of this Chapter; and
- 264.1033(o)(2) (B) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in Section 26(d)(xii)(A)(II)(2.) of this Chapter as frequently as practicable during safe-to-monitor times.
- 264.1034 (e) TEST METHODS AND PROCEDURES.
- 264.1034(a) (i) Each owner or operator subject to the provisions of Section 26 of this Chapter shall comply with the test methods and procedures requirements provided in Section 26(e) of this Chapter.
- 264.1034(b) (ii) When a closed-vent system is tested for compliance with no detectable emissions, as required in Section 26(d)(xii) of this Chapter, the test shall comply with the following requirements:
- 264.1034(b)(1) (A) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.
- 264.1034(b)(2) (B) The detection instrument shall meet the performance criteria of Reference Method 21.
- 264.1034(b)(3) (C) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.
- 264.1034(b)(4) (D) Calibration gases shall be:
- ... (i) (I) Zero air (less than 10 ppm of hydrocarbon in air).
- ... (ii) (II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.
- 264.1034(b)(5) (E) The background level shall be determined as set forth in Reference Method 21.
- 264.1034(b)(6) (F) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

264.1034(b)(7) (G) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

264.1034(c) (iii) Performance tests to determine compliance with Section 26(c)(i) of this Chapter and with the total organic compound concentration limit of Section 26(d)(iii) of this Chapter shall comply with the following:

264.1034(c)(1) (A) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices shall be conducted and data reduced in accordance with the following reference methods and calculation procedures:

...(i) (I) Method 2 in 40 CFR part 60 for velocity and volumetric flow rate.

...(ii) (II) Method 18 in 40 CFR part 60 for organic content.

...(iii) (III) Each performance test shall consist of three separate runs; each run conducted for at least 1 hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs shall apply. The average shall be computed on a time-weighted basis.

...(iv) (IV) Total organic mass flow rates shall be determined by the following equation:

$$E_h = Q_{sd} \left\{ \sum_{i=1}^n C_i MW_i \right\} [0.0416] [10^{-6}]$$

where:

E_h = Total organic mass flow rate, kg/h;

Q_{sd} = Volumetric flow rate of gases entering or exiting control device, as determined by Method 2, dscm/h;

n = Number of organic compounds in the vent gas;

C_i = Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Method 18;

MW_i = Molecular weight of organic compound i in the vent gas, kg/kg-mol;

0.0416 = Conversion factor for molar volume, kg-mol/m³ (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm, ppm^{-1} .

...(v) (V) The annual total organic emission rate shall be determined by the following equation:

$$E_A = (E_h)(H)$$

where:

E_A = Total organic mass emission rate, kg/y;

E_h = Total organic mass flow rate for the process vent, kg/h;

H = Total annual hours of operations for the affected unit, h.

...(vi) (VI) Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates (E_h as determined in Section 26(e)(iii)(A)(IV) of this Chapter) and by summing the annual total organic mass emission rates (E_A , as determined in Section 26(e)(iii)(A)(V) of this Chapter) for all affected process vents at the facility.

264.1034(c)(2) (B) The owner or operator shall record such process information as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test.

264.1034(c)(3) (C) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

...(i) (I) Sampling ports adequate for the test methods specified in Section 26(e)(iii)(A) of this Chapter.

...(ii) (II) Safe sampling platform(s).

...(iii) (III) Safe access to sampling platform(s).

...(iv) (IV) Utilities for sampling and testing equipment.

264.1034(c)(4) (D) For the purpose of making compliance determinations, the time-weighted average of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Director approval, be determined using the average of the results of the two other runs.

264.1034(d) (iv) To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of this Section ~~subject~~, the owner or

operator must make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following two methods:

- 264.1034(d)(1) (A) Direct measurement of the organic concentration of the waste using the following procedures:
- ...(i) (I) The owner or operator must take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.
 - ...(ii) (II) For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.
 - ...(iii) (III) Each sample shall be analyzed and the total organic concentration of the sample shall be computed using Method 9060 or 8260 of SW-846 (incorporated by reference under Chapter 1, Section 1(g) of these rules and regulations).
 - ...(iv) (IV) The arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each waste stream processed and the mean organic concentration of each waste stream managed in the unit.
- 264.1034(d)(2) (B) Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a waste stream having a total organic content less than 10 ppmw, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.
- 264.1034(e) (v) The determination that distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted, annual average total organic concentrations less than 10 ppmw shall be made as follows:
- 264.1034(e)(1) (A) By the effective date that the facility

becomes subject to the provisions of Section 26 of this Chapter or by the date when the waste is first managed in a waste management unit, whichever is later, and

- 264.1034(e)(2) (B) For continuously generated waste, annually, or
- 264.1034(e)(3) (C) Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.
- 264.1034(f) (vi) When an owner or operator and the Director ~~Administrator~~ do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, the procedures in Method 8260 of SW-846 (incorporated by reference under Chapter 1, Section 1(g) of these rules and regulations) may be used to resolve the dispute.
- 264.1035 (f) RECORDKEEPING REQUIREMENTS.
- 264.1035(a)(1) (i) Each owner or operator subject to the provisions of Section 26 of this Chapter shall comply with:
- 264.1035(a)(1) (A) The recordkeeping requirements of Section 26(f) of this Chapter.
- 264.1035(a)(2) (B) An owner or operator of more than one hazardous waste management unit subject to the provisions of Section 26 of this Chapter may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.
- 264.1035(b) (ii) Owners and operators must record the following information in the facility operating record:
- 264.1035(b)(1) (A) For facilities that comply with the provisions of Section 26(d)(i)(B) of this Chapter, an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule must also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule must be in the facility operating record by the effective date that the facility becomes subject to the provisions of this Section.
- 264.1035(b)(2) (B) Up-to-date documentation of compliance with the process vent standards in Section 26(c) of this Chapter, including:
- ...(i) (I) Information and data identifying all affected process vents, annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and for the overall facility (i.e., the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (e.g., identify the hazardous waste management units on a facility plot plan).

...(ii) (II) Information and data supporting determinations of vent emissions and emission reductions achieved by add-on control devices based on engineering calculations or source tests. For the purpose of determining compliance, determinations of vent emissions and emission reductions must be made using operating parameter values (e.g., temperatures, flow rates, or vent stream organic compounds and concentrations) that represent the conditions that result in maximum organic emissions, such as when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. If the owner or operator takes any action (e.g., managing a waste of different composition or increasing operating hours of affected waste management units) that would result in an increase in total organic emissions from affected process vents at the facility, then a new determination is required.

264.1035(b)(3) (C) Where an owner or operator chooses to use test data to determine the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan. The test plan must include:

...(i) (I) A description of how it is determined that the planned test is going to be conducted when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. This shall include the estimated or design flow rate and organic content of each vent stream and define the acceptable operating ranges of key process and control device parameters during the test program.

...(ii) (II) A detailed engineering description of the closed-vent system and control device including:

...(ii)(A) (1.) Manufacturer's name and model number of control device.

...(ii)(B) (2.) Type of control device.

...(ii)(C) (3.) Dimensions of the control device.

...(ii)(D) (4.) Capacity.

...(ii)(E) (5.) Construction materials.

...(iii) (III) A detailed description of sampling and monitoring procedures, including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis.

264.1035(b)(4) (D) Documentation of compliance with Section 26(d) of this Chapter shall include the following information:

...(i) (I) A list of all information references and sources used in preparing the documentation.

...(ii) (II) Records, including the dates, of each compliance test required by Section 26(d)(xi) of this Chapter.

...(iii) (III) If engineering calculations are used, a design analysis, specifications, drawings, schematics, and piping

and instrumentation diagrams based on the appropriate Sections of "APTI Course 415: Control of Gaseous Emissions" (incorporated by reference as specified in Chapter 1, Section 1(g) of these rules and regulations) or other engineering texts acceptable to the Director that present basic control device design information. Documentation provided by the control device manufacturer or vendor that describes the control device design in accordance with Sections 26(f)(ii)(D)(III)(1.) through (7.) of this Chapter may be used to comply with this requirement. The design analysis shall address the vent stream characteristics and control device operation parameters as specified below.

- ...(iii)(A) (1.) For a thermal vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperature in the combustion zone and the combustion zone residence time.
- ...(iii)(B) (2.) For a catalytic vapor incinerator, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average temperatures across the catalyst bed inlet and outlet.
- ...(iii)(C) (3.) For a boiler or process heater, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also establish the design minimum and average flame zone temperatures, combustion zone residence time, and description of method and location where the vent stream is introduced into the combustion zone.
- ...(iii)(D) (4.) For a flare, the design analysis shall consider the vent stream composition, constituent concentrations, and flow rate. The design analysis shall also consider the requirements specified in Section 26(d)(iv) of this Chapter.
- ...(iii)(E) (5.) For a condenser, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and design average temperatures of the coolant fluid at the condenser inlet and outlet.
- ...(iii)(F) (6.) For a carbon adsorption system such as a fixed-bed adsorber that regenerates the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon.

- ...(iii)(G) (7.) For a carbon adsorption system such as a carbon canister that does not regenerate the carbon bed directly onsite in the control device, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design outlet organic concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.
- ...(iv) (IV) A statement signed and dated by the owner or operator certifying that the operating parameters used in the design analysis reasonably represent the conditions that exist when the hazardous waste management unit is or would be operating at the highest load or capacity level reasonably expected to occur.
- ...(v) (V) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of 95 percent or greater unless the total organic concentration limit of Section 26(c)(i) of this Chapter is achieved at an efficiency less than 95 percent or the total organic emission limits of Section 26(c)(i) of this Chapter for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than 95 weight percent. A statement provided by the control device manufacturer or vendor certifying that the control equipment meets the design specifications may be used to comply with this requirement.
- ...(vi) (VI) If performance tests are used to demonstrate compliance, all test results.
- 264.1035(c) (iii) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of this Chapter shall be recorded and kept up-to-date in the facility operating record. The information shall include:
- 264.1035(c)(1) (A) Description and date of each modification that is made to the closed-vent system or control device design.
- 264.1035(c)(2) (B) Identification of operating parameter, description of monitoring device, and diagram of monitoring sensor location or locations used to comply with Sections 26(d)(vi)(A) and (B) of this Chapter.
- 264.1035(c)(3) (C) Monitoring, operating, and inspection information required by Sections 26(d)(vi) through (xi) of this Chapter.
- 264.1035(c)(4) (D) Date, time, and duration of each period that occurs while the control device is operating when any monitored parameter exceeds the value established in the control device design analysis as specified below:
- ...(i) (I) For a thermal vapor incinerator designed to operate with a minimum residence time of 0.50 second at a minimum temperature of 760°C, period when the combustion

temperature is below 760°C.

- ...(ii) (II) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of 95 weight percent or greater, period when the combustion zone temperature is more than 28°C below the design average combustion zone temperature established as a requirement of Section 26(f)(ii)(D)(III)(1.) of this Chapter.
- ...(iii) (III) For a catalytic vapor incinerator, period when:
 - ...(iii)(A) (1.) Temperature of the vent stream at the catalyst bed inlet is more than 28°C below the average temperature of the inlet vent stream established as a requirement of Section 26(f)(ii)(D)(III)(2.) of this Chapter, or
 - ...(iii)(B) (2.) Temperature difference across the catalyst bed is less than 80 percent of the design average temperature difference established as a requirement of Section 26(f)(ii)(D)(III)(2.) of this Chapter.
- ...(iv) (IV) For a boiler or process heater, period when:
 - ...(iv)(A) (1.) Flame zone temperature is more than 28°C below the design average flame zone temperature established as a requirement of Section 26(f)(ii)(D)(III)(3.) of this Chapter, or
 - ...(iv)(B) (2.) Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of Section 26(f)(ii)(D)(III)(3.) of this Chapter.
- ...(v) (V) For a flare, period when the pilot flame is not ignited.
- ...(vi) (VI) For a condenser that complies with Section 26(d)(vi)(B)(VI)(1.) of this Chapter, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than 20 percent greater than the design outlet organic compound concentration level established as a requirement of Section 26(f)(ii)(D)(III)(5.) of this Chapter.
- ...(vii) (VII) For a condenser that complies with Section 26(d)(vi)(B)(VI)(2.) of this Chapter, period when:
 - ...(vii)(A) (1.) Temperature of the exhaust vent stream from the condenser is more than 6°C above the design average exhaust vent stream temperature established as a requirement of Section 26(f)(ii)(D)(III)(5.) of this Chapter; or
 - ...(vii)(B) (2.) Temperature of the coolant fluid exiting the condenser is more than 6°C above the design average coolant fluid temperature at the condenser outlet established as a requirement of Section 26(f)(ii)(D)(III)(5.) of this Chapter.

- ...(viii) (VIII) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with Section 26(d)(vi)(B)(VII)(1.) of this Chapter, period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than 20 percent greater than the design exhaust vent stream organic compound concentration level established as a requirement of Section 26(f)(ii)(D)(III)(6.) of this Chapter.
- ...(ix) (IX) For a carbon adsorption system such as a fixed-bed carbon adsorber that regenerates the carbon bed directly onsite in the control device and complies with Section 26(d)(vi)(B)(VII)(2.) of this Chapter, period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of Section 26(f)(ii)(D)(III)(6.) of this Chapter.
- 264.1035(c)(5) (E) Explanation for each period recorded under Section 26(f)(iii)(D) of this Chapter of the cause for control device operating parameter exceeding the design value and the measures implemented to correct the control device operation.
- 264.1035(c)(6) (F) For a carbon adsorption system operated subject to requirements specified in Section 26(d)(vii) or Section 26(d)(viii)(B) of this Chapter, date when existing carbon in the control device is replaced with fresh carbon.
- 264.1035(c)(7) (G) For a carbon adsorption system operated subject to requirements specified in Section 26(d)(viii)(A) of this Chapter, a log that records:
- ...(i) (I) Date and time when control device is monitored for carbon breakthrough and the monitoring device reading.
- ...(ii) (II) Date when existing carbon in the control device is replaced with fresh carbon.
- 264.1035(c)(8) (H) Date of each control device startup and shutdown.
- 264.1035(c)(9) (I) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to Section 26(d)(xv) of this Chapter shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of Section 26(d)(xv) of this Chapter, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.
- 264.1035(c)(10) (J) When each leak is detected as specified in Section 26(d)(xii) of this Chapter, the following information shall be recorded:
- ...(i) (I) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.

- ..(ii) (II) The date the leak was detected and the date of first attempt to repair the leak.
- ..(iii) (III) The date of successful repair of the leak.
- ..(iv) (IV) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.
- ..(v) (V) 'Repair delayed' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
- ..(v)(A) (1.) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant Sections of the written procedure.
- ..(v)(B) (2.) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.
- 264.1035(d) (iv) Records of the monitoring, operating, and inspection information required by Sections 26(f)(iii)(C) - (J) of this Chapter shall be maintained by the owner or operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record.
- 264.1035(e) (v) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the Director will specify the appropriate recordkeeping requirements.
- 264.1035(f) (vi) Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in Section 26(c) of this Chapter including supporting documentation as required by Section 26(e)(iv)(B) of this Chapter when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used, shall be recorded in a log that is kept in the facility operating record.
- 264.1036 (g) REPORTING REQUIREMENTS.
- 264.1036(a) (i) A semiannual report shall be submitted by owners and operators subject to the requirements of Section 26 of this Chapter to the Director by dates specified by the Director. The report shall include the following information:
 - 264.1036(a)(1) (A) The Environmental Protection Agency identification number, name, and address of the facility.
 - 264.1036(a)(2) (B) For each month during the semiannual reporting period, dates when the control device exceeded or operated outside of the design specifications as defined in Section 26(f)(iii)(D) of this Chapter and as indicated by the control device monitoring required by Section 26(d)(vi) of this Chapter and such

exceedances were not corrected within 24 hours, or that a flare operated with visible emissions as defined in Section 26(d)(iv) of this Chapter and as determined by Method 22 monitoring, the duration and cause of each exceedance or visible emissions, and any corrective measures taken.

- 264.1036(b) (ii) If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in Section 26(f)(iii)(D) of this Chapter for more than 24 hours or a flare does not operate with visible emissions as defined in Section 26(d)(iv) of this Chapter, a report to the Director is not required.
- 264.1037-.1049 (h) - (t) RESERVED.
- 264/Subpart BB Section 27. AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS
- 264.1050 (a) APPLICABILITY.
- 264.1050(a) (i) The regulations in this Section apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in Section 1(a) of this Chapter).
- 264.1050(b) (ii) Except as provided in Section 27(o)(xi) of this Chapter, this Section applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight that are managed in one of the following:
- 264.1050(b)(1) (A) Units that are subject to the permitting requirements of Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Sections ~~2 and 3~~ 2 and 3 of these rules and regulations, or
- 264.1050(b)(2) (B) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of Chapter 8, Section 3(e)(i) of these rules and regulations (i.e., a hazardous waste recycling unit that is not a '90-day' tank or container) and that is located at a hazardous waste management facility ~~ies~~ otherwise subject to the permitting requirements of Chapter 1, Sections 1(h)-1(j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulations, or
- 264.1050(b)(3) (C) A unit that is exempt from permitting under the provisions of Chapter 8, Section 3(e)(i) of these rules and regulations (i.e., a '90-day' tank or container) and is not a recycling unit under the provisions of Chapter 2, Section 1(f) of these rules and regulations.
- 264.1050(c) (iii) For the owner or operator of a facility subject to this Section and who received a final permit under W.S. 35-11-503(d) and/or RCRA Section 3005 prior to December 6, 1996, the requirements of this Section shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Chapter 3, Section 1(l) of these rules and regulations or reviewed under Chapter 4, Section 2(a)(iv) of these rules and regulations. Until such date when the owner or operator receives a final permit incorporating the requirements of this Section, the owner or

operator is subject to the requirements of Chapter 11, Section 29 of these rules and regulations.

- 264.1050(d) (iv) Each piece of equipment to which this Section applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.
- 264.1050(e) (v) Equipment that is in vacuum service is excluded from the requirements of Sections 27(c) through 27(k) of this Chapter if it is identified as required in Section 27(o)(vii)(E) of this Chapter.
- 264.1050(e) (vi) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of Section 27(c) through Section 27(k) of this Chapter ~~[" 264.1052 through 264.1060 of this subpart]~~ if it is identified, as required in Section 27(o)(vii)(F) of this Chapter ~~[" 264.1064(g)(6) of this subpart]~~.
- 264.1051 (b) DEFINITIONS. As used in Section 27 of this Chapter, all terms shall have the meaning given them in Chapter 1, Section 1(f)(i) of these rules and regulations.
- 264.1052 (c) STANDARDS: PUMPS IN LIGHT LIQUID SERVICE.
- 264.1052(a)(1) (i) Each pump in light liquid service shall be:
- 264.1052(a)(1) (A) Monitored monthly to detect leaks by the methods specified in Section 27(n)(ii) of this Chapter, except as provided in Sections 27(c)(iv), 27(c)(v), and 27(c)(vi) of this Chapter.
- 264.1052(a)(2) (B) Checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
- 264.1052(b)(1) (ii) A leak is detected if:
- 264.1052(b)(1) (A) An instrument reading of 10,000 ppm or greater is measured.
- 264.1052(b)(2) (B) There are indications of liquids dripping from the pump seal.
- 264.1052(c)(1) (iii) When a leak is detected:
- 264.1052(c)(1) (A) It shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Section 27(j) of this Chapter.
- 264.1052(c)(2) (B) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.
- 264.1052(d) (iv) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of Section 27(c)(i) of this Chapter, *provided* the following requirements are met:

- 264.1052(d)(1) (A) Each dual mechanical seal system must be:
- ... (i) (I) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure, or
 - ... (ii) (II) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of Section 27(k) of this Chapter, or
 - ... (iii) (III) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere.
- 264.1052(d)(2) (B) The barrier fluid system must not be a hazardous waste with organic concentrations 10 percent or greater by weight.
- 264.1052(d)(3) (C) Each barrier fluid system must be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.
- 264.1052(d)(4) (D) Each pump must be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.
- (E) Sensor monitoring:
- 264.1052(d)(5)(i) (I) Each sensor as described in Section 27(c)(iv)(C) of this Chapter must be checked daily or be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly.
 - ... (ii) (II) The owner or operator must determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- (F) Leaks:
- 264.1052(d)(6)(i) (I) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in Section 27(c)(iv)(E)(II) of this Chapter a leak is detected.
 - ... (ii) (II) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Section 27(j) of this Chapter.
 - ... (iii) (III) A first attempt at repair (e.g., relapping the seal) shall be made no later than 5 calendar days after each leak is detected.
- 264.1052(e) (v) Any pump that is designated, as described in Section 27(o)(vii)(B) of this Chapter, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above

background, is exempt from the requirements of Sections 27(c)(i), 27(c)(iii), and 27(c)(iv) of this Chapter if the pump meets the following requirements:

- 264.1052(e)(1) (A) Must have no externally actuated shaft penetrating the pump housing.
- 264.1052(e)(2) (B) Must operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in Section 27(n)(iii) of this Chapter.
- 264.1052(e)(3) (C) Must be tested for compliance with Section 27(c)(v)(B) of this Chapter initially upon designation, annually, and at other times as requested by the Director.
- 264.1052(f) (vi) If any pump is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of Section 27(k) of this Chapter, it is exempt from the requirements of Sections 27(c)(i) through 27(c)(v) of this Chapter.
- 264.1053 (d) STANDARDS: COMPRESSORS.
- 264.1053(a) (i) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of total organic emissions to the atmosphere, except as provided in Sections 27(d)(viii) and 27(d)(ix) of this Chapter.
- 264.1053(b) (ii) Each compressor seal system as required in Section 27(d)(i) of this Chapter shall be:
 - 264.1053(b)(1) (A) Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure, or
 - 264.1053(b)(2) (B) Equipped with a barrier fluid system that is connected by a closed-vent system to a control device that complies with the requirements of Section 27(k) of this Chapter, or
 - 264.1053(b)(3) (C) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.
- 264.1053(c) (iii) The barrier fluid must not be a hazardous waste with organic concentrations 10 percent or greater by weight.
- 264.1053(d) (iv) Each barrier fluid system as described in Sections 27(d)(i) through 27(d)(iii) of this Chapter shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
 - (v) Sensor monitoring:
 - 264.1053(e)(1) (A) Each sensor as required in Section 27(d)(iv) of this Chapter shall be checked daily or shall be equipped with an audible alarm that must be checked monthly to ensure that it is functioning properly unless the compressor is located within the boundary of an unmanned plant site, in which case the sensor must be checked daily.

- 264.1053(e)(2) (B) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- 264.1053(f) (vi) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under Section 27(d)(v)(B) of this Chapter, a leak is detected.
- 264.1053(g)(1) (vii) When a leak is detected:
- 264.1053(g)(1) (A) It shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in Section 27(j) of this Chapter.
- 264.1053(g)(2) (B) A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected.
- 264.1053(h) (viii) A compressor is exempt from the requirements of Sections 27(d)(i) and 27(d)(ii) of this Chapter if it is equipped with a closed-vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of Section 27(k) of this Chapter, except as provided in Section 27(d)(ix) of this Chapter.
- 264.1053(i) (ix) Any compressor that is designated, as described in Section 27(o)(vii)(B) of this Chapter, for no detectable emissions as indicated by an instrument reading of less than 500 ppm above background is exempt from the requirements of Sections 27(d)(i) through 27(d)(viii) of this Chapter if the compressor:
- 264.1053(i)(1) (A) Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in Section 27(n)(iii) of this Chapter.
- 264.1053(i)(2) (B) Is tested for compliance with Section 27(d)(ix)(A) of this Chapter initially upon designation, annually, and at other times as requested by the Director.
- 264.1054 (e) STANDARDS: PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE.
- 264.1054(a) (i) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in Section 27(n)(iii) of this Chapter.
- 264.1054(b)(1) (ii) After each pressure release:
- (A) The pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in Section 27(j) of this Chapter.

- 264.1054(b)(2) (B) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in Section 27(n)(iii) of this Chapter.
- 264.1054(c) (iii) Any pressure relief device that is equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in Section 27(k) of this Chapter is exempt from the requirements of Sections 27(e)(i) and 27(e)(ii) of this Chapter.
- 264.1055 (f) STANDARDS: SAMPLING CONNECTION SYSTEMS.
- 264.1055(a) (i) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.
- 264.1055(b) (ii) Each closed-purge, closed-loop, or closed-vent system as required in Section 27(f)(i) of this Chapter shall meet one of the following requirements:
- 264.1055(b)(1) (A) Return the purged process fluid directly to the process line;
- 264.1055(b)(2) (B) Collect and recycle the purged process fluid; or
- 264.1055(b)(3) (C) Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of Section 28(e) through Section 28(g) of this Chapter or a control device that complies with the requirements of Section 27(k)~~(o)~~ of this Chapter.
- 264.1055(c) (iii) In-situ sampling systems and sampling systems without purges are exempt from the requirements of Section 27(f)(i) and (ii) of this Chapter.
- 264.1056 (g) STANDARDS: OPEN-ENDED VALVES OR LINES.
- 264.1056(a)(1) (i) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.
- 264.1056(a)(2) (A) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring hazardous waste stream flow through the open-ended valve or line.
- 264.1056(b) (ii) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the hazardous waste stream end is closed before the second valve is closed.
- 264.1056(c) (iii) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that

require venting the line between the block valves but shall comply with Section 27(g)(i) of this Chapter of this at all other times.

- 264.1057 (h) STANDARDS: VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE.
- 264.1057(a) (i) Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in Section 27(n)(ii) of this Chapter and shall comply with Sections 27(h)(ii) through 27(h)(v) of this Chapter, except as provided in Sections 27(h)(vi), 27(h)(vii), 27(h)(viii), 27(l), and 27(m) of this Chapter.
- 264.1057(b) (ii) A leak is detected if:
- 264.1057(b) (A) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (iii) Valve monitoring:
- 264.1057(c)(1) (A) Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.
- (B) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for two successive months,
- 264.1057(d)(1) (iv) When a leak is detected:
- 264.1057(d)(1) (A) It shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in Section 27(j) of this Chapter.
- 264.1057(d)(2) (B) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- 264.1057(e) (v) First attempts at repair include, but are not limited to, the following best practices where practicable:
- 264.1057(e)(1) (A) Tightening of bonnet bolts.
- 264.1057(e)(2) (B) Replacement of bonnet bolts.
- 264.1057(e)(3) (C) Tightening of packing gland nuts.
- 264.1057(e)(4) (D) Injection of lubricant into lubricated packing.
- 264.1057(f) (vi) Any valve that is designated, as described in Section 27(o)(vii)(B) of this Chapter, for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Section 27(h)(i) of this Chapter if the valve:
- 264.1057(f)(1) (A) Has no external actuating mechanism in contact with the hazardous waste stream.
- 264.1057(f)(2) (B) Is operated with emissions less than 500 ppm

above background as determined by the method specified in Section 27(n)(iii) of this Chapter.

- 264.1057(f)(3) (C) Is tested for compliance with Section 27(h)(vi)(B) of this Chapter initially upon designation, annually, and at other times as requested by the Director.
- 264.1057(g) (vii) Any valve that is designated, as described in Section 27(o)(viii)(A) of this Chapter, as an unsafe-to-monitor valve is exempt from the requirements of Section 27(h)(i) of this Chapter if:
- 264.1057(g)(1) (A) The owner or operator of the valve determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Section 27(h)(i) of this Chapter.
- 264.1057(g)(2) (B) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.
- 264.1057(h) (viii) Any valve that is designated, as described in Section 27(o)(viii)(B) of this Chapter, as a difficult-to-monitor valve is exempt from the requirements of Section 27(h)(i) of this Chapter if:
- 264.1057(h)(1) (A) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.
- 264.1057(h)(2) (B) The hazardous waste management unit within which the valve is located was in operation before June 21, 1990.
- 264.1057(h)(3) (C) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.
- 264.1058 (i) STANDARDS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS.
- 264.1058(a) (i) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in Section 27(n)(ii) of this Chapter if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.
- 264.1058(b) (ii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- 264.1058(c)(1) (iii) When a leak is detected:
- (A) It shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected. except as provided in Section 27(j) of this Chapter.
- 264.1058(c)(2) (B) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

- 264.1058(d) (iv) First attempts at repair include, but are not limited to, the best practices described under Section 27(h)(v) of this Chapter.
- 264.1058(e) (v) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of Section 27(i)(i) of this Chapter and from the recordkeeping requirements of Section 27(o) of this Chapter.
- 264.1059 (j) STANDARDS: DELAY OF REPAIR.
- 264.1059(a) (i) Delay of repair of equipment for which leaks have been detected will be allowed if the repair is technically infeasible without a hazardous waste management unit shutdown. In such a case, repair of this equipment shall occur before the end of the next hazardous waste management unit shutdown.
- 264.1059(b) (ii) Delay of repair of equipment for which leaks have been detected will be allowed for equipment that is isolated from the hazardous waste management unit and that does not continue to contain or contact hazardous waste with organic concentrations at least 10 percent by weight.
- 264.1059(c) (iii) Delay of repair for valves will be allowed if:
- 264.1059(c)(1) (A) The owner or operator determines that emissions of purged material resulting from immediate repair are greater than the emissions likely to result from delay of repair.
- 264.1059(c)(2) (B) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with Section 27(k) of this Chapter.
- 264.1059(d) (iv) Delay of repair for pumps will be allowed if:
- 264.1059(d)(1) (A) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system.
- 264.1059(d)(2) (B) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.
- 264.1059(d)(3) (C) Delay of repair beyond a hazardous waste management unit shutdown will be allowed for a valve if valve assembly replacement is necessary during the hazardous waste management unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next hazardous waste management unit shutdown will not be allowed unless the next hazardous waste management unit shutdown occurs sooner than 6 months after the first hazardous waste management unit shutdown.
- 264.1060 (k) STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES.
- 264.1060(a) (i) Owners and operators of closed-vent systems and control devices subject to this Section shall comply with the provisions of Section 26(d) of this Chapter.

264.1060(b)(1) (ii) (A) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this Section on the effective date that the facility becomes subject to the provisions of ~~the this~~ this Section must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to ~~the this~~ this Section ~~(subpart)~~ for installation and startup.

264.1060(b)(2) (B) Any unit that begins operation after December 21, 1990, and is subject to the provisions of the Section when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation~~s~~ schedule does not apply.

264.1060(b)(3) (C) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this Section shall comply with all requirements of this Section as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this Section can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this Section. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

264.1060(b)(4) (D) Owners and operators of facilities and units that become newly subject to the requirements of this Section after December 8, 1997, due to an action other than those described in Section 27(k)(ii)(C) of this Chapter must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this Section; the 30-month implementation schedule does not apply).

264.1061 (1) ALTERNATIVE STANDARDS FOR VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE: PERCENTAGE OF VALVES ALLOWED TO LEAK.

264.1061(a) (i) An owner or operator subject to the requirements of Section 27(h) of this Chapter may elect to have all valves within a hazardous waste management unit comply with an alternative standard that allows no greater than 2 percent of the valves to leak.

264.1061(b) (ii) The following requirements shall be met if an owner or operator decides to comply with the alternative standard of allowing 2 percent of valves to leak:

264.1061(b)(1) (A) An owner or operator must notify the Director that the owner or operator has elected to comply with the

requirements of Section 27(1) of this Chapter.

264.1061(b)(2) (B) A performance test as specified in Section 27(1)(iii) of this Chapter shall be conducted initially upon designation, annually, and at other times requested by the Director.

264.1061(b)(3) (C) If a valve leak is detected, it shall be repaired in accordance with Section 27(h)(iv) and 27(h)(v) of this Chapter.

264.1061(c) (iii) Performance tests shall be conducted in the following manner:

264.1061(c)(1) (A) All valves subject to the requirements in Section 27(h) of this Chapter within the hazardous waste management unit shall be monitored within 1 week by the methods specified in Section 27(n)(ii) of this Chapter.

264.1061(c)(2) (B) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

264.1061(c)(3) (C) The leak percentage shall be determined by dividing the number of valves subject to the requirements in Section 27(h) of this Chapter for which leaks are detected by the total number of valves subject to the requirements in Section 27(h) of this Chapter within the hazardous waste management unit.

264.1061(d) (iv) If an owner or operator decides to comply with Section 27(1) of this Chapter no longer, the owner or operator must notify the Director in writing that the work practice standard described in Sections 27(h)(i) through 27(h)(v) of this Chapter will be followed.

264.1062 (m) ALTERNATIVE STANDARDS FOR VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE: SKIP PERIOD LEAK DETECTION AND REPAIR.

(i) Alternative work practices:

264.1062(a)(1) (A) An owner or operator subject to the requirements of Section 27(h) of this Chapter may elect for all valves within a hazardous waste management unit to comply with one of the alternative work practices specified in Sections 27(m)(ii)(B) and 27(m)(ii)(C) of this Chapter.

264.1062(a)(2) (B) An owner or operator must notify the Director before implementing one of the alternative work practices.

(ii) Compliance with valve requirements:

264.1062(b)(1) (A) An owner or operator shall comply with the requirements for valves, as described in Section 27(h) of this Chapter, except as described in Sections 27(m)(ii)(B) and 27(m)(ii)(C) of this Chapter.

264.1062(b)(2) (B) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves subject to the requirements in

Section 27(h) of this Chapter.

264.1062(b)(3) (C) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip three of the quarterly leak detection periods i.e., monitor for leaks once every year) for the valves subject to the requirements in Section 27(h) of this Chapter.

264.1062(b)(4) (D) If the percentage of valves leaking is greater than 2 percent, the owner or operator shall monitor monthly in compliance with the requirements in Section 27(h) of this Chapter, but may again elect to use Section 27(m) of this Chapter after meeting the requirements of Section 27(h)(iii)(A) of this Chapter.

264.1063 (n) TEST METHODS AND PROCEDURES.

264.1063(a) (i) Each owner or operator subject to the provisions of Section 27 of this Chapter shall comply with the test methods and procedures requirements provided in Section 27(n) of this Chapter.

264.1063(b) (ii) Leak detection monitoring, as required in Sections 27(c) through 27(m) of this Chapter, shall comply with the following requirements:

264.1063(b)(1) (A) Monitoring shall comply with Reference Method 21 in 40 CFR part 60.

264.1063(b)(2) (B) The detection instrument shall meet the performance criteria of Reference Method 21.

264.1063(b)(3) (C) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

264.1063(b)(4) (D) Calibration gases shall be:

...(i) (I) Zero air (less than 10 ppm of hydrocarbon in air).

...(ii) (II) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

264.1063(b)(5) (E) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

264.1063(c) (iii) When equipment is tested for compliance with no detectable emissions. as required in Sections 27(c)(v), 27(d)(ix), 27(e), and 27(h)(vi) of this Chapter, the test shall comply with the following requirements:

264.1063(c)(1) (A) The requirements of Sections 27(n)(ii)(A) through 27(n)(ii)(D) of this Chapter shall apply.

264.1063(c)(2) (B) The background level shall be determined as set forth in Reference Method 21.

- 264.1063(c)(3) (C) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.
- 264.1063(c)(4) (D) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.
- 264.1063(d) (iv) In accordance with the waste analysis plan required by Section 2(d)(ii) of this Chapter, an owner or operator of a facility must determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds 10 percent by weight using the following:
- 264.1063(d)(1) (A) Methods described in ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85 (incorporated by reference under Chapter 1, Section 1(g) of these rules and regulations);
- 264.1063(d)(2) (B) Method 9060 or 8260 of SW-846 (incorporated by reference under Chapter 1, Section 1(g)(i)(L) of these rules and regulations); or
- 264.1063(d)(3) (C) Application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced. Documentation of a waste determination by knowledge is required. Examples of documentation that shall be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to have a total organic content less than 10 percent, or prior speciation analysis results on the same waste stream where it can also be documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.
- 264.1063(e) (v) If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the determination can be revised only after following the procedures in Section 27(n)(iv)(A) or Section 27(n)(iv)(B) of this Chapter.
- 264.1063(f) (vi) When an owner or operator and the Director do not agree on whether a piece of equipment contains or contacts a hazardous waste with organic concentrations at least 10 percent by weight, the procedures in Section 27(n)(iv)(A) or Section 27(n)(iv)(B) of this Chapter can be used to resolve the dispute.
- 264.1063(g) (vii) Samples used in determining the percent organic content shall be representative of the highest total organic content hazardous waste that is expected to be contained in or contact the equipment.
- 264.1063(h) (viii) To determine if pumps or valves are in light liquid service, the vapor pressures of constituents may be obtained from standard reference texts or may be determined by ASTM D-2879-86 (incorporated by reference under Chapter 1, Section 1(g) of these

rules and regulations).

264.1063(i) (ix) Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with the procedures of Sections 26(e)(iii)(A) through 26(e)(iii)(D) of this Chapter.

264.1064 (o) RECORDKEEPING REQUIREMENTS.

264.1064(a)(1) (i) Each owner or operator subject to the provisions of this Section shall comply with the recordkeeping requirements of Section 27(o) of this Chapter.

264.1064(a)(2) (A) An owner or operator of more than one hazardous waste management unit subject to the provisions of this Section may comply with the recordkeeping requirements for these hazardous waste management units in one recordkeeping system if the system identifies each record by each hazardous waste management unit.

264.1064(b) (ii) Owners and operators must record the following information in the facility operating record:

264.1064(b)(1) (A) For each piece of equipment to which Section 27 of this Chapter applies:

...(i) (I) Equipment identification number and hazardous waste management unit identification.

...(ii) (II) Approximate locations within the facility (e.g., identify the hazardous waste management unit on a facility plot plan).

...(iii) (III) Type of equipment (e.g., a pump or pipeline valve).

...(iv) (IV) Percent-by-weight total organics in the hazardous waste stream at the equipment.

...(v) (V) Hazardous waste state at the equipment (e.g., gas/vapor or liquid).

...(vi) (VI) Method of compliance with the standard (e.g., "monthly leak detection and repair" or "equipped with dual mechanical seals").

264.1064(b)(2) (B) For facilities that comply with the provisions of Section 26(d)(i)(B) of this Chapter, an implementation schedule as specified in Section 26(d)(i)(B) of this Chapter.

264.1064(b)(3) (C) Where an owner or operator chooses to use test data to demonstrate the organic removal efficiency or total organic compound concentration achieved by the control device, a performance test plan as specified in Section 26(f)(ii)(C) of this Chapter.

264.1064(b)(4) (D) Documentation of compliance with, including the detailed design documentation or performance test results specified in Section 26(f)(ii)(D) of this Chapter.

- 264.1064(c) (iii) When each leak is detected as specified in Sections 27(c), 27(d), 27(h), and 27(i) of this Chapter, the following requirements apply:
- 264.1064(c)(1) (A) A weatherproof and readily visible identification, marked with the equipment identification number, the date evidence of a potential leak was found in accordance with Section 27(i)(i) of this Chapter, and the date the leak was detected, shall be attached to the leaking equipment.
- 264.1064(c)(2) (B) The identification on equipment, except on a valve, may be removed after it has been repaired.
- 264.1064(c)(3) (C) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in Section 27(h)(iii) of this Chapter and no leak has been detected during those 2 months.
- 264.1064(d) (iv) When each leak is detected as specified in Sections 27(c), 27(d), 27(h), and 27(i) of this Chapter, the following information shall be recorded in an inspection log and shall be kept in the facility operating record:
- 264.1064(d)(1) (A) The instrument and operator identification numbers and the equipment identification number.
- 264.1064(d)(2) (B) The date evidence of a potential leak was found in accordance with Section 27(i)(i) of this Chapter.
- 264.1064(d)(3) (C) The date the leak was detected and the dates of each attempt to repair the leak.
- 264.1064(d)(3) (D) Repair methods applied in each attempt to repair the leak.
- 264.1064(d)(5) (E) "Above 10,000" if the maximum instrument reading measured by the methods specified in Section 27(n)(ii) of this Chapter after each repair attempt is equal to or greater than 10,000 ppm.
- 264.1064(d)(6) (F) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
- 264.1064(d)(7) (G) Documentation supporting the delay of repair of a valve in compliance with Section 27(j)(iii) of this Chapter.
- 264.1064(d)(8) (H) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a hazardous waste management unit shutdown.
- 264.1064(d)(9) (I) The expected date of successful repair of the leak if a leak is not repaired within 15 calendar days.
- 264.1064(d)(10) (J) The date of successful repair of the leak.
- 264.1064(e) (v) Design documentation and monitoring, operating, and inspection information for each closed-vent system and control

device required to comply with the provisions of Section 27(k) of this Chapter shall be recorded and kept up-to-date in the facility operating record as specified in Section 26(f)(iii) of this Chapter. Design documentation is specified in Section 26(f)(iii)(A) and (B) of this Chapter and monitoring, operating, and inspection information in Sections 26(f)(iii)(C) - (H) of this Chapter.

- 264.1064(f) (vi) For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the Director will specify the appropriate recordkeeping requirements.
- 264.1064(g) (vii) The following information pertaining to all equipment subject to the requirements in Sections 27(c) through 27(k) of this Chapter shall be recorded in a log that is kept in the facility operating record:
- 264.1064(g)(1) (A) A list of identification numbers for equipment (except welded fittings) subject to the requirements of this Section.
- (B) Equipment designation:
- 264.1064(g)(2)(i) (I) A list of identification numbers for equipment that the owner or operator elects to designate for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, under the provisions of Sections 27(c)(v), 27(d)(ix), and 27(h)(vi) of this Chapter.
- ...(ii) (II) The designation of this equipment as subject to the requirements of Sections 27(c)(v), 27(d)(ix), and 27(h)(vi) of this Chapter shall be signed by the owner or operator.
- 264.1064(g)(3) (C) A list of equipment identification numbers for pressure relief devices required to comply with Section 27(e)(i) of this Chapter.
- (D) Compliance tests:
- 264.1064(g)(4) (I) The dates of each compliance test required in Sections 27(c)(v), 27(d)(ix), 27(e), and 27(h)(vi) of this Chapter.
- ...(ii) (II) The background level measured during each compliance test.
- ...(iii) (III) The maximum instrument reading measured at the equipment during each compliance test.
- 264.1064(g)(5) (E) A list of identification numbers for equipment in vacuum service.
- 264.1064(g)(6) (F) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year.
- 264.1064(h) (viii) The following information pertaining to all valves subject to the requirements of Sections 27(h)(vii) and 27(h)(viii)

of this Chapter shall be recorded in a log that is kept in the facility operating record:

- 264.1064(h)(1) (A) A list of identification numbers for valves that are designated as unsafe to monitor, an explanation for each valve stating why the valve is unsafe to monitor, and the plan for monitoring each valve.
- 264.1064(h)(2) (B) A list of identification numbers for valves that are designated as difficult to monitor, an explanation for each valve stating why the valve is difficult to monitor, and the planned schedule for monitoring each valve.
- 264.1064(i) (ix) The following information shall be recorded in the facility operating record for valves complying with Section 27(m) of this Chapter:
- 264.1064(i)(1) (A) A schedule of monitoring.
- 264.1064(i)(2) (B) The percent of valves found leaking during each monitoring period.
- 264.1064(j) (x) The following information shall be recorded in a log that is kept in the facility operating record:
- 264.1064(j)(1) (A) Criteria required in Sections 27(c)(iv)(E)(II) and 27(d)(v)(B) of this Chapter and an explanation of the design criteria.
- 264.1064(j)(2) (B) Any changes to these criteria and the reasons for the changes.
- 264.1064(k) (xi) The following information shall be recorded in a log that is kept in the facility operating record for use in determining exemptions as provided in the applicability Section 27(a) of this Chapter and other specific Sections:
- 264.1064(k)(1) (A) An analysis determining the design capacity of the hazardous waste management unit.
- 264.1064(k)(2) (B) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in Sections 27(c) through 27(k) of this Chapter and an analysis determining whether these hazardous wastes are heavy liquids.
- 264.1064(k)(3) (C) An up-to-date analysis and the supporting information and data used to determine whether or not equipment is subject to the requirements in Sections 27(c) through 27(k) of this Chapter. The record shall include supporting documentation as required by Section 27(n)(iv)(C) of this Chapter when application of the knowledge of the nature of the hazardous waste stream or the process by which it was produced is used. If the owner or operator takes any action (e.g., changing the process that produced the waste) that could result in an increase in the total organic content of the waste contained in or contacted by equipment determined not to be subject to the requirements in Sections 27(c) through 27(k) of this Chapter, then a new determination is required.

264.1064(l) (xii) Records of the equipment leak information required by Section 27(o)(iv) of this Chapter and the operating information required by Section 27(o)(v) of this Chapter need be kept only 3 years.

264.1064(m) (xiii) The owner or operator of a facility with equipment that is subject to Section 27 of this Chapter and to regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with Section 27 of this Chapter by documentation pursuant to Section 27(o) of this Chapter, or by documentation of compliance with the regulations at 40 CFR part 60, part 61, or part 63 pursuant to the relevant provisions of the regulations at 40 CFR part 60, part 61, or part 63. The documentation of compliance under the regulations at 40 CFR part 60, part 61, or part 63 shall be kept with or made readily available with the facility operating record.

264.1065 (p) REPORTING REQUIREMENTS.

264.1065(a) (i) A semiannual report shall be submitted by owners and operators subject to the requirements of Section 27 of this Chapter to the Director by dates specified by the Director. The report shall include the following information:

264.1065(a)(1) (A) The Environmental Protection Agency identification number, name, and address of the facility.

264.1065(a)(2) (B) For each month during the semiannual reporting period:

...(i) (I) The equipment identification number of each valve for which a leak was not repaired as required in Section 27(h)(iv) of this Chapter.

...(ii) (II) The equipment identification number of each pump for which a leak was not repaired as required in Sections 27(c)(iii) and 27(c)(iv)(F) of this Chapter.

...(iii) (III) The equipment identification number of each compressor for which a leak was not repaired as required in Section 27(d)(vii) of this Chapter.

264.1065(a)(3) (C) Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period.

264.1065(a)(4) (D) For each month during the semiannual reporting period, dates when the control device installed as required by Sections 27(c), 27(d), 27(e), or 27(f) of this Chapter exceeded or operated outside of the design specifications as defined in Section 27(o)(v) of this Chapter and as indicated by the control device monitoring required by Section 27(k) of this Chapter and was not corrected within 24 hours, the duration and cause of each exceedance, and any corrective measures taken.

264.1065(b) (ii) If, during the semiannual reporting period, leaks from valves, pumps, and compressors are repaired as required in Sections 27(h)(iv), 27(c)(iii) and 27(c)(iv)(F), and 27(d)(vii) of this Chapter, respectively, and the control device does not exceed or operate outside of the design specifications as defined in Section 27(o)(v) of this Chapter for more than 24 hours, a report to

the Director is not required.

264.1066-.1079 (q) - (w) RESERVED.

264/Subpart CC Section 28. AIR EMISSION STANDARDS FOR TANKS, SURFACE
IMPOUNDMENTS, AND CONTAINERS

264.1080 (a) APPLICABILITY.

264.1080(a) (i) The requirements of this ~~subpart~~ Section apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either Sections 8, 9, or 10 of this Chapter except as Section 1(a) and Section 28(a)(ii) of ~~the~~ this Chapter provide otherwise.

264.1080(b) (ii) The requirements of this Section do not apply to the following waste management units at the facility:

264.1080(b)(1) (A) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.

264.1080(b)(2) (B) A container that has a design capacity less than or equal to 0.1 m³.

264.1080(b)(3) (C) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

264.1080(b)(4) (D) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.

264.1080(b)(5) (E) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is ~~generated~~ placed in the unit as the result of implementing remedial activities required under the corrective action authorities of RCRA Sections 3004(u), 3004(v), or 3008(h), CERCLA authorities, or similar Federal authorities, or **W.S. 35-11-503(d)**, Chapter 10, Section 6(1)(iii)(A) and (B), and Chapter 11, Section 8(f) of these rules and regulations.

264.1080(b)(6) (F) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.

264.1080(b)(7) (G) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with Section 28(a)(ii)(G) of this Chapter, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of

Section 28(e)(ix) of this Chapter, except as provided in Section 28(c)(iii)(E) of this Chapter.

264.1080(b)(8) (H) A tank that has a process vent as defined in Chapter 1, Section 1(f)(i) of these rules and regulations.

264.1080(c) (iii) For the owner and operator of a facility subject to ~~this Section 28 of this Chapter (subpart)~~ who received a final permit under RCRA Section 3005 **or W.S. 35-11-503(d)** prior to December 6, 1996, the requirements of this Section shall be incorporated into the permit when the permit is reissued in accordance with the requirements of Chapter 3, Section 1(l) of these rules and regulations or reviewed in accordance with the requirements of Chapter 4, Section 2(a)(iv) of these rules and regulations. Until such date when the permit is reissued in accordance with the requirements of Chapter 4, Section 2(a)(iv) of these rules and regulations or reviewed in accordance with the requirements of Chapter 4, Section 2(a)(iv) of these rules and regulations, the owner and operator is subject to the requirements of Chapter 11, Section 28 of these rules and regulations.

264.1080(d) (iv) The requirements of ~~this subpart~~ Section 28 of this Chapter, except for the recordkeeping requirements specified in Section 28(j)(ix) of this Chapter, are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

264.1080(d)(1) (A) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this paragraph, "organic peroxide" means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

264.1080(d)(2) (B) The owner or operator prepares documentation, in accordance with the requirements of Section 28(j)(ix) of this Chapter, explaining why an undue safety hazard would be created if air emission controls specified in Section 28(e) through Section 28(h) of this Chapter are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of Section 28(a)(iv)(A) of this Chapter.

264.1080(d)(3) (C) The owner or operator notifies the ~~Administrator~~ Director in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of Section 28(a)(iv)(A) of this Chapter are managed at the facility in tanks or containers meeting the conditions of Section 28(a)(iv)(B) of this Chapter. The notification shall state

the name and address of the facility, and be signed and dated by an authorized representative of the facility owner or operator.

264.1081 (b) DEFINITIONS.

(i) As used in Section 28 of this Chapter, all terms shall have the meaning given to them in Chapter 1, Section 1(f)(i) of these rules and regulations.

264.1082 (c) STANDARDS: GENERAL.

264.1082(a) (i) ~~This Section 28(c) of this Chapter~~ applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to Section 28 of this Chapter.

264.1082(b) (ii) The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in Section 28(e) through Section 28(h) of this Chapter, as applicable to the hazardous waste management unit, except as provided for in Section 28(c)(iii) of this Chapter.

264.1082(c) (iii) A tank, surface impoundment, or container is exempt from standards specified in Section 28(e) through Section 28(h) of this Chapter, as applicable, provided that the waste management unit is one of the following:

264.1082(c)(1) (A) A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in Section 28(d)(i) of this Chapter. The owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.

264.1082(c)(2) (B) A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:

..(i) (I) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in Section 28(d)(ii) of this Chapter.

..(ii) (II) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified

in Section 28(d)(ii) of this Chapter.

..(iii) (III) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in Section 28(d)(ii) of this Chapter.

..(iv) (IV) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

(1.) The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in Section 28(d)(ii) of this Chapter.

(2.) The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in Section 28(d)(ii) of this Chapter.

..(v) (V) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

(1.) From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is managed continuously in waste management units which use air emission controls in accordance with the standards specified in Section 28(e) through Section 28(h) of this Chapter, as applicable to the waste management unit.

(2.) From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. The Department considers a drain system that meets the requirements of 40 CFR part 63, subpart RR--National Emission Standards for Individual Drain Systems to be a closed system.

(3.) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified in Section 28(d)(i) of this Chapter. The average VO concentration of

the hazardous waste at the point of waste treatment shall be determined using the procedures specified in Section 28(d)(ii) of this Chapter.

..(vi) (VI) process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination shall be determined using the procedures specified in Section 28(d)(ii) and Section 28(d)(i) of this Chapter, respectively.

..(vii) (VII) A hazardous waste incinerator for which the owner or operator has either:

(1.) Been issued a final permit under Chapter 1, Section 1(h) through (j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2 of these rules and regulation which implements the requirements of Section 14 of this Chapter; or

(2.) Has designed and operates the incinerator in accordance with the interim status requirements of Chapter 11, Section 16 of these rules and regulations.

..(viii) (VIII) A boiler or industrial furnace for which the owner or operator has either:

(1.) Been issued a final permit under Chapter 1, Section (h) through (j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2, Chapter 7; and Chapter 11, Section 2 of these rules and regulations which implements the requirements of Chapter 12, Section 8 of these rules and regulations, or

(2.) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR part 266, subpart H. **See Chapter 12, Section 8(d) and Chapter 7, Section 1(g)(vii).**

..(ix) (IX) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of Section 28(c)(iii)(B)(I) through Section 28(c)(iii)(B)(VI) of this Chapter, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

(1.) If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method at Section 4.4 of Method 25D in 40 CFR part 60, appendix A or a value of 25 ppmw, whichever is less.

(2.) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law

constant value of at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m³] at 25 degrees Celsius.

- 264.1082(c)(3) (C) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of Section 28(c)(iii)(B)(IV) of this Chapter.
- 264.1082(c)(4) (D) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:
- ..(i) (I) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in Chapter 13--Land Disposal Restrictions under Table "Treatment Standards for Hazardous Waste" in Chapter 13, Section 4 of these rules and regulations; or
 - ..(ii) (II) The organic hazardous constituents in the waste have been treated by the treatment technology established by the EPA Department for the waste in Chapter 13, Section 4(c)(i) of these rules and regulations, or have been removed or destroyed ~~treated~~ by an equivalent method of treatment approved by EPA pursuant to Chapter 13, Section 4(c)(ii) of these rules and regulations.
- 264.1082(c)(5) (E) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:
- ..(i) (I) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF--National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;
 - ..(ii) (II) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996 and
 - ..(iii) (III) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" annually.
- 264.1082(d) (iv) The Director Administrator may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of ~~this~~ Section 28(c) of this Chapter as follows:
- 264.1082(d)(1) (A) The waste determination for average VO

concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of Section 28(d)(i) of this Chapter. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of Section 28(d)(ii) of this Chapter.

264.1082(d)(2) (B) In performing a waste determination pursuant to Section 28(c)(iv)(A) of this Chapter, the sample preparation and analysis shall be conducted as follows:

..(i) (I) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in Section 28(c)(iv)(B)(II) of this Chapter.

..(ii) (II) If the Director ~~Administrator~~ determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment, or container, then the Administrator may choose an appropriate method.

264.1082(d)(3) (C) In a case when the owner or operator is requested to perform the waste determination, the Director ~~Administrator~~ may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

264.1082(d)(4) (D) In a case when the results of the waste determination performed or requested by the Director ~~Administrator~~ do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of Section 28(c)(iv)(A) of this Chapter shall be used to establish compliance with the requirements of this Section.

264.1082(d)(5) (E) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Director ~~Administrator~~ may elect to establish compliance with this Section by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:

..(i) (I) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of Section 28(d)(i) of this Chapter.

..(ii) (II) Results of the waste determination performed or requested by the Director ~~Administrator~~ showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with this Section except in a case as provided for in Section 28(c)(iv)(E)(III) of this Chapter.

..(iii) (III) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 500

ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 500 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of Section 28(d)(i) and Section 28(j) of this Chapter shall be considered by the Director Administrator together with the results of the waste determination performed or requested by the Director Administrator in establishing compliance with this Section.

264.1083 (d) WASTE DETERMINATION PROCEDURES.

264.1083(a) (i) Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

264.1083(a)(1) (A) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of Section 28(c)(iii)(A) of this Chapter from using air emission controls in accordance with standards specified in Section 28(e) through Section 28(h) of this Chapter, as applicable to the waste management unit.

..(i) (I) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of Section 28(c)(iii)(A) of this Chapter from using air emission controls, and thereafter an initial determination of the average VO concentration of the waste stream shall be made for each averaging period that a hazardous waste is managed in the unit; and

..(ii) (II) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration limits specified in Section 28(c) of this Chapter.

264.1083(a)(2) (B) For a waste determination that is required by Section 28(d)(i)(A) of this Chapter, the average VO concentration of a hazardous waste at the point of waste origination shall be determined in accordance with the procedures specified in Chapter 11, Section 30(e)(i)(B) through Section 30(e)(i)(D)~~(E)~~ of these rules and regulations.

264.1083(b) (ii) Waste determination procedures for treated hazardous waste.

264.1083(b)(1) (A) An owner or operator shall perform the applicable waste determinations for each treated hazardous waste placed in waste management units exempted under the provisions of Section 28(c)(iii)(B)(I) through Section 28(c)(iii)(B)(VI) of this Chapter from using air emission controls in accordance with standards specified in Section 28(e) through Section 28(h) of this Chapter, as applicable to the waste management unit.

..(i) (I) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the treated waste stream is placed in the exempt waste management unit, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and

..(ii) (II) Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in Section 28(c)(iii)(B) of this Chapter are not achieved.

264.1083(b)(2) (B) The waste determination for a treated hazardous waste shall be performed in accordance with the procedures specified in Chapter 11, Section 30(e)(ii)(B) through Section 30(e)(ii)(I) of these rules and regulations, as applicable to the treated hazardous waste.

264.1083(c) (iii) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.

264.1083(c)(1) (A) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with standards specified in Section 28(e)(iii) of this Chapter.

264.1083(c)(2) (B) The maximum organic vapor pressure of the hazardous waste may be determined in accordance with the procedures specified in Chapter 11, Section 30(e)(iii)(B) through Section 30(e)(iii)(D) of these rules and regulations.

264.1083(d) (iv) The procedure for determining no detectable organic emissions for the purpose of complying with ~~this~~ Section 28 of this Chapter ~~{subpart}~~ shall be conducted in accordance with the procedures specified in Chapter 11, Section 30(e)(iv) of these rules and regulations ~~Section 28(e)(iv) of this Chapter~~ ~~{40 CFR 265.1084(d)}~~.

264.1084 (e) STANDARDS: TANKS.

264.1084(a) (i) The provisions of ~~this~~ Section 28(e) of this Chapter apply to the control of air pollutant emissions from tanks for which Section 28(c)(ii) of this Chapter references the use of this subsection (Section 28(e) of this Chapter) for such air emission control.

264.1084(b) (ii) The owner or operator shall control air pollutant emissions from each tank subject to ~~this~~ Section 28(e) of this Chapter in accordance with the following requirements as applicable:

264.1084(b)(1) (A) For a tank that manages hazardous waste that meets all of the conditions specified in Section 28(e)(~~d~~)(ii)(A)(I) through Section 28(e)(~~d~~)(ii)(A)(III) of this Chapter, the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in Section

28(e)(d)(iii) of this Chapter or the Tank Level 2 controls specified in Section 28(e)(d)(iv) of this Chapter.

..(i) (I) The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

(1.) For a tank design capacity equal to or greater than 151 m³, the maximum organic vapor pressure limit for the tank is 5.2 kPa.

(2.) For a tank design capacity equal to or greater than 75 m³ but less than 151 m³, the maximum organic vapor pressure limit for the tank is 27.6 kPa.

(3.) For a tank design capacity less than 75 m³, the maximum organic vapor pressure limit for the tank is 76.6 kPa.

..(ii) (II) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with Section 28(e)(ii)(A)(I) of this Chapter.

..(iii) (III) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations.

264.1084(b)(2) (B) For a tank that manages hazardous waste that does not meet all of the conditions specified in Section 28(e)(ii)(B)(I) through Section 28(e)(ii)(B)(III) of this Chapter, the owner or operator shall control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of Section 28(e)(iv) of this Chapter. Examples of tanks required to use Tank Level 2 controls include: A tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in Section 28(e)(ii)(A)(I) of this Chapter.

264.1084(c) (iii) Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in Section 28(e)(iii)(A) through Section 28(e)(iii)(D) of this Chapter:

264.1084(c)(1) (A) The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in Section 28(d)(iii) of this Chapter. Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the

tank design capacity category specified in Section 28(e)(ii)(A)(I) of this Chapter, as applicable to the tank.

264.1084(c)(2) (B) The tank shall be equipped with a fixed roof designed to meet the following specifications:

..(i) (I) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

..(ii) (II) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof Section joints or between the interface of the roof edge and the tank wall.

..(iii) (III) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:

..(iii)(A) (1.) Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

..(iii)(B) (2.) Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever hazardous waste is managed in the tank, except as provided for in Section 28(e)(iii)(B)(III)(2.)(a.) and (b.) of this Chapter.

a. During periods when it is necessary to provide access to the tank for performing the activities of Section 28(e)(iii)(B)(III)(2.)(b.) of this Chapter, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

b. During periods of routine inspection, maintenance, or other activities needed for normal operations, and for removal of accumulated sludge or other residues from the bottom of the tank.

..(iv) (IV) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind,

moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

264.1084(c)(3) (C) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

..(i) (I) Opening of closure devices or removal of the fixed roof is allowed at the following times:

..(i)(A) (1.) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

..(i)(B) (2.) To remove accumulated sludge or other residues from the bottom of tank.

..(ii) (II) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

..(iii) (III) Opening of a safety device, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, is allowed at any time conditions require doing so to avoid an unsafe condition.

264.1084(c)(4) (D) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.

..(i) (I) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof Sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

- ..(ii) (II) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to Section 28(e) of this Chapter ~~[this Section]~~. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in Section 28(e)(xii) of this Chapter.
- ..(iii) (III) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(e)(xi) of this Chapter.
- ..(iv) (IV) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in Section 28(j)(ii) of this Chapter.
- 264.1084(d) (iv) Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:
- 264.1084(d)(1) (A) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in Section 28(e)(v) of this Chapter;
- 264.1084(d)(2) (B) A tank equipped with an external floating roof in accordance with the requirements specified in Section 28(e)(vi) of this Chapter;
- 264.1084(d)(3) (C) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in Section 28(e)(vii) of this Chapter;
- 264.1084(d)(4) (D) A pressure tank designed and operated in accordance with the requirements specified in Section 28(e)(viii) of this Chapter; or
- 264.1084(d)(5) (E) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in Section 28(e)(ix) of this Chapter.
- 264.1084(e) (v) The owner or operator who controls air pollutant emissions from a tank using a fixed roof with an internal floating roof shall meet the requirements specified in Section 28~~(e)(d)~~(v)(A) through Section 28~~(e)(d)~~(v)(C) of this Chapter.
- 264.1084(e)(1) (A) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:
- ..(i) (I) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.
- ..(ii) (II) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

(1.) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations; or

(2.) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

..(iii) (III) The internal floating roof shall meet the following specifications:

(1.) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(2.) Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

(3.) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.

(4.) Each automatic bleeder vent and rim space vent shall be gasketed.

(5.) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(6.) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

264.1084(e)(2) (B) The owner or operator shall operate the tank in accordance with the following requirements:

..(i) (I) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

..(ii) (II) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

..(iii) (III) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

264.1084(e)(3) (C) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

..(i) (I) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: The internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

..(ii) (II) The owner or operator shall inspect the internal floating roof components as follows except as provided in Section 28(e)(v)(C)(III) of this Chapter:

(1.) Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill, and

(2.) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.

..(iii) (III) As an alternative to performing the inspections specified in Section 28(e)(v)(C)(II) of this Chapter for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years.

..(iv) (IV) Prior to each inspection required by Section 28(e)(v)(C)(II) or Section 28(e)(v)(C)(III) of this Chapter, the owner or operator shall notify the Director ~~Administrator~~ ~~[Regional Administrator]~~ in advance of each inspection to provide the Director ~~Administrator~~ with the opportunity to have an observer present during the inspection. The owner or operator shall notify the ~~Administrator~~ Director of the date and location of the inspection as follows:

(1.) Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Director ~~Administrator~~ ~~[Regional Administrator]~~ at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in Section 28(e)(v)(C)(IV)(2.) of this Chapter.

(2.) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Director ~~Administrator~~ as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is

received by the Director ~~Administrator~~ at least 7 calendar days before refilling the tank.

- ..(v) (V) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(e)(xi) of this Chapter.
- ..(vi) (VI) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in Section 28(j)(ii) of this Chapter.
- 264.1084(e)(4) (D) Safety devices, as defined in Chapter 1, Section 1(f)(i), may be installed and operated as necessary on any tank complying with the requirements of Section 28(e)(v) of this Chapter.
- 264.1084(f) (vi) The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in Section 28(e)(vi)(A) through Section 28(e)(vi)(C) of this Chapter.
- 264.1084(f)(1) (A) The owner or operator shall design the external floating roof in accordance with the following requirements:
 - ..(i) (I) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.
 - ..(ii) (II) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.
 - (1.) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm²) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.
 - (2.) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm²) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).
 - ..(iii) (III) The external floating roof shall meet the following specifications:
 - (1.) Except for automatic bleeder

vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

(2.) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

(3.) Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.

(4.) Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.

(5.) Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(6.) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

(7.) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

(8.) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

(9.) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

264.1084(f)(2) (B) The owner or operator shall operate the tank in accordance with the following requirements:

..(i) (I) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

..(ii) (II) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.

..(iii) (III) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

..(iv) (IV) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

..(v) (V) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

..(vi) (VI) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

..(vii) (VII) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.

..(viii) (VIII) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

264.1084(f)(3) (C) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

..(i) (I) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(1.) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years.

(2.) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.

(3.) If a tank ceases to hold hazardous waste for a period of 1 year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of Section 28(e)(vi)(C)(I)(1.) and Section 28(e)(vi)(C)(I)(2.)~~(1.)~~ of this Chapter.

(4.) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

a. The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

b. Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

c. For a seal gap measured under Section 28(e)(vi)(C) of this Chapter, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and

multiplying each such width by its respective circumferential distance.

d. The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in Section 28(e)(vi)(A)(II) of this Chapter.

(5.) In the event that the seal gap measurements do not conform to the specifications in Section 28(e)(vi)(A)(II) of this Chapter, the owner or operator shall repair the defect in accordance with the requirements of Section 28(e)(xi) of this Chapter.

(6.) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in Section 28(j)(ii) of this Chapter.

..(ii) (II) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(1.) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: Holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(2.) The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to Section 28(e) of this Chapter. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in Section 28(e)(xii) of this Chapter.

(3.) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(e)(xi) of this Chapter.

(4.) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in Section 28(j)(ii) of this Chapter.

..(iii) (III) Prior to each inspection required by Section 28(e)(vi)(C)(I) or Section 28(e)(vi)(C)(II) of this Chapter, the owner or operator shall notify the Director Administrator in advance of each inspection to provide the Director Administrator with the opportunity to have an observer present during the

inspection. The owner or operator shall notify the Director
~~Administrator~~ of the date and location of the inspection as follows:

(1.) Prior to each inspection to measure external floating roof seal gaps as required under Section 28(e)(vi)(C)(I) of this Chapter, written notification shall be prepared and sent by the owner or operator so that it is received by the Director ~~Administrator~~ at least 30 calendar days before the date the measurements are scheduled to be performed.

(2.) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Director ~~Administrator~~ [Regional Administrator] at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in Section 28(e)(vi)(C)(III)(3.) of this Chapter.

(3.) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Director ~~Administrator~~ as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Director ~~Administrator~~ at least 7 calendar days before refilling the tank.

264.1084(f)(4) (D) Safety devices, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, may be installed and operated as necessary on any tank complying with the requirements of Section 28(e)~~(iv)~~(vi) of this Chapter.

264.1084(g) (vii) The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in Section 28(e)(vii)(A) through (C) of this Chapter.

264.1084(g)(1) (A) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

..(i) (I) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.

..(ii) (II) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be

designed to operate with no detectable organic emissions.

..(iii) (III) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

..(iv) (IV) The closed-vent system and control device shall be designed and operated in accordance with the requirements of Section 28(h) of this Chapter.

264.1084(g)(2) (B) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

..(i) (I) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(1.) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(2.) To remove accumulated sludge or other residues from the bottom of a tank.

..(ii) (II) Opening of a safety device, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, is allowed at any time conditions require doing so to avoid an unsafe condition.

264.1084(g)(3) (C) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

..(i) (I) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof Sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

..(ii) (II) The closed-vent system and control device shall be inspected and monitored by the owner or operator in

accordance with the procedures specified in Section 28(h) of this Chapter.

..(iii) (III) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this subsection (Section 28(e) of this Chapter). Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in Section 28(e)(xii) of this Chapter.

..(iv) (IV) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(e)(xi) of this Chapter.

..(v) (V) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in Section 28(j)(ii) of this Chapter.

264.1084(h) (viii) The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.

264.1084(h)(1) (A) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

264.1084(h)(2) (B) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in Section 28(d)(iv) of this Chapter.

264.1084(h)(3) (C) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere ~~except in the event that a safety device, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, is required to open to avoid an unsafe condition.~~ under either or the following conditions as specified in Section 28(e)(viii)(C)(I) or (II) of this Chapter.

..(i) (I) At those times when opening of a safety device, as defined in Section 28(b) of this Chapter, is required to avoid an unsafe condition.

..(ii) (II) At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of Section 28(h) of this Chapter.

264.1084(i) (ix) The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in Section 28(e)(ix)(A) through (D) of this Chapter.

264.1084(i)(1) (A) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a

Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.

- 264.1084(i)(2) (B) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in Section 28(h) of this Chapter.
- 264.1084(i)(3) (C) Safety devices, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of Section 28(e)(ix)(A) through (B) of this Chapter.
- 264.1084(i)(4) (D) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in Section 28(h) of this Chapter.
- 264.1084(j) (x) The owner or operator shall transfer hazardous waste to a tank subject to this Section in accordance with the following requirements:
- 264.1084(j)(1) (A) Transfer of hazardous waste, except as provided in Section 28(e)(x)(B) of this Chapter, to the tank from another tank subject to this Section or from a surface impoundment subject to Section 28(f) of this Chapter shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR--National Emission Standards for Individual Drain Systems.
- 264.1084(j)(2) (B) The requirements of Section 28(e)(x)(A) of this Chapter do not apply when transferring a hazardous waste to the tank under any of the following conditions:
- ..(i) (I) The hazardous waste meets the average VO concentration conditions specified in Section 28(c)(iii)(A) of this Chapter at the point of waste origination.
- ..(ii) (II) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in Section 28(c)(iii)(B) of this Chapter.
- ..(iii) (III) The hazardous waste meets the requirements of Section 28(c)(iii)(D) of this Chapter.
- 264.1084(k) (xi) The owner or operator shall repair each defect detected during an inspection performed in accordance with the

requirements of Section 28(e)(iii)(D), Section 28(e)(v)(C), Section 28(e)(vi)(C) or Section 28(e)(vii)(C) of this Chapter as follows:

- 264.1084(k)(1) (A) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in Section 28(e)(xi)(B) of this Chapter.
- 264.1084(k)(2) (B) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.
- 264.1084(l) (xii) Following the initial inspection and monitoring of the cover as required by the applicable provisions of Section 28 of this Chapter, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions:
- 264.1084(l)(1) (A) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:
- ..(i) (I) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.
- ..(ii) (II) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable subsections of this Section ~~subpart~~, as frequently as practicable during those times when a worker can safely access the cover.
- 264.1084(l)(2) (B) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of Section 28(e) of this Chapter, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.
- 264.1085 (f) STANDARDS: SURFACE IMPOUNDMENTS.
- 264.1085(a) (i) The provisions of Section 28(f) of this Chapter apply to the control of air pollutant emissions from surface impoundments for which Section 28(c)(ii) of this Chapter references the use of this subsection ~~[this Section]~~ for such air emission control.
- 264.1085(b) (ii) The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

- 264.1085(b)(1) (A) A floating membrane cover in accordance with the provisions specified in Section 28(f)(iii) of this Chapter; or
- 264.1085(b)(2) (B) A cover that is vented through a closed-vent system to a control device in accordance with the provisions specified in Section 28(f)(iv) of this Chapter.
- 264.1085(c) (iii) The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in Section 28(f)(iii)(A) through (C) of this Chapter.
- 264.1085(c)(1) (A) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:
- ..(i) (I) The floating membrane cover shall be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.
- ..(ii) (II) The cover shall be fabricated from a synthetic membrane material that is either:
- (1.) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or
- (2.) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in Section 28(f)(iii)(A)(II)(1.) of this Chapter and chemical and physical properties that maintain the material integrity for the intended service life of the material.
- ..(iii) (III) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover Section seams or between the interface of the cover edge and its foundation mountings.
- ..(iv) (IV) Except as provided for in Section 28(f)(iii)(A)(V) of this Chapter, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.
- ..(v) (V) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.
- ..(vi) (VI) The closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials

of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

264.1085(c)(2) (B) Whenever a hazardous waste is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:

..(i) (I) Opening of closure devices or removal of the cover is allowed at the following times:

(1.) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

(2.) To remove accumulated sludge or other residues from the bottom of surface impoundment.

..(ii) (II) Opening of a safety device, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, is allowed at any time conditions require doing so to avoid an unsafe condition.

264.1085(c)(3) (C) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:

..(i) (I) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover Section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

..(ii) (II) The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this Section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in Section 28(f)(vii) of this Chapter.

..(iii) (III) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(f)(vi) of this Chapter.

..(iv) (IV) The owner or operator shall maintain a record of the inspection in accordance with the requirements

specified in Section 28(j)(iii) of this Chapter.

264.1085(d) (iv) The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in Section 28(f)(iv)(A) through (C) of this Chapter.

264.1085(d)(1) (A) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

..(i) (I) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

..(ii) (II) Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in Section 28(d)(iv) of this Chapter.

..(iii) (III) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

..(iv) (IV) The closed-vent system and control device shall be designed and operated in accordance with the requirements of Section 28(h) of this Chapter.

264.1085(d)(2) (B) Whenever a hazardous waste is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

..(i) (I) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

(1.) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a

hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.

(2.) To remove accumulated sludge or other residues from the bottom of the surface impoundment.

..(ii) (II) Opening of a safety device, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, is allowed at any time conditions require doing so to avoid an unsafe condition.

264.1085(d)(3) (C) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

..(i) (I) The surface impoundment cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover Section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

..(ii) (II) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in Section 28(h) of this Chapter.

..(iii) (III) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this Section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in Section 28(f)(vii) of this Chapter.

..(iv) (IV) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(f)(vi) of this Chapter.

..(v) (V) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in Section 28(j)(iii) of this Chapter.

264.1085(e) (v) The owner or operator shall transfer hazardous waste to a surface impoundment subject to this Section in accordance with the following requirements:

264.1085(e)(1) (A) Transfer of hazardous waste, except as provided in Section 28(f)(v)(B) of this Chapter, to the surface impoundment from another surface impoundment subject to this subsection (Section 28(f) of this Chapter) or from a tank subject to Section 28(e) of this Chapter shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed

system when it meets the requirements of 40 CFR part 63, subpart RR-National Emission Standards for Individual Drain Systems.

264.1085(e)(2) (B) The requirements of Section 28(f)(v)(A) of this Chapter do not apply when transferring a hazardous waste to the surface impoundment under **any** of the following conditions:

..(i) (I) The hazardous waste meets the average VO concentration conditions specified in Section 28(c)(iii)(A) of this Chapter at the point of waste origination.

..(ii) (II) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in Section 28(c)(iii)(B) of this Chapter.

..(iii) (III) The hazardous waste meets the requirements of Section 28(c)(iii)(D) of this Chapter.

264.1085(f) (vi) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of Section 28(f)(iii)(C) or Section 28(f)(iv)(C) of this Chapter as follows:

264.1085(f)(1) (A) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in Section 28(f)(vi)(B) of this Chapter.

264.1085(f)(2) (B) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the surface impoundment stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

264.1085(g) (vii) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this Section, subsequent inspection and monitoring may be performed at intervals longer than 1 year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an "unsafe to inspect and monitor cover" and comply with all of the following requirements:

264.1085(g)(1) (A) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

264.1085(g)(2) (B) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable subsection of this Section ~~28 of this Chapter~~ as frequently as practicable during those times when a worker can safely access the cover.

264.1086 (g) STANDARDS: CONTAINERS.

264.1086(a) (i) The provisions of this subsection (Section 28(g) of this Chapter) apply to the control of air pollutant emissions from containers for which Section 28(c)(ii) of this Chapter references the use of this subsection (Section 28(g) of this Chapter) for such air emission control.

264.1086(b) (ii) General requirements.

264.1086(b)(1) (A) The owner or operator shall control air pollutant emissions from each container subject to this subsection (Section 28(g) of this Chapter) in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in Section 28(g)(ii)(B) of this Chapter apply to the container.

..(i) (I) For a container having a design capacity greater than 0.1 m³ and less than or equal to 0.46 m³, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in Section 28(g)(iii) of this Chapter.

..(ii) (II) For a container having a design capacity greater than 0.46 m³ that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in Section 28(g)(iii) of this Chapter.

..(iii) (III) For a container having a design capacity greater than 0.46 m³ that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in Section 28(g)(iv) of this Chapter.

264.1086(b)(2) (B) When a container having a design capacity greater than 0.1 m³ is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in Section 28(g)(v) of this Chapter at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

264.1086(c) (iii) Container Level 1 standards.

264.1086(c)(1) (A) A container using Container Level 1 controls is one of the following:

..(i) (I) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in Section 28(g)(vi) of this Chapter.

..(ii) (II) A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or

a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a "portable tank" or bulk cargo container equipped with a screw-type cap).

..(iii) (III) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

264.1086(c)(2) (B) A container used to meet the requirements of Section 28(g)(iii)(A)(II) or (III) of this Chapter shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity, for as long as the container is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

264.1086(c)(3) (C) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

..(i) (I) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(1.) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(2.) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

..(ii) (II) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(1.) For the purpose of meeting the requirements of this Section, an empty container as defined in Chapter 2, Section 1(g)(ii) of these rules and regulations may be

open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

(2.) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in Chapter 2, Section 1(g)(ii) of these rules and regulations, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

..(iii) (III) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

..(iv) (IV) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

..(v) (V) Opening of a safety device, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, is allowed at any time conditions require doing so to avoid an unsafe condition.

264.1086(c)(4) (D) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:

..(i) (I) In the case when a hazardous waste already is in the container at the time the owner or operator first

accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in Chapter 2, Section 1(g)(ii) of these rules and regulations), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to Section 28(g) of this Chapter). ~~the subpart CC container standards~~) For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on ~~the~~ Item 20 of the Uniform Hazardous Waste Manifest in Appendix A to Chapter 8 of these rules and regulations (EPA forms 8700-22 and 8700-22A), as required under Section 5(b) of this Chapter. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(g)(iii)(D)(III) of this Chapter.

..(ii) (II) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(g)(iii)(D)(III) of this Chapter.

..(iii) (III) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

264.1086(c)(5) (E) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m³ or greater, which do not meet applicable DOT regulations as specified in Section 28(g)(vi) of this Chapter, are not managing hazardous waste in light material service.

264.1086(d) (iv) Container Level 2 standards.

264.1086(d)(1) (A) A container using Container Level 2 controls is one of the following:

..(i) (I) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in Section 28(g)(vi) of this Chapter.

- ..(ii) (II) A container that operates with no detectable organic emissions as defined in Chapter 1, Section 1(f)(i) of these rules and regulation and determined in accordance with the procedure specified in Section 28(g)(vii) of this Chapter.
- ..(iii) (III) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR part 60, appendix A, Method 27 in accordance with the procedure specified in Section 28(g)(viii) of this Chapter.
- 264.1086(d)(2) (B) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the Department considers to meet the requirements of this ~~paragraph~~ subparagraph include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.
- 264.1086(d)(3) (C) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:
- ..(i) (I) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:
- (1.) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.
- (2.) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.
- ..(ii) (II) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(1.) For the purpose of meeting the requirements of this Section, an empty container as defined in Chapter 2, Section 1(g)(ii) of these rules and regulations may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

(2.) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in Chapter 2, Section 1(g)(ii) of these rules and regulations, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

..(iii) (III) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

..(iv) (IV) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

..(v) (V) Opening of a safety device, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, is allowed at any time conditions require doing so to avoid an unsafe condition.

264.1086(d)(4) (D) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

..(i) (I) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in Chapter 2, Section 1(g)(ii) of these rules and regulations), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to Section 28(g) of this Chapter. For purposes of ~~the~~ this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in Appendix A of Chapter 8 of these rules and regulations (EPA Forms 8700-22 and 8700-22A), as required under Section 5(b) of this Chapter. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(g)(iv)(D)(III) of this Chapter.

..(ii) (II) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of Section 28(g)(iv)(D)(III) of this Chapter.

..(iii) (III) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

264.1086(e) (v) Container Level 3 standards.

264.1086(e)(1) (A) A container using Container Level 3 controls is one of the following:

..(i) (I) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of Section 28(g)(v)(B)(II) of this Chapter.

..(ii) (II) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of Section 28(g)(v)(B)(I) and (II) of this Chapter.

264.1086(e)(2) (B) The owner or operator shall meet the

following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

- ..(i) (I) The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" initially when the enclosure is first installed and, thereafter, annually.
- ..(ii) (II) The closed-vent system and control device shall be designed and operated in accordance with the requirements of Section 28(h) of this Chapter.
- 264.1086(e)(3) (C) Safety devices, as defined in Chapter 1, Section 1(f)(i) of these rules and regulations, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of Section 28(g)(v)(A) of this Chapter.
- 264.1086(e)(4) (D) Owners and operators using Container Level 3 controls in accordance with the provisions of Section 28 ~~plus this subpart~~ shall inspect and monitor the closed-vent systems and control devices as specified in Section 28(h) of this Chapter.
- 264.1086(e)(5) (E) Owners and operators that use Container Level 3 controls in accordance with the provisions of Section 28 ~~plus this subpart~~ shall prepare and maintain the records specified in Section 28(j)(iv) of this Chapter.
- 264.1086(e)(6) (F) Transfer of hazardous waste in or out of a container using Container Level 3 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the DEQ considers to meet the requirements of this paragraph include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.
- 264.1086(f) (vi) For the purpose of compliance with Section 28(g)(iii)(A)(I) or Section 28(g)(iv)(A)(I) of this Chapter, containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

- 264.1086(f)(1) (A) The container meets the applicable requirements specified in 49 CFR part 178--Specifications for Packaging or 49 CFR part 179--Specifications for Tank Cars.
- 264.1086(f)(2) (B) Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B--Exemptions; 49 CFR part 172--Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173--Shippers--General Requirements for Shipments and Packages; and 49 CFR part 180--Continuing Qualification and Maintenance of Packagings.
- 264.1086(f)(3) (C) For the purpose of complying with this Section, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in Section 28(g)(vi)(D) of this Chapter.
- 264.1086(f)(4) (D) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with Section 28 of this Chapter, ~~this subpart~~ an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).
- 264.1086(g) (vii) To determine compliance with the no detectable organic emissions requirement of Section 28(g)(iv)(A)(II) of this Chapter, the procedure specified in Section 28(d)(iv) of this Chapter shall be used.
- 264.1086(g)(1) (A) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: The interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.
- 264.1086(g)(2) (B) The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.
- 264.1086(h) (viii) Procedure for determining a container to be vapor-tight using Method 27 of 40 CFR part 60, appendix A for the purpose of complying with Section (g)(iv)(A)(III) of this Chapter.
- 264.1086(h)(1) (A) The test shall be performed in accordance with Method 27 of 40 CFR part 60, appendix A ^.
- 264.1086(h)(2) (B) A pressure measurement device shall be used that has a precision of ± 2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.
- 264.1086(h)(3) (C) If the test results determined by Method 27

indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

- 264.1087 (h) STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES.
- 264.1087(a) (i) This subsection applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of this Section.
- 264.1087(b) (ii) The closed-vent system shall meet the following requirements:
- 264.1087(b)(1) (A) The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in Section 28(h)(iii) of this Chapter.
- 264.1087(b)(2) (B) The closed-vent system shall be designed and operated in accordance with the requirements specified in Section 26(d)(xi) of this Chapter.
- 264.1087(b)(3) (C) In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in Section 28(h)(ii)(C)(I) of this Chapter or a seal or locking device as specified in Section 28(h)(ii)(C)(II) of this Chapter. For the purpose of complying with this subparagraph, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.
- ..(i) (I) If a flow indicator is used to comply with Section 28(h)(ii)(C) of this Chapter, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this subparagraph, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.
- ..(ii) (II) If a seal or locking device is used to comply with Section 28(h)(ii)(C) of this Chapter, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.
- 264.1087(b)(4) (D) The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in Section 26(d)(xii) of this Chapter.

- 264.1087(c) (iii) The control device shall meet the following requirements:
- 264.1087(c)(1) (A) The control device shall be one of the following devices:
- ..(i) (I) A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight;
 - ..(ii) (II) An enclosed combustion device designed and operated in accordance with the requirements of Section 26(d)(iii) of this Chapter; or
 - ..(iii) (III) A flare designed and operated in accordance with the requirements of Section 26(d)(iv) of this Chapter.
- 264.1087(c)(2) (B) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this subsection ~~Section~~ shall comply with the requirements specified in Section 28(h)(iii)(B)(I) through (VI) of this Chapter.
- ..(i) (I) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of Section 28(h)(iii)(A)(I), (II), or (III) of this Chapter, as applicable, shall not exceed 240 hours per year.
 - ..(ii) (II) The specifications and requirements in Section 28(h)(iii)(A)(I), (II), and (III) of this Chapter for control devices do not apply during periods of planned routine maintenance.
 - ..(iii) (III) The specifications and requirements in Section 28(h)(iii)(A)(I), (II), and (III) of this Chapter for control devices do not apply during a control device system malfunction.
 - ..(iv) (IV) The owner or operator shall demonstrate compliance with the requirements of Section 28(h)(iii)(B)(I) of this Chapter (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of Section 28(h)(iii)(A)(I), (II), or (III) of this Chapter, as applicable, shall not exceed 240 hours per year) by recording the information specified in Section 28(j)(v)(A)(V) of this Chapter.
 - ..(v) (V) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.
 - ..(vi) (VI) The owner or operator shall operate the closed-vent system such that gases, vapors, or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors,

and/or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

264.1087(c)(3) (C) The owner or operator using a carbon adsorption system to comply with Section 28(h)(iii)(A) of this Chapter shall operate and maintain the control device in accordance with the following requirements:

..(i) (I) Following the initial startup of the control device, all activated carbon in the control device shall be replaced with fresh carbon on a regular basis in accordance with the requirements of Section 26(d)(vii) or Section 26(d)(viii) of this Chapter.

..(ii) (II) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of Section 26(d)(xiv) of this Chapter, regardless of the average volatile organic concentration of the carbon.

264.1087(c)(4) (D) An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with Section 28(h)(iii)(A) of this Chapter shall operate and maintain the control device in accordance with the requirements of Section 26(d)(x) of this Chapter.

264.1087(c)(5) (E) The owner or operator shall demonstrate that a control device achieves the performance requirements of Section 28(h)(iii)(A) of this Chapter as follows:

..(i) (I) An owner or operator shall demonstrate using either a performance test as specified in Section 28(h)(iii)(E)(III) of this Chapter or a design analysis as specified in Section 28(h)(iii)(E)(IV) of this Chapter the performance of each control device except for the following:

(1.) A flare;

(2.) A boiler or process heater with a design heat input capacity of 44 megawatts or greater;

(3.) A boiler or process heater into which the vent stream is introduced with the primary fuel;

(4.) A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under Chapter 1, Section 1(h) through (j); Chapter 3, Section 2; Chapter 4; Chapter 6, Section 2; Chapter 7; and Chapter 11, Section 2, and has designed and operates the unit in accordance with the requirements of Chapter 12, Section 8 of these rules and regulations; or

(5.) A boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with the interim status requirements of 40 CFR part 266, subpart H. **See Chapter 12, Section 8(d) and Chapter 7, Section 1(g)(vii).**

- ..(ii) (II) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in Section 26(d)(v) of this Chapter.
- ..(iii) (III) For a performance test conducted to meet the requirements of Section 28(h)(iii)(E)(I) of this Chapter, the owner or operator shall use the test methods and procedures specified in Section 26(e)(iii)(A) through (D) of this Chapter.
- ..(iv) (IV) For a design analysis conducted to meet the requirements of Section 28(h)(iii)(E)(I) of this Chapter, the design analysis shall meet the requirements specified in Section 26(f)(ii)(D)(III) of this Chapter.
- ..(v) (V) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of Section 28(h)(iii)(A) of this Chapter based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.
- 264.1087(c)(6) (F) If the owner or operator and the Director Administrator do not agree on a demonstration of control device performance using a design analysis then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of Section 28(h)(iii)(E)(III) of this Chapter. The Director Administrator may choose to have an authorized representative observe the performance test.
- 264.1087(c)(7) (G) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in Section 26(d)(vi)(B) and Section 26(d)(xii) of this Chapter. The readings from each monitoring device required by Section 26(d)(vi)(B) of this Chapter shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this subsection.
- 264.1088 (i) INSPECTION AND MONITORING REQUIREMENTS.
- 264.1088(a) (i) The owner or operator shall inspect and monitor air emission control equipment used to comply with Section 28 ~~of this subpart~~ in accordance with the applicable requirements specified in Section 28(e) through Section 28(h) of this Chapter.
- 264.1088(b) (ii) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by Section 28(i)(i) of this Chapter. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under Section 2(f) of this Chapter.
- 264.1089 (j) RECORDKEEPING REQUIREMENTS.
- 264.1089(a) (i) Each owner or operator of a facility subject to requirements in this Section shall record and maintain the

information specified in Section 28(j)(ii) through (ix) of this Chapter, as applicable to the facility. Except for air emission control equipment design documentation and information required by Section 28(j)(ix) and (x) of this Chapter, records required by this subsection ~~[this Section]~~ shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by Section 28(j)(ix) and (x) of this Chapter shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in Section 28(e) through Section 28(h) of this Chapter in accordance with the conditions specified in Section 28(a)(e)(iv) or Section 28(a)(ii)(G) of this Chapter, respectively.

264.1089(b) (ii) The owner or operator of a tank using air emission controls in accordance with the requirements of Section 28(e) of this Chapter shall prepare and maintain records for the tank that include the following information:

264.1089(b)(1) (A) For each tank using air emission controls in accordance with the requirements of Section 28(e) of this Chapter, the owner or operator shall record:

..(i) (I) A tank identification number (or other unique identification description as selected by the owner or operator).

..(ii) (II) A record for each inspection required by Section 28(e) of this Chapter that includes the following information:

(1.) Date inspection was conducted.

(2.) For each defect detected during the inspection: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the requirements of Section 28(e) of this Chapter, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

264.1089(b)(2) (B) In addition to the information required by Section 28(j)(ii)(A) of this Chapter, the owner or operator shall record the following information, as applicable to the tank:

..(i) (I) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in Section 28(e)(iii) of this Chapter shall prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of Section 28(e)(iii) of this Chapter. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

..(ii) (II) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in Section 28(e)(v) of this Chapter shall prepare and maintain documentation describing the floating roof

design.

..(iii) (III) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in Section 28(e)(vi) of this Chapter shall prepare and maintain the following records:

(1.) Documentation describing the floating roof design and the dimensions of the tank.

(2.) Records for each seal gap inspection required by Section 28(e)(vi)(C) of this Chapter describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in Section 28(e)(vi)(A), the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

..(iv) (IV) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in Section 28(e)(ix) of this Chapter shall prepare and maintain the following records:

(1.) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B.

(2.) Records required for the closed-vent system and control device in accordance with the requirements of Section 28(j)(v) of this Chapter.

264.1089(c) (iii) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of Section 28(f) of this Chapter shall prepare and maintain records for the surface impoundment that include the following information:

264.1089(c)(1) (A) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).

264.1089(c)(2) (B) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in Section 28(f)(iii) of this Chapter.

264.1089(c)(3) (C) A record for each inspection required by Section 28(f) of this Chapter that includes the following information:

..(i) (I) Date inspection was conducted.

- ..(ii) (II) For each defect detected during the inspection the following information: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of Section 28(f)(vi) of this Chapter, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.
- 264.1089(c)(4) (D) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the records specified in Section 28(j)(v) of this Chapter.
- 264.1089(d) (iv) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of Section 28(g) of this Chapter shall prepare and maintain records that include the following information:
- 264.1089(d)(1) (A) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T--Criteria for and Verification of a Permanent or Temporary Total Enclosure" under 40 CFR 52.741, appendix B.
- 264.1089(d)(2) (B) Records required for the closed-vent system and control device in accordance with the requirements of Section 28(j)(v) of this Chapter.
- 264.1089(e) (v) The owner or operator using a closed-vent system and control device in accordance with the requirements of Section 28(h) of this Chapter shall prepare and maintain records that include the following information:
- 264.1089(e)(1) (A) Documentation for the closed-vent system and control device that includes:
- ..(i) (I) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in Section 28(j)(v)(A)(II) of this Chapter or by performance tests as specified in Section 28(j)(v)(A)(III) of this Chapter when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.
- ..(ii) (II) If a design analysis is used, then design documentation as specified in Section 26(f)(ii)(D) of this Chapter. The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with Section 26(f)(ii)(D)(III) of this Chapter and certification by the owner or operator that the control equipment meets the applicable specifications.
- ..(iii) (III) If performance tests are used, then a performance test plan as specified in Section 26(f)(ii)(C) of this

Chapter and all test results.

..(iv) (IV) Information as required by Section 26(f)(iii)(A) and Section 26(f)(iii)(B) of this Chapter, as applicable.

..(v) (V) An owner or operator shall record, on a semiannual basis, the information specified in Section 28(j)(v)(A)(V)(1.) and (2.) of this Chapter for those planned routine maintenance operations that would require the control device not to meet the requirements of Section 28(h)(iii)(A)(I), (II), or (III) of this Chapter, as applicable.

(1.) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(2.) A description of the planned routine maintenance that was performed for the control device during the previous 6-month period. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of Section 28(h)(iii)(A)(I), (II), or (III) of this Chapter, as applicable, due to planned routine maintenance.

..(vi) (VI) An owner or operator shall record the information specified in Section 28(j)(v)(A)(VI)(1.) through (3.) of this Chapter for those unexpected control device system malfunctions that would require the control device not to meet the requirements of Section 28(h)(iii)(A)(I), (II), or (III) of this Chapter, as applicable.

(1.) The occurrence and duration of each malfunction of the control device system.

(2.) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

(3.) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

..(vii) (VII) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with Section 28(h)(iii)(C)(II) of this Chapter.

264.1089(f) (vi) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of Section 28(c)(iii) of this Chapter shall prepare and maintain the following records, as applicable:

264.1089(f)(1) (A) For tanks, surface impoundments, and containers exempted under the hazardous waste organic concentration conditions specified in Section 28(c)(iii)(A) or Section 28(c)(iii)(B)(I) through (VI) of this Chapter, the owner or operator

shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of Section 28(d) of this Chapter.

264.1089(f)(2) (B) For tanks, surface impoundments, or containers exempted under the provisions of Section 28(c)(iii)(B)(VII) or Section 28(c)(iii)(B)(VIII) of this Chapter, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

264.1089(g) (vii) An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to Section 28(e)(xii) or Section 28(f)(vii) of this Chapter shall record in a log that is kept in the facility operating record the following information: The identification numbers for waste management units with covers that are designated as "unsafe to inspect and monitor," the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.

264.1089(h) (viii) The owner or operator of a facility that is subject to this ~~subpart~~ Section and to the control device standards in 40 CFR part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable subsections of this Section by documentation either pursuant to this Section ~~[subpart]~~, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this subsection.

264.1089(i) (ix) For each tank or container not using air emission controls specified in Section 28(e) through Section 28(h) of this Chapter in accordance with the conditions specified in Section 28(a)(iv) of this Chapter, the owner or operator shall record and maintain the following information:

264.1089(i)(1) (A) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in Section 28(a)(iv)(A) of this Chapter.

264.1089(i)(2) (B) A description of how the hazardous waste containing the organic peroxide compounds identified in Section 28(j)(ix)(A) of this Chapter are managed at the facility in tanks and containers. This description shall include:

..(i) (I) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: A facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

..(ii) (II) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: A facility identification number for the

container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

264.1089(i)(3) (C) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in Section 28(j)(ix)(A) of this Chapter in the tanks and containers as described in Section 28(j)(ix)(B) of this Chapter would create an undue safety hazard if the air emission controls, as required under Section 28(e) through Section 28(h) of this Chapter, are installed and operated on these waste management units. This explanation shall include the following information:

..(i) (I) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this Section, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

..(ii) (II) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under this Section, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

264.1089(j) (x) For each hazardous waste management unit not using air emission controls specified in Section 28(e) through Section 28(h) of this Chapter in accordance with the requirements of Section 28(a)(ii)(F) of this Chapter, the owner and operator shall record and maintain the following information:

264.1089(j)(1) (A) Certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63.

264.1089(j)(2) (B) Identification of the specific requirements codified under 40 CFR part 60, part 61, or part 63 with which the waste management unit is in compliance.

264.1090 (k) REPORTING REQUIREMENTS.

264.1090(a) (i) Each owner or operator managing hazardous waste in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of Section 28(c)(iii) of this Chapter shall report to the Director ~~Administrator~~ each occurrence

when hazardous waste is placed in the waste management unit in noncompliance with the conditions specified in Section 28(c)(ii)(A) or (B) of this Chapter, as applicable. Examples of such occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than 500 ppmw at the point of waste origination; or placing in the waste management unit a treated hazardous waste of which the organic content has been reduced by an organic destruction or removal process that fails to achieve the applicable conditions specified in Section 28(c)(iii)(B)(I) through (VI) of this Chapter. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence.

The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

264.1090(b) (ii) Each owner or operator using air emission controls on a tank in accordance with the requirements Section 28(e)(iii) of this Chapter shall report to the Director Administrator ~~{Regional Administrator}~~ each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions specified in Section 28(e)(ii) of this Chapter. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

264.1090(c) (iii) Each owner or operator using a control device in accordance with the requirements of Section 28(h) of this Chapter shall submit a semiannual written report to the Director Administrator ~~Administrator~~ except as provided for in Section 28(k)(iv) of this Chapter. The report shall describe each occurrence during the previous 6-month period when either:

264.1090(c)(1) (A) A control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in Section 26(f)(iii)(D) of this Chapter; or

264.1090(c)(2) (B) A flare is operated with visible emissions for 5 minutes or longer in a two-hour period, as defined in Section 26(d)(iv) of this Chapter.

The written report shall include the EPA identification number, facility name and address, and an explanation why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

264.1090(d) (iv) A report to the Director Administrator ~~Administrator~~ in accordance with the requirements of Section 28(k)(iii) of this Chapter is not required for a 6-month period during which all control devices subject to this Section are operated by the owner or

operator such that:

264.1090(d)(1) (A) During no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in Section 26(f)(iii)(D) of this Chapter; and

264.1090(d)(2) (B) No flare was operated with visible emissions for 5 minutes or longer in a two-hour period, as defined in Section 26(d)(iv) of this Chapter.

264.1091 (1) RESERVED.

264/Subpart DD Section 29. CONTAINMENT BUILDINGS

264.1100 (a) APPLICABILITY. The requirements of this Section apply to owners or operators who store or treat hazardous waste in units designed and operated under Section 29(b) of this Chapter. These provisions will become effective on February 18, 1993, although owner or operator may notify the Director of his or her intent to be bound by this Section at an earlier time. The owner or operator is not subject to the definition of land disposal in Chapter 1, Section 1(f)(i) of these rules and regulations and W.S. 35-11-503(d) provided that the unit:

264.1100(a) (i) Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

264.1100(b) (ii) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling equipment within the unit;

264.1100(c) (iii) If the unit is used to manage liquids, has:

264.1100(c)(1) (A) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

264.1100(c)(2) (B) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

264.1100(c)(3) (C) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time, unless the unit has been granted a variance from the secondary containment system requirements under Section 29(b)(ii)(D) of this Chapter;

- 264.1100(d) (iv) Has controls sufficient to prevent fugitive dust emissions to meet the no visible emission standard in Section 29 ~~29~~(b)(iii)(A)(IV) of this Chapter; and
- 264.1100(e) (v) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.
- 264.1101 (b) DESIGN AND OPERATING STANDARDS.
- 264.1101(a) (i) All containment buildings must comply with the following design standards:
- 264.1101(a)(1) (A) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.
- 264.1101(a)(2) (B) The floor and containment walls of the unit, including the secondary containment system if required under Section 29(b)(ii) of this Chapter, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The Department will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of Section 29(b)(i) of this Chapter. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:
- ... (i) (I) They provide an effective barrier against fugitive dust emissions under Section 29(b)(iii)(A)(IV) of this Chapter; and
- ... (ii) (II) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.
- 264.1101(a)(3) (C) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.
- 264.1101(a)(4) (D) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

- 264.1101(b) (ii) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:
- 264.1101(b)(1) (A) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface).
- 264.1101(b)(2) (B) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building:
- ... (i) (I) The primary barrier must be sloped to drain liquids to the associated collection system; and
- ... (ii) (II) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time.
- 264.1101(b)(3) (C) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.
- ... (i) (I) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:
- ... (i)(A) (1.) Constructed with a bottom slope of one (1) percent or more; and
- ... (i)(B) (2.) Constructed of a granular drainage material with a hydraulic conductivity of 1×10^{-2} cm/sec or more and a thickness of twelve (12) inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3×10^{-5} m²/sec or more.
- ... (ii) (II) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.
- ... (iii) (III) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of Section 9(d)(iv)(A) of this Chapter. In addition, the containment building must meet the requirements of Section 9(d)(ii) of this

Chapter and Sections 9(d)(iii)(A) and (B) of this Chapter to be considered an acceptable secondary containment system for a tank.)

264.1101(b)(4) (D) For existing units other than 90-day generator units, the Director may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of Section 28 of this Chapter. In making this demonstration, the owner or operator must:

...(i) (I) Provide written notice to the Director of their request by November 16, 1992. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

...(ii) (II) Respond to any comments from the Director on these plans within 30 days; and

...(iii) (III) Fulfill the terms of the revised plans, if such plans are approved by the Director.

264.1101(c) (iii) Owners or operators of all containment buildings must:

264.1101(c)(1) (A) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

...(i) (I) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

...(ii) (II) Maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;

...(iii) (III) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

...(iv) (IV) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see 40 CFR part 60, appendix A, Method 22-Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices (see 40 CFR 60 subpart 292 for guidance). This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

264.1101(c)(2) (B) Obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of Sections 29(b)(i) through (iii) of

this Chapter. For units placed into operation prior to February 18, 1993, this certification must be placed in the facility's operating record (on-site files for generators who are not formally required to have operating records) no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit.

264.1101(c)(3) (C) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, must repair the condition promptly, in accordance with the following procedures.

...(i) (I) Upon detection of a condition that has lead to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:

...(i)(A) (1.) Enter a record of the discovery in the facility operating record;

...(i)(B) (2.) Immediately remove the portion of the containment building affected by the condition from service;

...(i)(C) (3.) Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

...(i)(D) (4.) Within 7 days after the discovery of the condition, notify the Director of the condition, and within 14 working days, provide a written notice to the Director with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

...(ii) (II) The Director will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

...(iii) (III) Upon completing all repairs and cleanup the owner or operator must notify the Director in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with Section 29(b)(iii)(C)(I)(4.) of this Chapter.

264.1101(c)(4) (D) Inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

264.1101(d) (iv) For containment buildings that contain areas both with and without secondary containment, the owner or operator must:

264.1101(d)(1) (A) Design and operate each area in accordance with the requirements enumerated in Sections 29(b)(i) through (iii) of this Chapter;

- 264.1101(d)(2) (B) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and
- 264.1101(d)(3) (C) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.
- 264.1101(e) (v) Notwithstanding any other provision of this Section the Director may waive requirements for secondary containment for a permitted containment building where the owner operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.
- 264.1102 (c) CLOSURE AND POST-CLOSURE CARE.
- 264.1102(a) (i) At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.,) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Chapter 2, Section 1(c)(iv) of these rules and regulations applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in Section 7 of this Chapter and Chapter 5 of these rules and regulations.
- 264.1102(b) (ii) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in Section 29(c)(i) of this Chapter, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (Section 13(k) of this Chapter). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in Section 7 of this Chapter and Chapter 5 of these rules and regulations.
- 264.1103-1110 (d) - (k) RESERVED.

264/SubpartEE Section 30. HAZARDOUS WASTE MUNITIONS AND EXPLOSIVES STORAGE

264.1200 (a) APPLICABILITY. The requirements of Section 30 of this Chapter apply to owners or operators who store munitions and explosive hazardous wastes, except as Section 1(a) of this Chapter provides otherwise. (NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (Section 29 of this Chapter), tanks (Section 9 of this Chapter), or containers (Section 8 of this Chapter); See Chapter 12, Section 19(f) of these rules and regulations for storage of waste military munitions).

Sec. 264.1201 (b) DESIGN AND OPERATING STANDARDS.

264.1201(a) (i) Hazardous waste munitions and explosives storage units shall be designed and operated with containment systems, controls, and monitoring, that:

264.1201(a)(1) (A) Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off, to the soil, ground water, surface water, and atmosphere;

264.1201(a)(2) (B) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;

264.1201(a)(3) (C) For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;

264.1201(a)(4) (D) For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area); and

264.1201(a)(5) (E) Provide monitoring and inspection procedures that assure the controls and containment systems are working as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.

264.1201(b) (ii) Hazardous waste munitions and explosives stored under this Section may be stored in one of the following:

264.1201(b)(1) (A) Earth-covered magazines. Earth-covered magazines must be:

264.1201(b)(1)(i) (I) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;

264.1201(b)(1)(ii) (II) Designed and constructed:

264.1201(b)(1)(iii)(A) (1.) To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

264.1201(b)(1)(iii)(b) (2.) To provide working space for personnel and equipment in the unit; and

264.1201(b)(1)(iii)(C) (3.) To withstand movement activities that occur in the unit; and

264.1201(b)(1)(iii) (III) Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

264.1201(b)(2) (B) Above-ground magazines. Above-ground

magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

264.1201(b)(3) (C) Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

264.1201(c) (iii) Hazardous waste munitions and explosives shall be stored in accordance with a Standard Operating Procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of Section 2(e) of this Chapter, the preparedness and prevention procedures of Section 3 of this Chapter, and the contingency plan and emergency procedures requirements of Section 4 of this Chapter, then these procedures will be used to fulfill those requirements.

264.1201(d) (iv) Hazardous waste munitions and explosives shall be packaged to ensure safety in handling and storage.

264.1201(e) (v) Hazardous waste munitions and explosives shall be inventoried at least annually.

264.1201(f) (vi) Hazardous waste munitions and explosives and their storage units shall be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.

264.1202 (c) CLOSURE AND POST-CLOSURE CARE.

264.1202(a) (i) At closure of a magazine or unit which stored hazardous waste under this Section, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless Chapter 2, Section 1(c)(iv) of these rules and regulations applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units shall meet all of the requirements specified in Sections 6 and 7 of this Chapter, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.

264.1202(b) (ii) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in Section 30(c)(i) of this Chapter, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she shall close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (Section 13(k) of this Chapter).

Appendix A - Recordkeeping Instructions

The recordkeeping provisions of Chapter 10, Section 5(d) of these rules and regulations specify that an owner or operator must keep a written operating record at his facility. This appendix provides additional instructions for keeping portions of the operating record. See Chapter 10, Section 5(d)(ii) of these rules and regulations for additional recordkeeping requirements.

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility in the following manner:

Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

(1) A description by its common name and the EPA Hazardous Waste Number(s) from Chapter 2, Sections 1 through 4 of these rules and regulations which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Chapter 2, Section 4 of these rules and regulations, the description also must include the process that produced it (for example, solid filter cake from production of ----, EPA Hazardous Waste Number W051).

Each hazardous waste listed in Chapter 2, Section 4 of these rules and regulations, and each hazardous waste characteristic defined in Chapter 2, Section 3 of these rules and regulations, has a four-digit EPA Hazardous Waste Number assigned to it. This number must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA Hazardous Waste Numbers.

(2) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1;

Table 1

| Unit of Measure | Code ¹ |
|---------------------------|-------------------|
| Gallons..... | G |
| Gallons per Hour..... | E |
| Gallons per Day..... | U |
| Liters..... | L |
| Liters per Hour..... | H |
| Liters per Day..... | V |
| Short Tons per Hour..... | D |
| Metric Tons per Hour..... | W |
| Short Tons per Day..... | N |

| Unit of Measure | Code ¹ |
|--------------------------|-------------------|
| Metric Tons per Day..... | S |
| Pounds per Hour..... | J |
| Kilograms per Hour..... | R |
| Cubic Yards..... | Y |
| Cubic Meters..... | C |
| Acres..... | B |
| Acre-feet..... | A |
| Hectares..... | Q |
| Hectare-meter..... | F |
| Btu's per Hour..... | I |

FOOTNOTE: ¹Single digit symbols are used here for data processing purposes.

(3) The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

Table 2 -- Handling Codes for Treatment, Storage, and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

1. Storage

- S01 Container (barrel, drum, etc.)
- S02 Tank
- S03 Waste pile
- S04 Surface impoundment
- S05 Drip Pad
- S06 Containment Building (Storage)
- S99 Other Storage (specify)

2. Treatment

(a) Thermal Treatment-

- T06 Liquid injection incinerator
- T07 Rotary kiln incinerator
- T08 Fluidized bed incinerator
- T09 Multiple hearth incinerator
- T10 Infrared furnace incinerator
- T11 Molten salt destructor
- T12 Pyrolysis
- T13 Wet Air oxidation
- T14 Calcination
- T15 Microwave discharge
- T18 Other (specify)

(b) Chemical Treatment-

- T19 Absorption mound
- T20 Absorption field
- T21 Chemical fixation
- T22 Chemical oxidation
- T23 Chemical precipitation
- T24 Chemical reduction
- T25 Chlorination
- T26 Chlorinolysis
- T27 Cyanide destruction
- T28 Degradation
- T29 Detoxification
- T30 Ion exchange
- T31 Neutralization
- T32 Ozonation
- T33 Photolysis
- T34 Other (specify)

(c) Physical Treatment-

(1) Separation of components:

- T35 Centrifugation
- T36 Clarification
- T37 Coagulation
- T38 Decanting
- T39 Encapsulation
- T40 Filtration
- T41 Flocculation
- T42 Flotation
- T43 Foaming
- T44 Sedimentation
- T45 Thickening
- T46 Ultrafiltration
- T47 Other (specify)

(2) Removal of Specific Components:

- T48 Absorption-molecular sieve
- T49 Activated carbon
- T50 Blending
- T51 Catalysis
- T52 Crystallization
- T53 Dialysis
- T54 Distillation
- T55 Electrodialysis
- T56 Electrolysis
- T57 Evaporation
- T58 High gradient magnetic separation
- T59 Leaching
- T60 Liquid ion exchange
- T61 Liquid-liquid extraction
- T62 Reverse osmosis
- T63 Solvent recovery
- T64 Stripping
- T65 Sand filter
- T66 Other (specify)

(d) Biological Treatment

T67 Activated sludge
T68 Aerobic lagoon
T69 Aerobic tank
T70 Anaerobic tank
T71 Composting
T72 Septic tank
T73 Spray irrigation
T74 Thickening filter
T75 Tricking filter
T76 Waste stabilization pond
T77 Other (specify)
T78 [Reserved]
T79 [Reserved]

(e) Boilers and Industrial Furnaces

T80 Boiler
T81 Cement Kiln
T82 Lime Kiln
T83 Aggregate Kiln
T84 Phosphate Kiln
T85 Coke Oven
T86 Blast Furnace
T87 Smelting, Melting, or Refining Furnace
T88 Titanium Dioxide Chloride Process
Oxidation Reactor
T89 Methane Reforming Furnace
T90 Pulping Liquor Recovery Furnace
T91 Combustion Device Used in the Recovery of Sulfur Values

from Spent Sulfuric Acid

T92 Halogen Acid Furnaces
T93 Other Industrial Furnaces Listed in Chapter 1, Section 1(f)
of these rules and regulations [40 CFR 260.10] (specify)

(f) Other Treatment

T94 Containment Building (Treatment)

3. Disposal

D79 Underground injection
D80 Landfill
D81 Land treatment
D82 Ocean disposal
D83 Surface impoundment (to be closed as a landfill)
D99 Other Disposal (specify)

4. Miscellaneous (Chapter 10, Section 23 of these rules and regulations

[Subpart X])

X01 Open Burning/Open Detonation
X02 Mechanical Processing
X03 Thermal Unit
X04 Geologic Repository
X99 Other Chapter 10, Section 23 of these rules and regulations
[Subpart X] (specify)

Appendix B

Reserved.

Appendix C

Reserved.

Appendix D - Cochran's Approximation to the Behrens-Fisher Students' T-Test

Using all the available background data (n_b readings), calculate the background mean (X_b) and background variance (s_b^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean (X_m) and monitoring variance (s_m^2).

For any set of data ($X_1, X_2, . . . , X_n$) the mean is calculated by:

$$\bar{x} = \frac{x_1 + x_2 + \dots + x_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{(x_1 - \bar{x})^2 + (x_2 - \bar{x})^2 + \dots + (x_n - \bar{x})^2}{n-1}$$

where "n" denotes the number of observations in the set of data.

The t-test uses these data summary measures to calculate a t-statistic (t^*) and a comparison t-statistic (t_c). The t^* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{X_m - \bar{X}_b}{\sqrt{\frac{s_m^2}{n_m} + \frac{s_b^2}{n_b}}}$$

If the value of this t-statistic is negative then there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c), against which t^* will be compared, necessitates finding t_b and t_m from standard (one-tailed) tables where,

t_b = t-tables with ($n_b - 1$) degrees of freedom, at the 0.05 level of significance.

t_m = t-tables with ($n_m - 1$) degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_b and W_m are defined as:

$$W_b = \frac{S_b^2}{n_b} \quad \text{and} \quad W_m = \frac{S_m^2}{n_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_b t_b + W_m t_m}{W_b + W_m}$$

The t-statistic (t^*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If t^* is equal to or larger than t_c , then conclude that there most likely has been a significant increase in this specific parameter.

If t^* is less than t_c , then conclude that most likely there has not been a change in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t^* is equal to or larger than t_c , then conclude that there most likely has been a significant increase (if the initial t^* had been negative, this would imply a significant decrease). If t^* is less than t_c , then conclude that there most likely has been no change.

A further discussion of the test may be found in Statistical Methods (6th Edition, Section 4.14) by G. W. Snedecor and W. G. Cochran, or Principles and Procedures of Statistics (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.

Standard T-Tables 0.05 Level of Significance

| Degrees of freedom | t-values (one-tail) | t-values (two-tail) |
|--------------------|---------------------|---------------------|
| 1 | 6.314 | 12.706 |
| 2 | 2.920 | 4.303 |
| 3 | 2.353 | 3.182 |
| 4 | 2.132 | 2.776 |

Standard T-Tables 0.05 Level of Significance

| | | |
|----|-------|-------|
| 5 | 2.015 | 2.571 |
| 6 | 1.943 | 2.447 |
| 7 | 1.895 | 2.365 |
| 8 | 1.860 | 2.306 |
| 9 | 1.833 | 2.262 |
| 10 | 1.812 | 2.228 |
| 11 | 1.796 | 2.201 |
| 12 | 1.782 | 2.179 |
| 13 | 1.771 | 2.160 |
| 14 | 1.761 | 2.145 |
| 15 | 1.753 | 2.131 |
| 16 | 1.746 | 2.120 |
| 17 | 1.740 | 2.110 |
| 18 | 1.734 | 2.101 |
| 19 | 1.729 | 2.093 |
| 20 | 1.725 | 2.086 |
| 21 | 1.721 | 2.080 |
| 22 | 1.717 | 2.074 |
| 23 | 1.714 | 2.069 |
| 24 | 1.711 | 2.064 |
| 25 | 1.708 | 2.060 |
| 30 | 1.697 | 2.042 |
| 40 | 1.684 | 2.021 |

Adopted from Table III of "Statistical Tables for Biological, Agricultural, and Medical Research" (1947, R. A. Fisher and F. Yates).

Appendix E - Examples of Potentially Incompatible Waste

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A

- Acetylene sludge
- Alkaline caustic liquids
- Alkaline cleaner
- Alkaline corrosive liquids
- Alkaline corrosive battery fluid
- Caustic wastewater
- Lime sludge and other corrosive alkalies
- Lime wastewater
- Lime and water
- Spent caustic

Group 1-B

- Acid sludge
- Acid and water
- Battery acid
- Chemical cleaners
- Electrolyte, acid
- Etching acid liquid or solvent
- Pickling liquor and other corrosive acids
- Spent acid
- Spent mixed acid

Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2-A

Aluminum
Beryllium
Calcium
Lithium
Magnesium
Potassium
Sodium
Zinc powder
Other reactive metals and metal hydrides

Group 2-B

Any waste in Group 1-A or 1-B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A

Alcohols
Water

Group 3-B

Any concentrated waste in Groups 1-A or 1-B
Calcium
Lithium
Metal hydrides
Potassium
 SO_2Cl_2 , SOCl_2 , PCl_3 , CH_3SiCl_3
Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4-A

Alcohols
Aldehydes
Halogenated hydrocarbons
Nitrated hydrocarbons
Unsaturated hydrocarbons
Other reactive organic compounds and solvents

Group 4-B

Concentrated Group 1-A or 1-B wastes
Group 2-A wastes

Potential consequences: Fire, explosion, or violent reaction.

Group 5-A

Spent cyanide and sulfide solutions

Group 5-B

Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A

Chlorates
Chlorine
Chlorites
Chromic acid
Hypochlorites
Nitrates
Nitric acid, fuming
Perchlorates
Permanganates
Peroxides
Other strong oxidizers

Group 6-B

Acetic acid and other organic acids
Concentrated mineral acids
Group 2-A wastes
Group 4-A wastes
Other flammable and combustible wastes

Potential consequences: Fire, explosion, or violent reaction.

Source: "Law, Regulations, and Guidelines for Handling of Hazardous Waste." California Department of Health, February 1975.

**Appendix F - Political Jurisdictions¹ in Which Compliance With
Chapter 10, Section 2(i)(ii)(A) of these rules and regulations Must
Be Demonstrated**

FOOTNOTE: ¹These include counties, city-county consolidations, and independent cities. In the case of Alaska, the political jurisdictions are election districts, and, in the case of Hawaii, the political jurisdiction listed is the island of Hawaii.

Alaska: Aleutian Islands
 Anchorage
 Bethel
 Bristol Bay
 Cordova-Valdez
 Fairbanks-Fort Yukon
 Juneau
 Kenai-Cook Inlet
 Ketchikan-Prince of Wales
 Kodiak
 Lynn Canal-Icy Straits
 Palmer-Wasilla-Talkeena
 Seward
 Sitka
 Wade Hampton
 Wrangell Petersburg
 Yukon-Kuskokwim

Arizona: Cochise
 Graham
 Greenlee
 Yuma

California: All

Colorado: Archuleta
 Conejos
 Hinsdale
 Mineral
 Rio Grande
 Saguache

Hawaii: Hawaii

Idaho: Bannock
 Bear Lake
 Bingham
 Bonnevillle
 Caribou
 Cassia
 Clark
 Franklin
 Fremont
 Jefferson
 Madison
 Oneida
 Power
 Teton

Montana: Beaverhead
Broadwater
Cascade
Deer Lodge
Flathead
Gallatin
Granite
Jefferson
Lake
Lewis and Clark
Madison
Meagher
Missoula
Park
Powell
Sanders
Silver Bow
Stillwater
Sweet Grass
Teton
Wheatland

Nevada: All

New Mexico: Bernalillo
Catron
Grant
Hidalgo
Los Alamos
Rio Arriba
Sandoval
Sante Fe
Sierra
Socorro
Taos
Torrance
Valencia

Utah: Beaver
Box Elder
Cache
Carbon
Davis
Duchesne
Emery
Garfield
Iron
Juab
Millard
Morgan
Piute
Rich
Salt Lake
Sanpete
Sevier
Summit
Tooele
Utah

Wasatch
Washington
Wayne
Weber

Washington: Chelan
Clallam
Clark
Cowlitz
Douglas
Ferry
Grant
Grays Harbor
Jefferson
King
Kitsap
Kittitas
Lewis
Mason
Okanogan
Pacific
Pierce
San Juan Islands
Skagit
Skamania
Snohomish
Thurston
Wahkiakum
Whatcom
Yakima

Wyoming: Fremont
Lincoln
Park
Sublette
Teton
Uinta
Yellowstone National Park

Appendix G

Reserved.

Appendix H

Reserved.

Appendix I - Groundwater Monitoring List¹

| Common name ² | CAS RN ³ | Chemical abstracts service index name ⁴ | Suggested methods ⁵ | PQL (ΦG/l)
₆ |
|-------------------------------------|---------------------|---|--------------------------------|----------------------------|
| Acenaphthene | 83-32-9 | Acenaphthylene, 1,2-dihydro- | 8100 | 200 |
| | | | 8270 | 10 |
| Acenaphthylene | 208-96-8 | Acenaphthylene | 8100 | 200 |
| | | | 8270 | 10 |
| Acetone | 67-64-1 | 2-Propanone | 8240 | 100 |
| Acetophenone | 98-86-2 | Ethanone, 1-phenyl- | 8270 | 10 |
| Acetonitrile; Methyl cyanide | 75-05-8 | Acetonitrile | 8015 | 100 |
| 2-Acetylaminofluorene; 2-AAF | 53-96-3 | Acetamide, N-9H-fluoren-2-yl- | 8270 | 10 |
| Acrolein | 107-02-8 | 2-Propenal | 8030 | 5 |
| | | | 8240 | 5 |
| Acrylonitrile | 107-13-1 | 2-Propenenitrile | 8030 | 5 |
| | | | 8240 | 5 |
| Aldrin | 309-00-2 | 1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)- | 8080 | 0.05 |
| | | | 8270 | 10 |
| Allyl chloride | 107-05-1 | 1-Propene, 3-chloro- | 8010 | 5 |
| | | | 8240 | 100 |
| 4-Aminobiphenyl | 92-67-1 | [1,1'-Biphenyl]-4-amine | 8270 | 10 |
| Aniline | 62-53-3 | Benzenamine | 8270 | 10 |
| Anthracene | 120-12-7 | Anthracene | 8100 | 200 |
| | | | 8270 | 10 |
| Antimony | (Total) | Antimony | 6010 | 300 |
| | | | 7040 | 2,000 |
| | | | 7041 | 30 |
| Aramite | 140-57-8 | Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester | 8270 | 10 |
| Arsenic | (Total) | Arsenic | 6010 | 500 |
| | | | 7060 | 10 |
| | | | 7061 | 20 |
| Barium | (Total) | Barium | 6010 | 20 |
| | | | 7080 | 1,000 |
| Benzene | 71-43-2 | Benzene | 8020 | 2 |
| | | | 8240 | 5 |
| Benzo-[a]anthracene; Benzanthracene | 56-55-3 | Benz[a]anthracene | 8100 | 200 |
| | | | 8270 | 10 |

| | | | | |
|--|----------|--|----------------------|---------------|
| Benzo-[b]fluoranthene | 205-99-2 | Benz[e]acephenanthrylene | 8100
8270 | 200
10 |
| Benzo-[k]fluoranthene | 207-08-9 | Benzo[k]fluoranthene | 8100
8270 | 200
10 |
| Benzo[ghi]-perylene | 191-24-2 | Benzo[ghi]perylene | 8100
8270 | 200
10 |
| Benzo[a]pyrene | 50-32-8 | Benzo[a]pyrene | 8100
8270 | 200
10 |
| Benzyl alcohol | 100-51-6 | Benzenemethanol | 8270 | 20 |
| Beryllium | (Total) | Beryllium | 6010
7090
7091 | 3
50
2 |
| alpha-BHC | 319-84-6 | Cyclohexane, 1,2,3,4,5,6-
hexachloro-
, (1alpha,2alpha,3beta,4alpha,
5beta,6beta)- | 8080
8250 | 0.05
10 |
| beta-BHC | 319-85-7 | Cyclohexane, 1,2,3,4,5,6-
hexachloro-
, (1alpha,2beta,3alpha,4beta,5
alpha,6beta)- | 8080
8250 | 0.05
40 |
| delta-BHC | 319-86-8 | Cyclohexane, 1,2,3,4,5,6-
hexachloro-, (1alpha,2alpha,
3alpha,4beta,5alpha,6beta)- | 8080
8250 | 0.1
30 |
| gamma-BHC; Lindane | 58-89-9 | Cyclohexane, 1,2,3,4,5,6-
hexachloro-
, (1alpha,2alpha,3beta,4alpha,
5alpha,6beta)- | 8080
8250 | 0.05
10 |
| Bis(2-chloroethoxy)-
methane | 111-91-1 | Ethane, 1,1'-[methylenebis
(oxy)]bis[2-chloro- | 8270 | 10 |
| Bis(2-chloroethyl)- ether | 111-44-4 | Ethane, 1,1'-oxybis[2-chloro- | 8270 | 10 |
| Bis(2-chloro-1-
methylethyl) ether; 2,2'-
Di-chlorodiiso-propyl
ether | 108-60-1 | Propane, 2,2'-oxybis[1-
chloro- | 8010
8270 | 100
10 |
| Bis(2-ethylhexyl)
phthalate | 117-81-7 | 1,2-Benzenedicarboxylic acid,
bis(2-ethylhexyl)ester | 8060
8270 | 20
10 |
| Bromodi-chloromethane | 75-27-4 | Methane, bromodichloro- | 8010
8240 | 1
5 |
| Bromoform;
Tribromomethane | 75-25-2 | Methane, tribromo- | 8010
8240 | 2
5 |
| 4-Bromophenyl phenyl
ether | 101-55-3 | Benzene, 1-bromo-4-phenoxy- | 8270 | 10 |
| Butyl benzyl phthalate;
Benzyl butyl phthalate | 85-68-7 | 1,2-Benzenedicarboxylic acid,
butyl phenylmethyl ester | 8060
8270 | 5
10 |
| Cadmium | (Total) | Cadmium | 6010
7130
7131 | 40
50
1 |
| Carbon disulfide | 75-15-0 | Carbon disulfide | 8240 | 5 |
| Carbon tetrachloride | 56-23-5 | Methane, tetrachloro- | 8010
8240 | 1
5 |
| Chlordane | 57-74-9 | 4,7-Methano-1H-indene,
1,2,4,5,6,7,8,8-octachloro- | 8080
8250 | 0.1
10 |

| | | | | |
|--|---------------|---|----------------------|-----------------|
| | | 2,3,3a,4,7,7a-hexahydro- | | |
| p-Chloroaniline | 106-47-8 | Benzenamine, 4-chloro- | 8270 | 20 |
| Chlorobenzene | 108-90-7 | Benzene, chloro- | 8010
8020
8240 | 2
2
5 |
| Chlorobenzilate | 510-15-6 | Benzeneacetic acid, 4-chloro-
alpha-(4-chlorophenyl)-alpha-
hydroxy-, ethyl ester | 8270 | 10 |
| p-Chloro-m-cresol | 59-50-7 | Phenol, 4-chloro-3-methyl- | 8040
8270 | 5
20 |
| Chloroethane; Ethyl
chloride | 75-00-3 | Ethane, chloro- | 8010
8240 | 5
10 |
| Chloroform | 67-66-3 | Methane, trichloro- | 8010
8240 | 0.5
5 |
| 2-Chloronaphthalene | 91-58-7 | Naphthalene, 2-chloro- | 8120
8270 | 10
10 |
| 2-Chlorophenol | 95-57-8 | Phenol, 2-chloro- | 8040
8270 | 5
10 |
| 4-Chlorophenyl phenyl
ether | 7005-72-
3 | Benzene, 1-chloro-4-phenoxy- | 8270 | 10 |
| Chloroprene | 126-99-8 | 1,3-Butadiene, 2-chloro- | 8010
8240 | 50
5 |
| Chromium | (Total) | Chromium | 6010
7190
7191 | 70
500
10 |
| Chrysene | 218-01-9 | Chrysene | 8100
8270 | 200
10 |
| Cobalt | (Total) | Cobalt | 6010
7200
7201 | 70
500
10 |
| Copper | (Total) | Copper | 6010
7210 | 60
200 |
| m-Cresol | 108-39-4 | Phenol, 3-methyl- | 8270 | 10 |
| o-Cresol | 95-48-7 | Phenol, 2-methyl- | 8270 | 10 |
| p-Cresol | 106-44-5 | Phenol, 4-methyl- | | |
| Cyanide | 57-12-5 | Cyanide | 9010 | 40 |
| 2,4-D; 2,4-Dichloro-
phenoxyacetic acid | 94-75-7 | Acetic acid, (2,4-
dichlorophenoxy)- | 8150 | 10 |
| 4,4'-DDD | 72-54-8 | Benzene 1,1'-(2,2-
dichloroethylidene)bis[4-
chloro- | 8080
8270 | 0.1
10 |
| 4,4'-DDE | 72-55-9 | Benzene, 1,1'-
(dichloroethenylidene)bis[4-
chloro- | 8080
8270 | 0.05
10 |
| 4,4'-DDT | 50-29-3 | Benzene, 1,1'-(2,2,2-
trichloroethylidene)bis[4-
chloro- | 8080
8270 | 0.1
10 |
| Diallate | 2303-16-
4 | Carbamothioic acid, bis(1-
methylethyl)-, S- (2,3-
dichloro-2-propenyl) ester. | 8270 | 10 |

| | | | | |
|---|----------------|--|------------------------------|--------------------|
| Dibenz[a,h]-anthracene | 53-70-3 | Dibenz[a,h]anthracene | 8100
8270 | 200
10 |
| Dibenzofuran | 132-64-9 | Dibenzofuran | 8270 | 10 |
| Dibromochloro-methane;
Chlorodibromo-methane | 124-48-1 | Methane, dibromochloro- | 8010
8240 | 1
3 |
| 1,2-Dibromo-3-
chloropropane; DBCP | 96-12-8 | Propane, 1,2-dibromo-3-
chloro- | 8010
8240
8270 | 100
5
10 |
| 1,2-Dibromo-ethane;
Ethylene dibromide | 106-93-4 | Ethane, 1,2-dibromo- | 8010
8240 | 10
5 |
| Di-n-butyl phthalate | 84-74-2 | 1,2-Benzenedicarboxylic acid,
dibutyl ester | 8060
8270 | 5
10 |
| o-Dichlorobenzene | 95-50-1 | Benzene, 1,2-dichloro- | 8010
8020
8120
8270 | 2
5
10
10 |
| m-Dichlorobenzene | 541-73-1 | Benzene, 1,3-dichloro- | 8010
8020
8120
8270 | 5
5
10
10 |
| p-Dichlorobenzene | 106-46-7 | Benzene, 1,4-dichloro- | 8010
8020
8120
8270 | 2
5
15
10 |
| 3,3'-Dichlorobenzidine | 91-94-1 | [1,1'-Biphenyl]-4,4'-diamine,
3,3'-dichloro- | 8270 | 20 |
| trans-1,4-Dichloro-2-
butene | 110-57-6 | 2-Butene, 1,4-dichloro-, (E)- | 8240 | 5 |
| Dichlorodifluoro-methane | 75-71-8 | Methane, dichlorodifluoro- | 8010
8240 | 10
5 |
| 1,1-Dichloroethane | 75-34-3 | Ethane, 1,1-dichloro- | 8010
8240 | 1
5 |
| 1,2-Dichloroethane;
Ethylene dichloride | 107-06-2 | Ethane, 1,2-dichloro- | 8010
8240 | 0.5
5 |
| 1,1-Dichloroethylene;
Vinylidene chloride | 75-35-4 | Ethene, 1,1-dichloro- | 8010
8240 | 1
5 |
| trans-1,2-
Dichloroethylene | 156-60-5 | Ethene, 1,2-dichloro-, (E)- | 8010
8240 | 1
5 |
| 2,4-Dichlorophenol | 120-83-2 | Phenol, 2,4-dichloro- | 8040
8270 | 5
10 |
| 2,6-Dichlorophenol | 87-65-0 | Phenol, 2,6-dichloro- | 8270 | 10 |
| 1,2-Dichloropropane | 78-87-5 | Propane, 1,2-dichloro- | 8010
8240 | 0.5
5 |
| cis-1,3-Dichloropropene | 10061-
01-5 | 1-Propene, 1,3-dichloro-,
(Z)- | 8010
8240 | 20
5 |
| trans-1,3-Dichloropropene | 10061-
02-6 | 1-Propene, 1,3-dichloro-,
(E)- | 8010
8240 | 5
5 |
| Dieldrin | 60-57-1 | 2,7:3,6-Dimethanonaphth[2,3-
b]oxirene, 3,4,5,6,9,9-
hexachloro-1a,2,2a,3,6,6a,-
7,7a-octahydro-, | 8080
8270 | 0.05
10 |

| | | | | |
|---|------------|--|--------------|-----------|
| | | (1alpha,2beta,2alpha,3beta,6beta,6alpha,7beta,7alpha)- | | |
| Diethyl phthalate | 84-66-2 | 1,2-Benzenedicarboxylic acid, diethyl ester | 8060
8270 | 5
10 |
| O,O-Diethyl O-2-pyrazinyl phosphoro-thioate;
Thionazin | 297-97-2 | Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester | 8270 | 10 |
| Dimethoate | 60-51-5 | Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester | 8270 | 10 |
| p-(Dimethyl-amino)azobenzene | 60-11-7 | Benzenamine, N,N-dimethyl-4-(phenylazo)- | 8270 | 10 |
| 7,12-Dimethyl-benz[a]anthracene | 57-97-6 | Benz[a]anthracene, 7,12-dimethyl- | 8270 | 10 |
| 3,3'-Dimethylbenzidine | 119-93-7 | [1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl- | 8270 | 10 |
| alpha, alpha-Dimethylphenethylamine | 122-09-8 | Benzeneethanamine, alpha,alpha-dimethyl- | 8270 | 10 |
| 2,4-Dimethylphenol | 105-67-9 | Phenol, 2,4-dimethyl- | 8040
8270 | 5
10 |
| Dimethyl phthalate | 131-11-3 | 1,2-Benzenedicarboxylic acid, dimethyl ester | 8060
8270 | 5
10 |
| m-Dinitrobenzene | 99-65-0 | Benzene, 1,3-dinitro- | 8270 | 10 |
| 4,6-Dinitro-o-cresol | 534-52-1 | Phenol, 2-methyl-4,6-dinitro- | 8040
8270 | 150
50 |
| 2,4-Dinitrophenol | 51-28-5 | Phenol, 2,4-dinitro- | 8040
9270 | 150
50 |
| 2,4-Dinitrotoluene | 121-14-2 | Benzene, 1-methyl-2,4-dinitro- | 8090
8270 | 0.2
10 |
| 2,6-Dinitrotoluene | 606-20-2 | Benzene, 2-methyl-1,3-dinitro- | 8090
8270 | 0.1
10 |
| Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol | 88-85-7 | Phenol, 2-(1-methylpropyl)-4,6-dinitro- | 8150
8270 | 1
10 |
| Di-n-octyl phthalate | 117-84-0 | 1,2-Benzenedicarboxylic acid, dioctyl ester | 8060
8270 | 30
10 |
| 1,4-Dioxane | 123-91-1 | 1,4-Dioxane | 8015 | 150 |
| Diphenylamine | 122-39-4 | Benzenamine, N-phenyl- | 8270 | 10 |
| Disulfoton | 298-04-4 | Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester | 8140
8270 | 2
10 |
| Endosulfan I | 959-98-8 | 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3alpha,5abeta,6alpha,9alpha,9abeta)- | 8080
8250 | 0.1
10 |
| Endosulfan II | 33213-65-9 | 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, | 8080 | 0.05 |

| | | | | |
|---------------------------|-----------|---|----------------------|---------------|
| | | (3alpha,5alpha,6beta,9beta,9alpha)- | | |
| Endosulfan sulfate | 1031-07-8 | 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide | 8080
8270 | 0.5
10 |
| Endrin | 72-20-8 | 2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1alpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)- | 8080
8250 | 0.1
10 |
| Endrin aldehyde | 7421-93-4 | 1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1alpha,2beta,2abeta,4beta,4abeta,5beta,6abeta,6bbeta,7R*)- | 8080
8270 | 0.2
10 |
| Ethylbenzene | 100-41-4 | Benzene, ethyl- | 8020
8240 | 2
5 |
| Ethyl methacrylate | 97-63-2 | 2-Propenoic acid, 2-methyl-, ethyl ester | 8015
8240
8270 | 10
5
10 |
| Ethyl methanesulfonate | 62-50-0 | Methanesulfonic acid, ethyl ester | 8270 | 10 |
| Famphur | 52-85-7 | Phosphorothioic acid, O-[4-(dimethylamino)sulfonyl]phenyl]-O,O-dimethyl ester. | 8270 | 10 |
| Fluoranthene | 206-44-0 | Fluoranthene | 8100
8270 | 200
10 |
| Fluorene | 86-73-7 | 9H-Fluorene | 8100
8270 | 200
10 |
| Heptachlor | 76-44-8 | 4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- | 8080
8270 | 0.05
10 |
| Heptachlor epoxide | 1024-57-3 | 2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a,-hexahydro-, (1alpha,1bbeta,2alpha,5alpha,5abeta,6beta,6alpha) | 8080
8270 | 1
10 |
| Hexachloro-benzene | 118-74-1 | Benzene, hexachloro- | 8120
8270 | 0.5
10 |
| Hexachloro-butadiene | 87-68-3 | 1,3-Butadiene, 1,1,2,3,4,4-hexachloro- | 8120
8270 | 5
10 |
| Hexachlorocyclopentadiene | 77-47-4 | 1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro- | 8120
8270 | 5
10 |
| Hexachloroethane | 67-72-1 | Ethane, hexachloro- | 8120
8270 | 0.5
10 |
| Hexachlorophene | 70-30-4 | Phenol, 2,2'-methylenebis[3,4,6-trichloro- | 8270 | 10 |
| Hexachloropropene | 1888-71- | 1-Propene, 1,1,2,3,3,3- | 8270 | 10 |

| | | | | |
|--|----------|--|----------------------|-------------------|
| | 7 | hexachloro- | | |
| 2-Hexanone | 591-78-6 | 2-Hexanone | 8240 | 50 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | Indeno[1,2,3-cd]pyrene | 8100
8270 | 200
10 |
| Isobutyl alcohol | 78-83-1 | 1-Propanol, 2-methyl- | 8015 | 50 |
| Isodrin | 465-73-6 | 1,4,5,8-Dimethanonaphthalene,
1,2,3,4,10,10-hexachloro-
1,4,4a,5,8,8a hexahydro-
(1alpha,4alpha,4abeta,5beta,
8beta,8abeta)- | 8270 | 10 |
| Isophorone | 78-59-1 | 2-Cyclohexen-1-one, 3,5,5-
trimethyl- | 8090
8270 | 60
10 |
| Isosafrole | 120-58-1 | 1,3-Benzodioxole, 5-(1-
propenyl)- | 8270 | 10 |
| Kepone | 143-50-0 | 1,3,4-Metheno-2H-cyclobuta-
[cd]pentalen-2-one,
1,1a,3,3a,4,5,5,5a,5b,6-
decachlorooctahydro- | 8270 | 10 |
| Lead | (Total) | Lead | 6010
7420
7421 | 40
1,000
10 |
| Mercury | (Total) | Mercury | 7470 | 2 |
| Methacrylo-nitrile | 126-98-7 | 2-Propenenitrile, 2-methyl- | 8015
8240 | 5
5 |
| Methapyrilene | 91-80-5 | 1,2-Ethanediamine, N,N-
dimethyl-N'-2-pyridinyl-N'-
(2-thienylmethyl)- | 8270 | 10 |
| Methoxychlor | 72-43-5 | Benzene, 1,1'-
(2,2,2-trichloroethylidene)bi
s [4-methoxy- | 8080
8270 | 2
10 |
| Methyl bromide;
Bromomethane | 74-83-9 | Methane, bromo- | 8010
8240 | 20
10 |
| Methyl chloride;
Chloromethane | 74-87-3 | Methane, chloro- | 8010
8240 | 1
10 |
| 3-Methyl-cholanthrene | 56-49-5 | Benz[<i>j</i>]aceanthrylene, 1,2-
dihydro-3-methyl- | 8270 | 10 |
| Methylene bromide;
Dibromomethane | 74-95-3 | Methane, dibromo- | 8010
8240 | 15
5 |
| Methylene chloride;
Dichloromethane | 75-09-2 | Methane, dichloro- | 8010
8240 | 5
5 |
| Methyl ethyl ketone; MEK | 78-93-3 | 2-Butanone | 8015
8240 | 10
100 |
| Methyl iodide;
Iodomethane | 74-88-4 | Methane, iodo- | 8010
8240 | 40
5 |
| Methyl methacrylate | 80-62-6 | 2-Propenoic acid, 2-methyl-,
methyl ester | 8015
8240 | 2
5 |
| Methyl methanesulfonate | 66-27-3 | Methanesulfonic acid, methyl
ester | 8270 | 10 |
| 2-Methyl-naphthalene | 91-57-6 | Naphthalene, 2-methyl- | 8270 | 10 |
| Methyl parathion; | 298-00-0 | Phosphorothioic acid, O,O- | 8140 | 0.5 |

| | | | | |
|--|------------|---|--------------|-----------|
| Parathion methyl | | dimethyl O-(4-nitrophenyl) ester. | 8270 | 10 |
| 4-Methyl-2-pentanone;
Methyl isobutyl ketone | 108-10-1 | 2-Pentanone, 4-methyl- | 8015
8240 | 5
50 |
| Naphthalene | 91-20-3 | Naphthalene | 8100
8270 | 200
10 |
| 1,4-Naphthoquinone | 130-15-4 | 1,4-Naphthalenedione | 8270 | 10 |
| 1-Naphthylamine | 134-32-7 | 1-Naphthalenamine | 8270 | 10 |
| 2-Naphthylamine | 91-59-8 | 2-Naphthalenamine | 8270 | 10 |
| Nickel | (Total) | Nickel | 6010
7520 | 50
400 |
| o-Nitroaniline | 88-74-4 | Benzenamine, 2-nitro- | 8270 | 50 |
| m-Nitroaniline | 99-09-2 | Benzenamine, 3-nitro- | 8270 | 50 |
| p-Nitroaniline | 100-01-6 | Benzenamine, 4-nitro- | 8270 | 50 |
| Nitrobenzene | 98-95-3 | Benzene, nitro- | 8090
8270 | 40
10 |
| o-Nitrophenol | 88-75-5 | Phenol, 2-nitro- | 8040
8270 | 5
10 |
| p-Nitrophenol | 100-02-7 | Phenol, 4-nitro- | 8040
8270 | 10
50 |
| 4-Nitroquinoline 1-oxide | 56-57-5 | Quinoline, 4-nitro-, 1-oxide | 8270 | 10 |
| N-Nitrosodi-n-butylamine | 924-16-3 | 1-Butanamine, N-butyl-N-nitroso- | 8270 | 10 |
| N-Nitrosodiethyl-amine | 55-18-5 | Ethanamine, N-ethyl-N-nitroso- | 8270 | 10 |
| N-Nitrosodi-methylamine | 62-75-9 | Methanamine, N-methyl-N-nitroso- | 8270 | 10 |
| N-Nitrosodiphenyl-amine | 86-30-6 | Benzenamine, N-nitroso-N-phenyl- | 8270 | 10 |
| N-Nitrosodipropyl-amine;
Di-n-propylnitrosamine | 621-64-7 | 1-Propanamine, N-nitroso-N-propyl- | 8270 | 10 |
| N-Nitroso-methylethylamine | 10595-95-6 | Ethanamine, N-methyl-N-nitroso- | 8270 | 10 |
| N-Nitrosomorpholine | 59-89-2 | Morpholine, 4-nitroso- | 8270 | 10 |
| N-Nitrosopiperidine | 100-75-4 | Piperidine, 1-nitroso- | 8270 | 10 |
| N-Nitroso-pyrrolidine | 930-55-2 | Pyrrolidine, 1-nitroso- | 8270 | 10 |
| 5-Nitro-o-toluidine | 99-55-8 | Benzenamine, 2-methyl-5-nitro- | 8270 | 10 |
| Parathion | 56-38-2 | Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester | 8270 | 10 |
| Polychlorinated biphenyls; PCBs | See Note 7 | 1,1'-Biphenyl, chloro derivatives | 8080
8250 | 50
100 |
| Polychlorinated dibenzo-p-dioxins; PCDDs | See Note 8 | Dibenzo[b,e][1,4]dioxin, chloro derivatives | 8280 | 0.01 |
| Polychlorinated dibenzofurans; PCDFs | See Note 9 | Dibenzofuran, chloro derivatives | 8280 | 0.01 |

| | | | | |
|--|------------|---|----------------------|-----------------|
| Pentachloro-benzene | 608-93-5 | Benzene, pentachloro- | 8270 | 10 |
| Pentachloroethane | 76-01-7 | Ethane, pentachloro- | 8240
8270 | 5
10 |
| Pentachloro-nitrobenzene | 82-68-8 | Benzene, pentachloronitro- | 8270 | 10 |
| Pentachlorophenol | 87-86-5 | Phenol, pentachloro- | 8040
8270 | 5
50 |
| Phenacetin | 62-44-2 | Acetamide, N-(4-ethoxyphenyl) | 8270 | 10 |
| Phenanthrene | 85-01-8 | Phenanthrene | 8100
8270 | 200
10 |
| Phenol | 108-95-2 | Phenol | 8040
8270 | 1
10 |
| p-Phenylene-diamine | 106-50-3 | 1,4-Benzenediamine | 8270 | 10 |
| Phorate | 298-02-2 | Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester | 8140
8270 | 2
10 |
| 2-Picoline | 109-06-8 | Pyridine, 2-methyl- | 8240
8270 | 5
10 |
| Pronamide | 23950-58-5 | Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)- | 8270 | 10 |
| Propionitrile; Ethyl cyanide | 107-12-0 | Propanenitrile | 8015
8240 | 60
5 |
| Pyrene | 129-00-0 | Pyrene | 8100
8270 | 200
10 |
| Pyridine | 110-86-1 | Pyridine | 8240
8270 | 5
10 |
| Safrole | 94-59-7 | 1,3-Benzodioxole, 5-(2-propenyl)- | 8270 | 10 |
| Selenium | (Total) | Selenium | 6010
7740
7741 | 750
20
20 |
| Silver | (Total) | Silver | 6010
7760 | 70
100 |
| Silvex; 2,4,5-TP | 93-72-1 | Propanoic acid, 2-(2,4,5-trichlorophenoxy)- | 8150 | 2 |
| Styrene | 100-42-5 | Benzene, ethenyl- | 8020
8240 | 1
5 |
| Sulfide | 18496-25-8 | Sulfide | 9030 | 10,000 |
| 2,4,5-T; 2,4,5-Trichlorophenoxy-acetic acid | 93-76-5 | Acetic acid, (2,4,5-trichlorophenoxy)- | 8150 | 2 |
| 2,3,7,8-TCDD; 2,3,7,8-Tetra-chlorodibenzo-p-dioxin | 1746-01-6 | Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro- | 8280 | 0.005 |
| 1,2,4,5-Tetrachloro-benzene | 95-94-3 | Benzene, 1,2,4,5-tetrachloro- | 8270 | 10 |
| 1,1,1,2-Tetrachloroethane | 630-20-6 | Ethane, 1,1,1,2-tetrachloro- | 8010
8240 | 5
5 |

| | | | | |
|---|---------------|---|----------------------|--------------------|
| 1,1,2,2-Tetrachloroethane | 79-34-5 | Ethane, 1,1,2,2-tetrachloro- | 8010
8240 | 0.5
5 |
| Tetrachloro-ethylene;
Perchloroethylene;
Tetrachloro-ethene | 127-18-4 | Ethene, tetrachloro- | 8010
8240 | 0.5
5 |
| 2,3,4,6-Tetrachlorophenol | 58-90-2 | Phenol, 2,3,4,6-tetrachloro- | 8270 | 10 |
| Tetraethyl dithiopyro-
phosphate; Sulfotepp | 3689-24-
5 | Thiodiphosphoric acid
([(HO) ₂ P(S)] ₂ O), tetraethyl
ester | 8270 | 10 |
| Thallium | (Total) | Thallium | 6010
7840
7841 | 400
1,000
10 |
| Tin | (Total) | Tin | 7870 | 8,000 |
| Toluene | 108-88-3 | Benzene, methyl- | 8020
8240 | 2
5 |
| o-Toluidine | 95-53-4 | Benzenamine, 2-methyl- | 8270 | 10 |
| Toxaphene | 8001-35-
2 | Toxaphene | 8080
8250 | 2
10 |
| 1,2,4-Tri-chlorobenzene | 120-82-1 | Benzene, 1,2,4-trichloro- | 8270 | 10 |
| 1,1,1-Tri-chloroethane;
Methylchloroform | 71-55-6 | Ethane, 1,1,1-trichloro- | 8240 | 5 |
| 1,1,2-Trichloroethane | 79-00-5 | Ethane, 1,1,2-trichloro- | 8010
8240 | 0.2
5 |
| Trichloroethylene;
Trichloro-ethene. | 79-01-6 | Ethene, trichloro- | 8010
8240 | 1
5 |
| Trichloro-fluoromethane | 75-69-4 | Methane, trichlorofluoro- | 8010
8240 | 10
5 |
| 2,4,5-Trichlorophenol | 95-95-4 | Phenol, 2,4,5-trichloro- | 8270 | 10 |
| 2,4,6-Trichlorophenol | 88-06-2 | Phenol, 2,4,6-trichloro- | 8040
8270 | 5
10 |
| 1,2,3-Trichloropropane | 96-18-4 | Propane, 1,2,3-trichloro- | 8010
8240 | 10
5 |
| O,O,O-Triethyl
phosphorothioate | 126-68-1 | Phosphorothioic acid, O,O,O-
triethyl ester | 8270 | 10 |
| sym-Trinitrobenzene | 99-35-4 | Benzene, 1,3,5-trinitro- | 8270 | 10 |
| Vanadium | (Total) | Vanadium | 6010
7910
7911 | 80
2,000
40 |
| Vinyl acetate | 108-05-4 | Acetic acid, ethenyl ester | 8240 | 5 |
| Vinyl chloride | 75-01-4 | Ethene, chloro- | 8010
8240 | 2
10 |
| Xylene (total) | 1330-20-
7 | Benzene, dimethyl- | 8020
8240 | 5
5 |
| Zinc | (Total) | Zinc | 6010
7950 | 20
50 |

FOOTNOTE: ¹The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

FOOTNOTE: ²Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

FOOTNOTE: ³Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

FOOTNOTE: ⁴CAS index names are those used in the 9th Cumulative Index.

FOOTNOTE: ⁵Suggested methods refer to analytical procedure numbers used in EPA publication, SW-846, "Test Methods for Evaluating Solid Waste", Third Edition. Analytical details can be found in SW-846 and in documentation on file at the Agency. The packed column gas chromatography methods 8010, 8020, 8030, 8040, 8060, 8080, 8090, 8110, 8120, 8140, 8150, 8240, and 8250 were promulgated methods through Update IIB of SW-846 and, as of Update III, the Agency has replaced these methods with "capillary column GC methods", as the suggested methods.

FOOTNOTE: ⁶Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

FOOTNOTE: ⁷Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

FOOTNOTE: ⁸This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins. The PQL shown is an average value for PCDD congeners.

FOOTNOTE: ⁹This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans. The PQL shown is an average value for PCDF congeners.