CHAPTER 44 STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

4400 GENERAL

4400.1 This title shall establish minimum standards for the management of hazardous waste in the District of Columbia.

4400.2 The standards in this title shall apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste, except as specifically provided otherwise in this title or Chapter 41. Until the District makes a final administrative disposition of a permit, an owner or operator of an interim status facility shall comply with only the requirements specified in §4401. Certain provisions of this chapter also apply to generators and transporters as set forth in §§4202.7 and 4300.9.

4400.3 The use of underground injection, incinerators, land treatment, landfills, and surface impoundments for the storage, treatment or disposal of hazardous waste is prohibited in the District of Columbia. The specific requirements for the use of underground injection, incineration, land treatment, landfill, and surface impoundments for the management or disposal of hazardous waste outside the District may be found in 40 CFR parts 264 and 265 or in the analogous State regulations for the State where the hazardous waste activity will take place.

4400.4 These regulations shall apply to the treatment or storage of hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea.

4400.5 The requirements of this title shall 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 TSD facility permit by rule granted to the person under Chapter 46.

4400.6 The requirements of this chapter apply to the owner or operator of a POTW that treats, stores, or disposes of hazardous waste only to the extent they are included in a TSD facility permit by rule granted to the person under Chapter 46.

4400.7 The requirements of this chapter do not apply to:

(a) The owner or operator of a facility permitted, licensed, or registered by the Department 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 by §4101.1 through 4101.2 of this title;

(b) The owner or operator of a facility managing recyclable materials described in §4103.2 and 4103.3 of this title (except to the extent they are referred to in Chapter 49 or §§4502, 4503, 4505, or 4506);

(c) A generator accumulating waste on-site in compliance with §§4202.6 through 4202.8;

(d) A farmer disposing of waste pesticides from his or her own use in compliance with §4206.1; or

(e) The owner or operator of a totally enclosed treatment facility, as defined in §5400.1;

(f) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in §5400.1 of this title, provided that, if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in §5003.9, Table Treatment Standards for Hazardous Wastes) or reactive (D003) waste to remove the characteristic before land disposal, the owner/operator shall comply with the requirements set out in §4406.2;

(g) [Reserved];

(h) Except as provided in §4400.8, a person engaged in treatment or containment activities during immediate response to any of the following situations:

(1) A discharge of a hazardous waste;

(2) An imminent and substantial threat of a discharge of hazardous waste;

(3) A discharge of a material that, when discharged, becomes a hazardous waste; or

(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 §5400.1;

(i) Except as provided in §4300.9, a transporter storing manifested shipments of hazardous waste in containers meeting the requirements of §4202.1 at a transfer facility for a period of ten (10) days or less;

(j) The addition of absorbent material to waste in a container (as defined in §5400.1 of this title) or the addition of waste to absorbent material in a container, provided that these actions occur at the time waste is first placed in the container and these actions comply with §§4406.2, 4415.3, and 4415.4;

(k) Universal waste handlers and universal waste transporters (as defined in §5400.1) handling batteries, pesticides, thermostats and mercury containing lamps as described in §§4800 and 4806. These handlers are subject to regulation under Chapter 48, when handling these universal wastes. Except as specified at §4800.2 for pesticide waste, generators and transporters of universal waste that is not destined for recycling are subject to full regulation under Chapters 42 through 46 and Chapter 50.

4400.8 An owner or operator of a facility otherwise regulated by this chapter shall comply with all applicable requirements of §§4412 and 4413;

4400.9 Any person who is covered by §4400.7(h) 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 47 for those activities;

4400.10 In the case of an explosives or munitions emergency response, if a Federal, District 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 shall retain records for three (3) years identifying the dates of the response, the responsible persons responding, the type and description of material addressed, and its disposition;

4400.11 The requirements of this chapter apply to owners or operators of all facilities that treat, store, or dispose of hazardous wastes referred to in Chapter 50.

4400.12 Section 4512.9 of this title identifies when the requirements of this chapter apply to the storage of military munitions classified as solid waste under §§4512.3 through 4512.6. The treatment and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in Chapters 40 through 46 and Chapter 50.

4400.13 [RESERVED]

4400.14 Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to RCRA §7003 or §11 of HWMA (D.C. Code §6-710).

4401 REQUIREMENTS FOR INTERIM STATUS FACILITIES

4401.1 Any person who owns or operates an "existing HWM facility" or a facility in existence on the effective date of statutory or regulatory amendments that render the facility subject to the requirement to have a hazardous waste permit shall have interim status and shall be treated as having been issued a permit to the extent he or she has complied with the requirements of RCRA §3010 pertaining to notification of hazardous waste activity and the requirements of §§4601.1 through 4601.7 governing submission of the Part A application.

4401.2 A facility owner or operator who has fully complied with the requirements for interim status -- under §§4620.1 through 4620.3 -- shall comply with the regulations specified at 40 CFR part 265 instead of regulations in this chapter until the District makes a final administrative disposition of his or her permit application, except as provided under §4421 and as specified below. Submission of Part A and Part B of the permit application should follow the procedures outlined at §§4601 through 4612. The exceptions to 40 CFR part 265 include the following:

(a) The prohibitions of §§4400.3 and 4018 apply to all interim status facilities. Thermal Treatment described in 40 CFR 265, Subpart P is permitted in the District;

(b) As under the §4413.1 requirements for permitted facilities and units, post-closure care is required for all interim status facilities and units even if clean closure is achieved through removal and decontamination. Thus, the restriction of post-closure to the facilities and units specified at 40 CFR 265.110(b) is not applicable. Therefore, all interim status units are subject to post-closure care pursuant to 40 CFR 265.117(a)(1);

(c) Interim status facilities and units are subject to the closure requirements of §4413.19 rather than 40 CFR 265.117(b). Therefore, all hazardous waste shall be removed at closure. If this is not practicable after all reasonable efforts, then the facility owner or operator shall comply with the requirements of §4413.30;

(d) The post-closure financial assurance requirements apply to all interim status facilities and units not just those listed in 40 CFR 265.140(b)(1)-(3);

(e) Relative to 40 CFR 265.142(a)(2), the use of on-site disposal costs is prohibited because this type of disposal is prohibited in the District;

(f) Relative to 40 CFR 265.143(g) and 40 CFR 265.145(g), the same financial mechanism may be used for multiple facilities, provided the facilities are located in the District;

(g) Waste piles are subject to the requirements at §4417 instead of the 40 CFR 265, subpart L requirements;

(h) Generators of between one hundred (100) and one thousand (1,000) kg/mo that accumulate hazardous waste shall comply with the full tank requirements specified at §4202.7 instead of the reduced federal requirements located at 40 CFR 265.201;

(i) Relative to 40 CFR 265.1(c)(12), transfer facilities storing hazardous waste for a period of 10 days or less shall meet the requirements found at §§4300.9 and 4303 instead of at 40 CFR 262.30;

(j) Relative to 40 CFR 265.1(c)(14), universal wastes, including mercury-containing lamps as defined at §5400.1, except pesticides, shall be destined for recycling, for the waste to be subject to the reduced requirements of Chapter 48. Waste destined for disposal is subject to full regulation under Chapters 42 through 46 and Chapter 50;

(k) In 40 CFR 265.13 and 265.113 exclude all references to "non-hazardous waste". Units which allow the disposal of this waste under 40 CFR 265.113(d) are prohibited in the District pursuant to §4400.3;

(l) Relative to 40 CFR 265.18, the entire facility, rather than just the waste management portions, shall be 200 feet from a fault having movement in Holocene time;

(m) The requirements of 40 CFR 265.112(d)(1) shall apply only to waste piles, tanks and containers, and the requirements of 40 CFR 265.112(c)(2)(ii) shall not apply because landfills, land treatment and surface impoundments are prohibited pursuant to §4400.3;

(n) Deleted the last sentence of 40 CFR 265.119(a). No hazardous waste was allowed to be disposed of in the District prior to June 12, 1981. If any was disposed prior to that date, the exact location must be given;

(o) [Reserved]

(p) 40 CFR 265.141(f), 40 CFR 265.143(e)(1)(i)(B)&(D), 265.143(e)(1)(ii)(B)&(D), 265.143(e)(2), 265.145(e)(1)(i)(B)&(D), 265.145(e)(1)(ii)(B)&(D) and 265.145(e)(2) addressing current plugging and abandonment costs shall not apply because the District prohibits underground injection pursuant to §4000.3;

(q) The requirements of 40 CFR 265, Subpart CC shall apply only to tanks and containers because surface impoundments are prohibited in the District, and 40 CFR 265.1083(c)(2)(vii)&(viii) and 40 CFR 265.1090(f)(2) shall not apply because the tank systems address feed waste to units prohibited in the District;

(r) In addition to the container requirements found at 40 CFR Part 265, Subpart I, the owner or operator of an interim status facility shall comply with the containment system requirements found at §§4415.8 through 4415.11 and the closure requirements found at §4415.17;

(s) Relative to 40 CFR 265.1102, containment buildings are subject to the post-closure care and financial assurance requirements even if clean closure is achieved under 40 CFR 265.1102(a);

(t) Relative to 40 CFR 265.196(d)(1), the report submitted either under the Clean Water Act or pursuant to the D.C. Water Pollution Control Act does not substitute for the release report required to be submitted to the Director; and

(u) Any references within 40 CFR Part 265 to Federal provisions outside 40 CFR Part 265 shall be to the analogous District of Columbia provision. Appendix I to this chapter is a table listing each 40 CFR 265 provision containing a reference to a provision outside 40 CFR Part 265, the Federal provision referenced and the District of Columbia's analog to that referenced Federal provision.

4402 GENERAL FACILITY STANDARDS

4402.1 The regulations in §4402 apply to owners and operators of all hazardous waste facilities, except as provided in §§4400.1 through 4400.12 and in §4402.2.

4402.2 Section 4407.2 shall apply only to facilities subject to regulation under §§4415 through 4417 and §4425 of this chapter.

4402.3 Every facility owner or operator shall apply to the Department for an EPA identification number in accordance with the Department's notification procedures.

4402.4 The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source shall notify the Regional Administrator in writing at least four (4) 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.

4402.5 The owner or operator of a recovery facility that has arranged to receive hazardous waste subject to §4207 shall 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 St., SW., Washington, DC 20460; and to the competent authorities of all other concerned countries within three (3) working days of receipt of the shipment. The original of the signed tracking document shall be maintained at the facility for at least three (3) years.

4402.6 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) shall inform the generator in writing that he or she has the appropriate permit(s) for, and shall accept, the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

4402.7 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 shall notify the new owner or operator in writing of the requirements of this chapter and Chapter 46 of this title.

4402.8 An owner's or operator's failure to notify the new owner or operator of the requirements of this chapter in no way relieves the new owner or operator of his or her obligation to comply with all applicable requirements.

4403 GENERAL WASTE ANALYSIS

4403.1 Before an owner or operator treats, stores, or disposes of any hazardous wastes, he or she shall obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, the analysis shall contain all the information needed to treat, store, or dispose of the waste in accordance with this chapter and Chapter 50 of this title.

4403.2 The analysis may include data developed under Chapter 41 of this title, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

4403.3 The analysis shall be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis shall be repeated:

(a) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes has changed; and

(b) For off-site facilities, when the results of the inspection required in §4403.4 indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

4403.4 The owner or operator of an off-site facility shall 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.

4403.5 The owner or operator shall develop and follow a written waste analysis plan that describes the procedures that he or she will carry out to comply with §§4403.1 through 4403.4. He or she shall keep this plan at the facility. At a minimum, the plan shall specify:

(a) The parameters for which each hazardous waste ~~shall~~ be analyzed and the rationale for the selection of these parameters (that is, how analysis for these parameters will provide sufficient information on the waste's properties to comply with §§4403.1 through 4403.4);

(b) The test methods that will be used to test for these parameters;

(c) The sampling method that will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(1) One of the sampling methods described in appendix I of 40 CFR part 261, as incorporated by reference at §4112.1(a); or

(2) An equivalent sampling method;

(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;

(e) For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply;

(f) Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in §§4406, 4429.4, 4457.4, 4476, and §§5000.14 through 5000.18 of this title; and

(g) For owners and operators seeking an exemption to the air emission standards of §§4474 through 4482 in accordance with §4475:

(1) 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; and

(2) 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.

4403.6 For off-site facilities, the waste analysis plan required in §4403.5 shall also specify the procedures that 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 shall describe:

(a) The procedures that will be used to determine the identity of each movement of waste managed at the facility; and

(b) The sampling method that will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling.

4403.7 The owner or operator shall 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:

(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 that may enter the active portion of a facility; and

(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.

4403.8 Unless the owner or operator has made a successful demonstration under §§4403.7(a) and (b), a facility shall have:

(a) A twenty-four (24) hour surveillance system (for example, television monitoring or surveillance by guards or facility personnel) that continuously monitors and controls entry onto the active portion of the facility; or

(b) An artificial or natural barrier (for example, a fence in good repair or a fence combined with a cliff), that completely surrounds the active portion of the facility; and a means to control entry, at all times, through the gates or other entrances to the active portion of the facility (for example, an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

4403.9 Unless the owner or operator has made a successful demonstration under §§4403.7(a) and (b), a sign with the legend, "Danger -- Unauthorized Personnel Keep Out", shall 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 shall be written in English and in Spanish, and shall be legible from a distance of at least twenty-five (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.

4404 GENERAL INSPECTION REQUIREMENTS

4404.1 The owner or operator shall inspect his or her facility for malfunctions and deterioration, operator errors, and discharges that may be causing, or may lead to release of hazardous waste constituents to the environment, or a threat to human health. The owner or operator shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

4404.2 The owner or operator shall 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.

4404.3 The schedule, which shall be kept at the facility, shall identify the types of problems (such as, malfunctions or deterioration) that responsible persons are to look for during the inspection (for example, inoperative sump pump, leaking fitting, or eroding dike).

4404.4 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, shall be inspected daily when in use. At a minimum, the inspection schedule shall include the items and frequencies called for in §§4415.7, 4416.16 through 4416.24, 4416.28 through 4416.31, 4417.26 through 4417.29, 4425.3, 4428.10 through 4428.25, 4446, 4447, 4452, and 4476 through 4481, where applicable.

4404.5 The owner or operator shall remedy any deterioration or malfunction of equipment or structures that the inspection reveals on a schedule that 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 shall be taken immediately.

4404.6 The owner or operator shall record inspections in an inspection log or summary. He or she shall keep these records for at least three (3) years from the date of inspection. At a minimum, these records shall 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.

4405 PERSONNEL TRAINING

4405.1 Facility personnel shall 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. The owner or operator shall ensure that this program includes all the elements described in the document required under §4405.6(c).

4405.2 This program shall be directed by a person trained in hazardous waste management procedures, and shall include instruction that teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

4405.3 At a minimum, the training program shall 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:

(a) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(b) Key parameters for automatic waste feed cut-off systems;

(c) Communications or alarm systems;

(d) Response to fires or explosions;

(e) Response to ground-water contamination incidents; and

(f) Shutdown of operations.

4405.4 Facility personnel shall successfully complete the program required in §§4405.1 through 4405.3 within six (6) months after the effective date of these regulations or six (6) 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 shall not work in unsupervised positions until they have completed the training requirements of §§4405.1 through 4405.3.

4405.5 Facility personnel shall take part in an annual review of the initial training required in §§4405.1 through 4405.3.

4405.6 The owner or operator shall maintain the following documents and records at the facility:

(a) The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

(b) A written job description for each position listed under §4405.6(a). 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 shall include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

(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 §4405.6(a); and

(d) Records that document that the training or job experience required under §§4405.1 through 4405.3, 4405.4, and 4405.5 has been given to, and completed by, facility personnel.

4405.7 Training records on current personnel shall be kept until closure of the facility; training records on former employees shall be kept for at least three (3) years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

4406 GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTES

4406.1 The owner or operator shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste shall 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 (for example, from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator shall confine smoking and open flame to specially designated locations. "No Smoking" signs shall be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

4406.2 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, shall take precautions to prevent reactions that:

(a) Generate extreme heat or pressure, fire or explosions, or violent reactions;

(b) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;

(c) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

(d) Damage the structural integrity of the device or facility; and

(e) Through other like means threaten human health or the environment.

4406.3 When required to comply with §4406.1 or §4406.2, the owner or operator shall document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (for example, bench scale or pilot scale tests), waste analyses (as specified in §4403), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

4407 LOCATION STANDARDS

4407.1 New hazardous waste facilities shall not be located within sixty-one (61) meters (two hundred (200) feet) of a fault that has had displacement in Holocene time.

4407.2 A facility located in a one hundred (100) year floodplain shall be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a one hundred (100) year flood, unless the owner or operator can demonstrate to the Director that procedures are in effect that will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes shall not be vulnerable to flood waters or, for existing waste piles and miscellaneous units, no adverse effects on human health or the environment will result if washout occurs, considering:

(a) The volume and physical and chemical characteristics of the waste in the facility;

(b) The concentration of hazardous constituents that would potentially affect surface waters as a result of washout;

(c) The impact of the concentrations on the current or potential uses of and water quality standards established for the affected surface waters; and

(d) The impact of hazardous constituents on the sediments of affected surface waters or the soils of the one hundred (100) year floodplain that could result from washout.

4407.3 The placement of any noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine or cave is prohibited.

4408 CONSTRUCTION QUALITY ASSURANCE PROGRAM

4408.1 A construction quality assurance (CQA) program is required for all waste pile units that are required to comply with §§4417.6 through 4417.13. The program shall be designed to ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program shall be developed and implemented under the direction of a CQA officer who shall be a registered professional engineer.

4408.2 The CQA program shall address the following physical components, where applicable:

(a) Foundations;

(b) Dikes;

(c) Low-permeability soil liners;

(d) Geomembranes (flexible membrane liners);

(e) Leachate collection and removal systems and leak detection systems; and

(f) Final cover systems.

4408.3 The owner or operator of units subject to the CQA program under §§4408.1 through 4408.2 shall develop and implement a written CQA plan. The plan shall 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 shall include:

(a) Identification of applicable units, and a description of how they will be constructed;

(b) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications; and

(c) A description of inspection and sampling activities for all unit components identified in §4408.2, 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 shall 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 §§4411.10 through 4411.11.

4408.4 The CQA program shall include observations, inspections, tests, and measurements sufficient to ensure:

(a) Structural stability and integrity of all components of the unit identified in §4408.2;

(b) 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 (such as, pipes) according to design specifications; and

(c) Conformity of all materials used with design and other material specifications under §4417.4 through 4417.20.

4408.5 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 §4417.7(b) in the field. Compliance with the hydraulic conductivity requirements shall be verified by using in-situ testing on the constructed test fill. The Director may accept an alternative demonstration, instead of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of §4417.7(b) in the field.

4408.6 Waste shall not be received in a unit subject to §§4408.1 through 4408.6 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 §§4417.6 through 4417.12 or §4417.13; and the procedure in §§4613.13(b)(1)(A) and (B) of this title has been completed. Documentation supporting the CQA officer's certification shall be furnished to the Director upon request.

4409 PREPAREDNESS AND PREVENTION

4409.1 The regulations in §4409 apply to owners and operators of all hazardous waste facilities, except as §§4400.1 through 4400.12 provide otherwise.

4409.2 Facilities shall 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 that could threaten human health or the environment.

4409.3 All facilities shall be equipped with the following, unless the owners and operators can demonstrate to the Director that none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

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

(b) 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 District or local emergency response teams;

(c) 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

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

4409.4 All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, shall be tested and maintained as necessary to assure its proper operation in time of emergency.

4409.5 Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation shall 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 the device is not required under §4409.3.

4409.6 If there is ever just one (1) employee on the premises while the facility is operating, he or she shall 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 the device is not required under §4409.3.

4409.7 The owner or operator shall 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.

4409.8 through 4409.10 [RESERVED]

4409.11 The owner or operator shall 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:

(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;

(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;

(c) Agreements with District of Columbia emergency response teams, emergency response contractors, and equipment suppliers; and

(d) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses that could result from fires, explosions, or releases at the facility.

4409.12 Where District or local authorities decline to enter into these arrangements, the owner or operator shall document the refusal in the operating record.

4410 CONTINGENCY PLAN AND EMERGENCY PROCEDURES

4410.1 The regulations in §4410 shall apply to owners and operators of all hazardous waste facilities, except as §§4400.1 through 4400.12 provide otherwise.

4410.2 Each owner or operator shall have a contingency plan for his or her facility. The contingency plan shall 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.

4410.3 The provisions of the plan shall be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

4410.4 The contingency plan shall describe the actions facility personnel shall take to comply with §§4410.2 through 4410.3 and §§4410.14 through 4410.24 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.

4410.5 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 of Chapter V, 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.

4410.6 The plan shall describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and District and local emergency response teams to coordinate emergency services, pursuant to §§4409.11 through 4409.12.

4410.7 The plan shall list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see §4410.13), and this list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and others shall be listed in the order in which they will assume responsibility as alternates. For new facilities, this information shall be supplied to the Director at the time of certification, rather than at the time of permit application.

4410.8 The plan shall 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 shall be kept up to date. In addition, the plan shall include the location and a physical description of each item on the list, and a brief outline of its capabilities.

4410.9 The plan shall include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan shall 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).

4410.10 A copy of the contingency plan and all revisions to the plan shall be:

(a) Maintained at the facility; and

(b) Submitted to all local police departments, fire departments, hospitals, and District and local emergency response teams that may be called upon to provide emergency services.

4410.11 The contingency plan shall be submitted to the Director with part B of the permit application under Chapter 46 and, after modification or approval, shall become a condition of any permit issued.

4410.12 The contingency plan shall be reviewed, and immediately amended, if necessary, whenever:

(a) The facility permit is revised;

(b) The plan fails in an emergency;

(c) The facility changes 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;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

4410.13 At all times, there shall be at least one employee, either on the facility premises or on call (that is, 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 shall 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 shall have the authority to commit the resources needed to carry out the contingency plan.

4410.14 Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his or her designee when the emergency coordinator is on call) shall immediately:

(a) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

(b) Notify appropriate District or local agencies with designated response roles if their help is needed.

4410.15 Whenever there is a release, fire, or explosion, the emergency coordinator shall immediately identify the character, exact source, amount, and areal extent of any released materials. He or she may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

4410.16 Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment shall consider both direct and indirect effects of the release, fire, or explosion (such as, 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).

4410.17 If the emergency coordinator determines that the facility has had a release, fire, or explosion that could threaten human health, or the environment, outside the facility, he or she shall report his or her findings as follows:

(a) If his or her assessment indicates that evacuation of local areas may be advisable, he or she shall immediately notify appropriate local authorities. He or she shall be available to help appropriate officials decide whether local areas should be evacuated; and

(b) He or she shall immediately notify either the Mayor's Command Center at (202) 727-6161 or the National Response Center (using their twenty-four (24) hour toll free number 800/424-8802). The report shall include:

(1) Name and telephone number of reporter;

(2) Name and address of facility;

(3) Time and type of incident (for example, release, fire);

(4) Name and quantity of material(s) involved, to the extent known;

(5) The extent of injuries, if any; and

(6) The possible hazards to human health, or the environment, outside the facility.

4410.18 During an emergency, the emergency coordinator shall 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 shall include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

4410.19 If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator shall monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

4410.20 Immediately after an emergency, the emergency coordinator shall 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.

4410.21 Unless the owner or operator can demonstrate, in accordance with §4100.15 or §4100.16, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of Chapters 42, 43, and 44.

4410.22 The emergency coordinator shall ensure that, in the affected area(s) of the facility:

(a) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

(b) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

4410.23 The owner or operator shall notify the Director, and appropriate District and local authorities, that the facility is in compliance with §4410.22 before operations are resumed in the affected area(s) of the facility.

4410.24 The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within fifteen (15) days after the incident, he or she shall submit a written report on the incident to the Director. The report shall include:

(a) Name, address, and telephone number of the owner or operator;

(b) Name, address, and telephone number of the facility;

(c) Date, time, and type of incident (such as a fire or explosion);

(d) Name and quantity of material(s) involved;

(e) The extent of injuries, if any;

(f) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

(g) Estimated quantity and disposition of recovered material that resulted from the incident.

4411 MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING

4411.1 The regulations in §4411 apply to owners and operators of both on-site and off-site facilities, except as §§4400.1 through 4400.12 provide otherwise.

4411.2 Sections 4411.4 through 4411.9, and 4411.16 shall 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 §4512.7(a).

4411.3 Section 4411.11 only applies to permittees who treat, store, or dispose of hazardous wastes on-site where these wastes were generated.

4411.4 If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or his or her agent, shall:

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

(b) Note any significant discrepancies in the manifest (as defined in §4411.8) on each copy of the manifest;

(c) Immediately give the transporter at least one (1) copy of the signed manifest;

(d) Within thirty (30) days after the delivery, send a copy of the manifest to the generator; and

(e) Retain at the facility a copy of each manifest for at least three (3) years from the date of delivery.

4411.5 If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste that 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, shall:

(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;

(b) Note any significant discrepancies (as defined in §4411.8) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper;

(c) Immediately give the rail or water (bulk shipment) transporter at least one (1) copy of the manifest or shipping paper (if the manifest has not been received);

(d) Within thirty (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 thirty (30) days after delivery, the owner or operator, or his or her agent, shall send a copy of the shipping paper signed and dated to the generator; and

(e) Retain at the facility a copy of the manifest and shipping paper (if signed instead of the manifest at the time of delivery) for at least three (3) years from the date of delivery.

4411.6 Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility shall comply with the requirements of Chapter 42 of these regulations.

4411.7 Within three (3) working days of the receipt of a shipment subject to §4207, the owner or operator of the facility shall 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 St., SW., Washington, DC 20460, and to competent authorities of all other concerned countries. The original copy of the tracking document shall be maintained at the facility for at least three (3) years from the date of signature. A copy of the tracking document shall also be submitted to the Director.

4411.8 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. Significant discrepancies in quantity are:

(a) For bulk waste, variations greater than ten percent (10%) in weight; and

(b) For batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant discrepancies in type are obvious differences that 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.

4411.9 Upon discovering a significant discrepancy, the owner or operator shall attempt to reconcile the discrepancy with the waste generator or transporter (for example, with telephone conversations). If the discrepancy is not resolved within fifteen (15) days after receiving the waste, the owner or operator shall 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.

4411.10 The owner or operator shall keep a written operating record at his or her facility.

4411.11 The following information shall be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

(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 I of 40 CFR part 264, as incorporated by reference in §4496.1(a);

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

(c) Records and results of waste analyses and waste determinations performed as specified in §§4403.1 through 4403.6, 4406, 4429, 4457, 4476, 5000.11, and 5000.14 through 5000.17 of this title;

(d) Summary reports and details of all incidents that require implementing the contingency plan as specified in §4410.24;

(e) Records and results of inspections as required by §4404.6 (except these data need be kept only three (3) years);

(f) Monitoring, testing or analytical data, and corrective action where required by §§4408, 4412, 4416.16 through 4416.24, 4416.28 through 4416.31, 4417.21 through 4417.29, 4425.3, 4429.3 through 4429.6, 4430, 4457.4 through 4457.9, 4458, and 4475 through 4482;

(g) For off-site facilities, notices to generators as specified in §4402.6;

(h) All closure cost estimates under §§4414.3 through 4414.9, and, for disposal facilities, all post-closure cost estimates under §§4414.11 through 4414.14;

(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 he or she generates to the degree determined by the permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the permittee that minimizes the present and future threat to human health and the environment;

(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 §5000.12, or a petition pursuant to §5000.13, and the applicable notice required by a generator under §5000.14(b);

(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 §§5000.14 through 5000.17;

(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 §§5000.14 through 5000.17;

(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 §§5000.14 through 5000.17;

(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 §§5000.14 through 5000.17;

(o) For an off-site storage facility, a copy of the notice, and the certification required by the generator or the owner or operator under §§5000.14 through 5000.17; and

(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 §§5000.14 through 5000.17.

4411.12 All records, including plans, required under this chapter shall be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of the Department of Health who is duly designated by the Director.

4411.13 The retention period for all records required under this chapter is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Director.

4411.14 A copy of records of waste disposal locations and quantities under §4411.11(b) shall be submitted to the Director and local land authority upon closure of the facility.

4411.15 The owner or operator shall prepare and submit a single copy of a biennial report to the Director by March 1 of each year. The biennial report form provided by the Department shall be used for this report. The biennial report shall cover facility activities during the previous calendar year and shall include the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The calendar year covered by the report;

(c) 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 shall give the name and address of the foreign generator;

(d) A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information shall be listed by EPA identification number of each generator;

(e) The method of treatment, storage, or disposal for each hazardous waste;

(f) [Reserved]

(g) The most recent closure cost estimate under §4414.3 through 4414.9, and, for disposal facilities, the most recent post-closure cost estimate under §4414.11 through 4414.14;

(h) 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;

(i) 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 the information is available for the years prior to 1984; and

(j) The certification signed by the owner or operator of the facility or his or her authorized representative.

4411.16 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 §4301.5(b) of this title, and if the waste is not excluded from the manifest requirement by §4102, then the owner or operator shall prepare and submit a single copy of a report to the Director within fifteen (15) days after receiving the waste. The unmanifested waste report shall be submitted on EPA form 8700-13B. This report shall be designated 'Unmanifested Waste Report' and include the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The date the facility received the waste;

(c) The EPA identification number, name, and address of the generator and the transporter, if available;

(d) A description and the quantity of each unmanifested hazardous waste and facility received;

(e) The method of treatment, storage, or disposal for each hazardous waste;

(f) The certification signed by the owner or operator of the facility or his or her authorized representative; and

(g) A brief explanation of why the waste was unmanifested, if known.

4411.17 In addition to submitting the biennial reports and unmanifested waste reports described in §§4411.15 and 4411.16, the owner or operator shall also report to the Director:

(a) Releases, fires, and explosions as specified in §4410.24;

(b) Facility closures specified in §4413.15; and

(c) As otherwise required by §§4412, 4417, 4428 through 4459, and 4474 through 4483 of this chapter.

4412 RELEASES FROM SOLID WASTE MANAGEMENT UNITS

4412.1 Except as provided in §4412.3, the regulations in §4412 apply to owners or operators of facilities that treat, store, or dispose of hazardous waste. The owner or operator shall satisfy the requirements identified in §4412.2 for all wastes (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at which waste was placed in those units.

4412.2 All solid waste management units shall comply with the requirements in §§4412.57 through 4412.59. A waste pile that receives hazardous waste after July 26, 1982 (hereinafter referred to as a "regulated unit") shall comply with the requirements of §§4412.6 through 4412.56 instead of §§4412.57 through 4412.59 for purposes of detecting, characterizing and responding to releases to the uppermost aquifer. The financial responsibility requirements of §§4412.57 through 4412.59 apply to regulated units.

4412.3 The owner or operator's regulated unit or units are not subject to regulation for releases into the uppermost aquifer under §4412 if:

(a) The owner or operator is exempted under §§4400.1 through 4400.14; or

(b) He or she operates a unit that the Director finds:

(1) Is an engineered structure;

(2) Does not receive or contain liquid waste or waste containing free liquids;

(3) Is designed and operated to exclude liquid, precipitation, and other run-on and run-off;

(4) Has both inner and outer layers of containment enclosing the waste;

(5) Has a leak detection system built into each containment layer;

(6) The owner or operator shall 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

(7) To a reasonable degree of certainty, shall not allow hazardous constituents to migrate beyond the outer containment layer prior to the end of the post-closure care period; and

(c) 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 §§4413.17 through 4413.21. This demonstration shall be certified by a qualified 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 shall base any predictions made under §4412.3 on assumptions that maximize the rate of liquid migration; and

(d) He designs and operates a pile in compliance with §4417.3.

4412.4 The regulations under §4412 apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in §4412:

(a) Do not apply if all waste, waste residues, contaminated containment system components, and contaminated subsoils are removed or decontaminated at closure;

(b) Apply during the post-closure care period under §§4413.17 through 4413.21 if the owner or operator is conducting a detection monitoring program under §§4412.31 through 4412.40; or

(c) Apply during the compliance period under §§4412.17 through 4412.19 if the owner or operator is conducting a compliance monitoring program under §§4412.41 through 4412.55 or a corrective action program under §4412.56.

4412.5 Regulations in §4412 may apply to miscellaneous units when necessary to comply with §§4425.2 through 4425.4.

4412.6 Owners and operators subject to §4412 shall conduct a monitoring and response program as follows:

(a) Whenever hazardous constituents under §§4412.9 through 4412.11 from a regulated unit are detected at a compliance point under §§4412.15 through 4412.16, the owner or operator shall institute a compliance monitoring program under §§4412.41 through 4412.55. Detected is defined as statistically significant evidence of contamination as described in §4412.37;

(b) Whenever the ground-water protection standard under §4412.8 is exceeded, the owner or operator shall institute a corrective action program under §4412.56. Exceeded is defined as statistically significant evidence of increased contamination as described in §4412.47;

(c) Whenever hazardous constituents under §§4412.9 through 4412.11 from a regulated unit exceed concentration limits under §§4412.12 through 4412.14 in ground water between the compliance point under §§4412.15 through 4412.16 and the downgradient facility property boundary, the owner or operator shall institute a corrective action program under §4412.56; or

(d) In all other cases, the owner or operator shall institute a detection monitoring program under §§4412.31 through 4412.40.

4412.7 The Director shall 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 §4412.6 in the facility permit as may be necessary to protect human health and the environment and shall specify the circumstances under which each of the programs shall be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Director shall 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.

4412.8 The owner or operator shall comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents under §§4412.9 through 4412.11 detected in the ground water from a regulated unit do not exceed the concentration limits under §§4412.12 through 4412.14 in the uppermost aquifer underlying the waste management area beyond the point of compliance under §§4412.15 through 4412.16 during the compliance period under §§4412.17 through 4412.19. The Director shall establish this ground-water protection standard in the facility permit when hazardous constituents have been detected in the ground water.

4412.9 The Director shall specify in the facility permit the hazardous constituents to which the ground-water protection standard of §4412.8 applies. Hazardous constituents are constituents identified in Appendix II of Chapter 41 of this title 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 §4412.10.

4412.10 The Director shall exclude an appendix II of Chapter 41 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 shall consider the following:

(a) Potential adverse effects on ground-water quality, considering:

(1) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(2) The hydrogeological characteristics of the facility and surrounding land;

(3) The quantity of ground water and the direction of ground-water flow;

(4) The proximity and withdrawal rates of ground-water users;

(5) The current and future uses of ground water in the area;

(6) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(7) The potential for health risks caused by human exposure to waste constituents;

(8) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(9) The persistence and permanence of the potential adverse effects; and

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

(1) The volume and physical and chemical characteristics of the waste in the regulated unit;

(2) The hydrogeological characteristics of the facility and surrounding land;

(3) The quantity and quality of ground water, and the direction of ground-water flow;

(4) The patterns of rainfall in the region;

(5) The proximity of the regulated unit to surface waters;

(6) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(7) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality;

(8) The potential for health risks caused by human exposure to waste constituents;

(9) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(10) The persistence and permanence of the potential adverse effects.

4412.11 In making any determination under §4412.10 about the use of ground water in the area around the facility, the Director shall consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR §144.8.

4412.12 The Director shall specify in the facility permit concentration limits in the ground water for hazardous constituents established under §§4412.9 through 4412.11. The concentration of a hazardous constituent:

(a) Shall not exceed the background level of that constituent in the ground water at the time that limit is specified in the permit; or

(b) For any of the constituents listed in Table 1, shall 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 ($C_{10}H_{10}Cl_8$, 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: [1]Milligrams per liter.

(c) Shall not exceed an alternate limit established by the Director under §4412.13.

4412.13 The Director may 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 shall consider the following factors:

(a) Potential adverse effects on ground-water quality, considering:

(1) The physical and chemical characteristics of the waste in the regulated unit, including its potential for migration;

(2) The hydrogeological characteristics of the facility and surrounding land;

(3) The quantity of ground water and the direction of ground-water flow;

(4) The proximity and withdrawal rates of ground-water users;

(5) The current and future uses of ground water in the area;

(6) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality;

(7) The potential for health risks caused by human exposure to waste constituents;

(8) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(9) The persistence and permanence of the potential adverse effects; and

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

(1) The volume and physical and chemical characteristics of the waste in the regulated unit;

(2) The hydrogeological characteristics of the facility and surrounding land;

(3) The quantity and quality of ground water, and the direction of ground-water flow;

(4) The patterns of rainfall in the region;

(5) The proximity of the regulated unit to surface waters;

(6) The current and future uses of surface waters in the area and any water quality standards established for those surface waters;

(7) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality;

(8) The potential for health risks caused by human exposure to waste constituents;

(9) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(10) The persistence and permanence of the potential adverse effects.

4412.14 In making any determination under §4412.13 about the use of ground water in the area around the facility the Director shall consider any identification of underground sources of drinking water and exempted aquifers made under 40 CFR 144.8.

4412.15 The Director shall specify in the facility permit the point of compliance at which the ground-water protection standard of §4412.8 applies and at which monitoring shall 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.

4412.16 The waste management area is the limit projected in the horizontal plane of the area on which waste shall be placed during the active life of a regulated unit.

(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.

(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.

4412.17 The Director shall specify in the facility permit the compliance period during which the ground-water protection standard of §4412.8 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.)

4412.18 The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of §§4412.41 through 4412.55.

4412.19 If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in §4412.17, the compliance period is extended until the owner or operator can demonstrate that the ground-water protection standard of §4412.8 has not been exceeded for a period of three (3) consecutive years.

4412.20 The owner or operator shall comply with the requirements of 4412.21 through 4412.30 for any ground-water monitoring program developed to satisfy §§4412.31 through 4412.40, §§4412.41 through 4412.55, or §4412.56.

4412.21 The ground-water monitoring system shall consist of a sufficient number of wells, installed at appropriate locations and depths to yield ground-water samples from the uppermost aquifer that:

(a) Represent the quality of background water that has not been affected by leakage from a regulated unit;

(b) A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

(1) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient;

(2) Sampling at other wells shall provide an indication of background ground-water quality that is representative or more representative than that provided by the upgradient wells; and

(c) Represent the quality of ground water passing the point of compliance; and

(d) Allow for the detection of contamination when hazardous waste or hazardous constituents have migrated from the waste management area to the uppermost aquifer.

4412.22 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 shall 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.

4412.23 All monitoring wells shall be cased in a manner that maintains the integrity of the monitoring-well bore hole. This casing shall be screened or perforated and packed with gravel or sand, where necessary, to enable collection of ground-water samples. The annular space (that is, the space between the bore hole and well casing) above the sampling depth shall be sealed to prevent contamination of samples and the ground water.

4412.24 The ground-water monitoring program shall 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 shall include procedures and techniques for:

(a) Sample collection;

(b) Sample preservation and shipment;

(c) Analytical procedures; and

(d) Chain of custody control.

4412.25 The ground-water monitoring program shall include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents in ground-water samples.

4412.26 The ground-water monitoring program shall include a determination of the ground-water surface elevation each time ground water is sampled.

4412.27 In detection monitoring or where appropriate in compliance monitoring, data on each hazardous constituent specified in the permit shall 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 shall 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:

(a) A sequence of at least four (4) 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

(b) An alternate sampling procedure proposed by the owner or operator and approved by the Director.

4412.28 The owner or operator shall 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, shall 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 §4412.29(e), the pql shall be proposed by the owner or operator and approved by the Director. Use of any of the following statistical methods shall be protective of human health and the environment and shall comply with the performance standards outlined in §4412.29.

(a) A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent;

(b) An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method shall include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent;

(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;

(d) A control chart approach that gives control limits for each constituent;

(e) Another statistical test method submitted by the owner or operator and approved by the Director; and

4412.29 Any statistical method chosen under §4412.28 for specification in the unit permit shall comply with the following performance standards, as appropriate:

(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;

(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 one-hundredth (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 five-hundredths (0.05); however, the Type I error of no less than one-hundredth (0.01) for individual well comparisons shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts;

(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;

(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 shall 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 shall 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;

(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 §4412.28 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; and

(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.

4412.30 Ground-water monitoring data collected in accordance with §4412.27 including actual levels of constituents shall be maintained in the facility operating record. The Director shall specify in the permit when the data shall be submitted for review.

4412.31 An owner or operator required to establish a detection monitoring program under §4412 shall, at a minimum, discharge the responsibilities outlined in §§4412.32 through 4412.40.

4412.32 The owner or operator shall monitor for indicator parameters (for example, 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 shall specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:

(a) The types, quantities, and concentrations of constituents in wastes managed at the regulated unit;

(b) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the waste management area;

(c) The detectability of indicator parameters, waste constituents, and reaction products in ground water; and

(d) The concentrations or values and coefficients of variation of proposed monitoring parameters or constituents in the ground-water background.

4412.33 The owner or operator shall install a ground-water monitoring system at the compliance point as specified under §§4412.15 through 4412.16. The ground-water monitoring system shall comply with §§4412.21(c), 4412.22, and 4412.23.

4412.34 The owner or operator shall conduct a ground-water monitoring program for each chemical parameter and hazardous constituent specified in the permit pursuant to §4412.32 in accordance with §4412.27. The owner or operator shall maintain a record of ground-water

analytical data as measured and in a form necessary for the determination of statistical significance under §4412.28.

4412.35 The Director shall 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 §4412.32 in accordance with §4412.27. A sequence of at least four (4) samples from each well (background and compliance wells) shall be collected at least semi-annually during detection monitoring.

4412.36 The owner or operator shall determine the ground-water flow rate and direction in the uppermost aquifer at least annually.

4412.37 The owner or operator shall determine whether there is statistically significant evidence of contamination for any chemical parameter of hazardous constituent specified in the permit pursuant to §4412.32 at a frequency specified under §4412.35.

(a) In determining whether statistically significant evidence of contamination exists, the owner or operator shall use the method(s) specified in the permit under §4412.28. These method(s) shall compare data collected at the compliance point(s) to the background ground-water quality data.

(b) The owner or operator shall determine whether there is statistically significant evidence of contamination at each monitoring well as the compliance point within a reasonable period of time after completion of sampling. The Director shall 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.

4412.38 If the owner or operator determines pursuant to §4412.37 that there is statistically significant evidence of contamination for chemical parameters or hazardous constituents specified pursuant to §4412.32 at any monitoring well at the compliance point, he or she shall:

(a) Notify the Director of this finding in writing within seven (7) days. The notification shall indicate what chemical parameters or hazardous constituents have shown statistically significant evidence of contamination;

(b) Immediately sample the ground water in all monitoring wells and determine whether constituents in the list of appendix IX of 40 CFR part 264, as incorporated by reference at §4496.1(e), are present, and if so, in what concentration;

(c) For any 40 CFR part 264 appendix IX compounds, as incorporated by reference at §4496.1(e) found in the analysis pursuant to §4412.38(b), 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 shall form the basis for compliance monitoring. If the owner or operator does not resample for the compounds found pursuant to §4412.38(b), the hazardous constituents found during this initial analysis shall form the basis for compliance monitoring;

(d) Within ninety (90) days, submit to the Director an application for a permit modification to establish a compliance monitoring program meeting the requirements of §§4412.41 through 4412.55. The application shall include the following information:

(1) An identification of the concentration of any 40 CFR part 264 appendix IX, as incorporated by reference at §4496.1(e), constituent detected in the ground water at each monitoring well at the compliance point;

(2) Any proposed changes to the ground-water monitoring system at the facility necessary to meet the requirements of §§4412.41 through 4412.55;

(3) 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 §§4412.41 through 4412.55; and

(4) For each hazardous constituent detected at the compliance point, a proposed concentration limit under §§4412.12(a) or (b), or a notice of intent to seek an alternate concentration limit under §4412.13; and

(e) Within one hundred eighty (180) days, submit to the Director:

(1) All data necessary to justify an alternate concentration limit sought under §4412.13; and

(2) An engineering feasibility plan for a corrective action program necessary to meet the requirement of §4412.56, unless:

(A) All hazardous constituents identified under §4412.38(b) are listed in Table 1 of §4412.12 of this chapter and their concentrations do not exceed the respective values given in that Table; or

(B) The owner or operator has sought an alternate concentration limit under §4412.13 for every hazardous constituent identified under §4412.38(b).

4412.39 If the owner or operator determines, pursuant to §4412.37, that there is a statistically significant difference for chemical parameters or hazardous constituents specified pursuant to §4412.32 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 or operator may make a demonstration under this subsection in addition to, or instead of, submitting a permit modification application under §4412.38(d); however, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in §4412.38(d) unless the demonstration made under this subsection 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 this subsection, the owner or operator shall:

(a) Notify the Director in writing within seven (7) days of determining statistically significant evidence of contamination at the compliance point that he or she intends to make a demonstration under §4412.39;

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

(c) Within ninety (90) days, submit to the Director an application for a permit modification to make any appropriate changes to the detection monitoring program facility; and

(d) Continue to monitor in accordance with the detection monitoring program established under §§4412.31 through 4412.40.

4412.40 If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of §§4412.31 through 4412.39, he or she shall, within ninety (90) days, submit an application for a permit modification to make any appropriate changes to the program.

4412.41 An owner or operator required to establish a compliance monitoring program under §4412 shall, at a minimum, discharge the responsibilities outlined in §§4412.42 through 4412.55.

4412.42 The owner or operator shall monitor the ground water to determine whether regulated units are in compliance with the ground-water protection standard under §4412.8. The Director shall specify the ground-water protection standard in the facility permit, including:

(a) A list of the hazardous constituents identified under §§4412.9 through 4412.11;

(b) Concentration limits under §§4412.12 through 4412.14 for each of those hazardous constituents;

(c) The compliance point under §§4412.15 through 4412.16; and

(d) The compliance period under §§4412.17 through 4417.19.

4412.43 The owner or operator shall install a ground-water monitoring system at the compliance point as specified under §§4412.15 through 4412.16. The ground-water monitoring system shall comply with §§4412.21(c), 4412.22, and 4412.23.

4412.44 The Director shall specify the sampling procedures and statistical methods appropriate for the constituents and the facility, consistent with §§4412.27 and 4412.28.

4412.45 The owner or operator shall conduct a sampling program for each chemical parameter or hazardous constituent in accordance with §4412.27.

4412.46 The owner or operator shall record ground-water analytical data as measured and in a form necessary for determining statistical significance under §4412.28 for the compliance period of the facility.

4412.47 The owner or operator shall determine whether there is statistically significant evidence of increased contamination for any chemical parameter or hazardous constituent specified in the permit, pursuant to §4412.42, at a frequency specified under §4412.51.

4412.48 In determining whether statistically significant evidence of increased contamination exists, the owner or operator shall use the method(s) specified in the permit under §4412.28. The methods(s) shall compare data collected at the compliance point(s) to a concentration limit developed in accordance with §§4412.12 through 4412.14.

4412.49 The owner or operator shall determine whether there is statistically significant evidence of increased contamination at each monitoring well at the compliance point within a reasonable time period after completing sampling. The Director shall 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.

4412.50 The owner or operator shall determine the ground-water flow rate and direction in the uppermost aquifer at least annually.

4412.51 The Director shall specify the frequencies for collecting samples and conducting statistical tests to determine statistically significant evidence of increased contamination in accordance with §4412.27. A sequence of at least four (4) samples from each well (background and compliance wells) shall be collected at least semi-annually during the compliance period of the facility.

4412.52 The owner or operator shall analyze samples from all monitoring wells at the compliance point for all constituents contained in appendix IX of 40 CFR part 264, as incorporated by reference at §4496.1(e) 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 §4412.37. If the owner or operator finds 40 CFR part 264 appendix IX 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 40 CFR part 264 appendix IX analysis. If the second analysis confirms the presence of new constituents, the owner or operator shall report the concentration of these additional constituents to the Director within seven (7) 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 shall report the concentrations of these additional constituents to the Director within seven (7) days after completion of the initial analysis and add them to the monitoring list.

4412.53 If the owner or operator determines pursuant to §4412.47 that any concentration limits under §§4412.12 through 4412.14 are being exceeded at any monitoring well at the point of compliance he or she shall:

(a) Notify the Director of this finding in writing within seven (7) days. The notification shall indicate what concentration limits have been exceeded;

(b) Submit to the Director an application for a permit modification to establish a corrective action program meeting the requirements of §4412.56 within one hundred eighty (180) days, or within ninety (90) days if an engineering feasibility study has been previously submitted to the Director under §4412.38(e). The application shall at a minimum include the following information:

(1) A detailed description of corrective actions that will achieve compliance with the ground-water protection standard specified in the permit under §4412.42; and

(2) A plan for a ground-water monitoring program that will demonstrate the effectiveness of the corrective action. This ground-water monitoring program may be based on a compliance monitoring program developed to meet the requirements of §§4412.41 through 4412.55.

4412.54 If the owner or operator determines, pursuant to §§4412.47 through 4412.49, that the ground-water concentration limits under §§4412.41 through 4412.55 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 this subsection, the owner or operator shall:

(a) Notify the Director in writing within seven (7) days that he or she intends to make a demonstration under §4412.54;

(b) Within ninety (90) days, submit a report to the Director that 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;

(c) Within ninety (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

(d) Continue to monitor in accord with the compliance monitoring program established under §§4412.41 through 4412.55.

4412.55 If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of §§4412.41 through 4412.55, he or she shall, within ninety (90) days, submit an application for a permit modification to make any appropriate changes to the program.

4412.56 An owner or operator required to establish a corrective action program under §4412 shall, at a minimum, discharge the following responsibilities:

(a) The owner or operator shall take corrective action to ensure that regulated units are in compliance with the ground-water protection standard under §4412.8. The Director shall specify the ground-water protection standard in the facility permit, including:

(1) A list of the hazardous constituents identified under §§4412.9 through 4412.11;

(2) Concentration limits under §§4412.12 through 4412.14 for each of those hazardous constituents;

(3) The compliance point under §§4412.15 through 4412.16; and

(4) The compliance period under §§4412.17 through 4412.19;

(b) The owner or operator shall 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 shall specify the specific measures that shall be taken;

(c) The owner or operator shall begin corrective action within a reasonable time period after the ground-water protection standard is exceeded. The Director shall 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 shall specify when the corrective action will begin, and this requirement shall operate instead of §4412.54(b);

(d) In conjunction with a corrective action program, the owner or operator shall establish and implement a ground-water monitoring program to demonstrate the effectiveness of the corrective action program. This monitoring program may be based on the requirements for a compliance monitoring program under §§4412.41 through 4412.55 and shall be as effective as that program in determining compliance with the ground-water protection standard under §4412.8 and in determining the success of a corrective action program under §4412.56(e), where appropriate;

(e) In addition to the other requirements of §4412.56, the owner or operator shall conduct a corrective action program to remove or treat in place any hazardous constituents under §§4412.9 through 4412.11 that exceed concentration limits under §§4412.12 through 4412.14 in groundwater:

(1) Between the compliance point under §§4412.15 through 4412.16 and the downgradient property boundary;

(2) 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 this 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 these releases will be determined on a case-by-case basis;

(3) Corrective action measures under this paragraph shall be initiated and completed within a reasonable period of time considering the extent of contamination; and

(4) Corrective action measures under this paragraph may be terminated once the concentration of hazardous constituents under §§4412.9 through 4412.11 is reduced to levels below their respective concentration limits under §§4412.12 through 4412.14;

(f) The owner or operator shall 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 shall 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

§4412.56(d), that the ground-water protection standard of §4412.8 has not been exceeded for a period of three (3) consecutive years;

(g) The owner or operator shall report in writing to the Director on the effectiveness of the corrective action program. The owner or operator shall submit these reports semi-annually; and

(h) If the owner or operator determines that the corrective action program no longer satisfies the requirements of §4412.56, he or she shall, within ninety (90) days, submit an application for a permit modification to make any appropriate changes to the program.

4412.57 The owner or operator of a facility seeking a permit for the treatment, storage, or disposal of hazardous waste shall institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in that unit.

4412.58 Corrective action shall be specified in the permit in accordance with §§4412.57 through 4412.59 and §4421. The permit shall contain schedules of compliance for the corrective action (where the corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing the corrective action.

4412.59 The owner or operator shall 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 these 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 those releases will be determined on a case-by-case basis. Assurances of financial responsibility for the corrective action shall be provided.

4413 CLOSURE AND POST-CLOSURE

4413.1 Except as §§4400.1 through 4400.12 provide otherwise, §4413.1 shall apply to the owners and operators of all hazardous waste management facilities. The post-closure requirements found at §§4413.17 through 4413.30 apply to all units requiring a permit under Chapter 46, even if clean closure under §§4416.33 through 4416.35 and §§4417.35 through 4417.38 is attained.

4413.2 The owner or operator shall close the facility in a manner that:

(a) Minimizes the need for further maintenance;

(b) 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

(c) Complies with the closure requirements of §4413, including, but not limited to, the requirements of §§4415.17, 4416.33 through 4416.35, 4417.35 through 4417.38, 4425.2 through 4425.4, and 4486.

4413.3 The owner or operator of a hazardous waste management facility shall have a written closure plan. In addition, certain waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by §4417.37(a) to have contingent closure plans. The plan shall be submitted with the permit application, in accordance with §4603.3(m) of this title, and approved by the Director as part of the permit issuance procedures under Chapter 47 of this title. In accordance with §4615 of this title, the approved closure plan shall become a condition of any TSD facility permit.

4413.4 The Director's approval of the plan shall ensure that the approved closure plan is consistent with §§4413.2 through 4413.15 and the applicable requirements of §§4412, 4415.17, 4416.33 through 4416.35, 4417.35 through 4417.38, 4425.2, and 4486. Until final closure is completed and certified in accordance with §4413.15, a copy of the approved plan and all approved revisions shall be furnished to the Director upon request, including requests by mail.

4413.5 The plan shall identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan shall include, at least:

(a) A description of how each hazardous waste management unit at the facility shall be closed in accordance with §4413.2;

(b) A description of how final closure of the facility will be conducted in accordance with §4413.2. The description shall identify the maximum extent of the operations that will be unclosed during the active life of the facility;

(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;

(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;

(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;

(f) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule shall include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure

activities that will allow tracking of the progress of partial and final closure. (For example, in the case of a waste pile 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, if not all hazardous wastes can be removed, shall ~~be included~~.); and

(g) For facilities that use trust funds to establish financial assurance under §4414.10 or §4414.15 and that are expected to close before the expiration of the permit, an estimate of the expected year of final closure.

4413.6 The owner or operator shall 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 Chapters 46 and 47. The written notification or request shall include a copy of the amended closure plan for review or approval by the Director. Other provisions related to this written notification include:

(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 before the notification of partial or final closure of the facility;

(b) The owner or operator shall submit a written notification of or request for a permit modification to authorize a change in the approved closure plan whenever:

(1) Changes in operating plans or facility design affect the closure plan;

(2) There is a change in the expected year of closure, if applicable; or

(3) In conducting partial or final closure activities, unexpected events require a modification of the approved closure plan; and

(c) The owner or operator shall submit a written request for a permit modification including a copy of the amended closure plan for approval at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred that has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator shall request a permit modification no later than thirty (30) days after the unexpected event. An owner or operator of a waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under §4417.37(a), shall submit an amended closure plan to the Director no later than sixty (60) days ~~from~~ the date that the owner or operator or Director determines that the hazardous waste management unit shall be closed as a landfill, subject to the requirements of §4413.30, or no later than thirty (30) days from that date if the determination is made during partial or final closure. The Director shall approve, disapprove, or modify this amended plan in accordance with the procedures in Chapters 46 and 47. In accordance with §4615 of this title, the approved closure plan shall become a condition of any TSD facility permit issued; and

(d) The Director may request modifications to the plan under the conditions described in §4413.6(b). The owner or operator shall submit the modified plan within sixty (60) days of the Director's request, or within thirty (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 Chapters 46 and 47.

4413.7 The owner or operator shall notify the Director in writing at least sixty (60) days before the date on which he or she expects to begin closure of ~~a waste~~ pile, or final closure of a facility with such a unit. The owner or operator shall notify the Director in writing at least forty-five (45) days before the date on which he or she expects to begin final closure of a facility with only treatment or storage tanks or container storage units to be closed.

4413.8 The date when he or she "expects to begin closure" shall be either: no later than thirty (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 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.

4413.9 If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under RCRA §3008 or §§11 and 12 of HWMA (D.C. Code §§6-710 and 6-711), to cease receiving hazardous wastes or to close, then the requirements of §§4413.7 and 4413.8 do not apply. However, the owner or operator shall close the facility in accordance with the deadlines established in §§4413.11 through 4413.13.

4413.10 Nothing in §§4413.3 through 4413.9 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.

4413.11 Within ninety (90) days after receiving the final volume of hazardous wastes at a hazardous waste management unit or facility, the owner or operator shall treat and remove from the unit or facility 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) The activities required to comply with §4413.11 will, of necessity, take longer than ninety (90) days to complete; or

(b) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes;

(c) There is a reasonable likelihood that the owner or operator or another person will recommence operation of the hazardous waste management unit or the facility within one (1) year;

(d) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(e) The owner or operator 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.

4413.12 The owner or operator shall complete partial and final closure activities in accordance with the approved closure plan and within one hundred eighty ~~(180)~~ days after receiving the final volume of hazardous wastes 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) The partial or final closure activities shall, of necessity, take longer than one hundred eighty (180) days to complete; or

(b) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and

(c) There is reasonable likelihood that he or she or another person will recommence operation of the hazardous waste management unit or the facility within one (1) year; and

(d) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(e) 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.

4413.13 The demonstrations referred to in §§4413.11(a) through 4413.11(d) and §§4413.12(a) through 4413.12(d) shall be made as follows:

(a) The demonstrations in §§4413.11(a) through 4413.11(d) shall be made at least thirty (30) days before the expiration of the ninety (90) day period in §4413.11; and

(b) The demonstration in §§4413.12(a) through 4413.12(d) shall be made at least thirty (30) days before the expiration of the one hundred eighty (180) day period in §4413.12.

4413.14 During the partial and final closure periods, all contaminated equipment, structures and soils shall be properly disposed of or decontaminated unless otherwise specified in §§4416.33 through 4416.35 or §§4417.35 through 4417.38. 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 shall handle that waste in accordance with all applicable requirements of Chapter 42 of this title.

4413.15 Within sixty (60) days of completion of closure of each hazardous waste pile, and within sixty (60) days of the completion of final closure, the owner or operator shall 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 shall be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the independent registered

professional engineer's certification shall be furnished to the Director upon request until he or she releases the owner or operator from the financial assurance requirements for closure under §4414.10(i).

4413.16 No later than the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator shall 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 hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat shall 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, shall contain a note, prominently displayed, that states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable §4413 regulations.

4413.17 Post-closure care for each hazardous waste management unit subject to the requirements of §§4413.17 through 4413.29 shall begin after completion of closure of the unit and continue for thirty (30) years after that date and shall consist of at least the following:

(a) Monitoring and reporting in accordance with the requirements of §§4412, 4417, and 4425 of this chapter; and

(b) Maintenance and monitoring of waste containment systems in accordance with the requirements of §§4412, 4417, and 4425 of this chapter.

4413.18 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 Chapters 46 and 47:

(a) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if the Director finds that the reduced period is sufficient to protect human health and the environment (for example, 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

(b) Extend the post-closure care period applicable to the hazardous waste management unit or facility if the Director finds that the extended period is necessary to protect human health and the environment (for example, 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).

4413.19 No hazardous waste may remain on the property after final closure. However, if after all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment, the owner or operator finds that not all contaminated soil can be practicably removed, the owner or operator is also subject to §4413.30. In addition, the Director may require, at partial and final closure, continuation of any of the security requirements of §§4403.7 through 4403.9 during part or all of the post-closure period when:

(a) Hazardous wastes may remain exposed after completion of partial or final closure; or

(b) Access by the public or domestic livestock may pose a hazard to human health.

4413.20 If the requirements of §4413.30 must be met, post-closure use of property on or in which hazardous wastes remain after partial or final closure shall 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:

(a) Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

(b) Is necessary to reduce a threat to human health or the environment.

4413.21 All post-closure care activities shall be in accordance with the provisions of the approved post-closure plan as specified in §§4413.22 through 4413.25.

4413.22 The owner or operator of a hazardous waste disposal unit shall have a written post-closure plan. In addition, certain hazardous waste management units 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 §4417.37(b) to have contingent post-closure plans. Owners or operators of waste piles not otherwise required to prepare contingent post-closure plans under §4417.27(b) shall submit a post-closure plan to the Director within ninety (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 §§4413.17 through 4413.29. The plan shall be submitted with the permit application, in accordance with §4603.3(m), and approved by the Director as part of the permit issuance procedures under Chapter 47 of this title. In accordance with §4615, the approved post-closure plan shall become a condition of any TSD facility permit issued.

4413.23 For each hazardous waste management unit subject to the requirements of §§4413.22 through 4413.25, the post-closure plan shall identify the activities that shall be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

(a) A description of the planned monitoring activities and frequencies at which they shall be performed to comply with §§4412, 4417, and 4425 of this chapter during the post-closure care period; and

(b) A description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(1) The integrity of the cap and final cover or other containment systems in accordance with the requirements of §§4412, 4417, and 4425 of this chapter; and

(2) The function of the monitoring equipment in accordance with the requirements of §§4412, 4417, and 4425 of this chapter; and

(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.

4413.24 Until final closure of the facility, a copy of the approved post-closure plan shall be furnished to the Director upon request, including request by mail. After final closure has been certified, the person or office specified in §4413.23(c) shall keep the approved post-closure plan during the remainder of the post-closure period.

4413.25 The owner or operator shall 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 Chapters 46 and 47. The written notification or request shall include a copy of the amended post-closure plan for review or approval by the Director.

(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.

(b) The owner or operator shall submit a written notification of or request for a permit modification to authorize a change in the approved post-closure plan whenever:

(1) Changes in operating plans or facility design affect the approved post-closure plan;

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

(3) Events that occur during the active life of the facility, including partial and final closures, affect the approved post-closure plan; and

(c) The owner or operator shall submit a written request for a permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred that has affected the post-closure plan. An owner or operator of a waste pile who intends to remove all hazardous waste at closure and is not otherwise required to submit a contingent post-closure plan under §4417.37(b) shall submit a post-closure plan to the Director no later than ninety (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 §4413.30. The Director shall approve, disapprove or modify this plan in accordance with the procedures in Chapters 46 and 47. In accordance with §4615, the approved post-closure plan shall become a permit condition; and

(d) The Director may request modifications to the plan under the conditions described in §4413.25(b). The owner or operator shall submit the modified plan no later than sixty (60) days after the Director's request, or no later than ninety (90) days if the unit is a waste pile not previously required to have a contingent post-closure plan. Any modifications the Director requests shall be approved, disapproved, or modified in accordance with the procedures in Chapters 46 and 47.

4413.26 No later than sixty (60) days after certification of closure of each hazardous waste disposal unit, the owner or operator shall 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.

4413.27 Within sixty (60) days of certification of closure of the first hazardous waste disposal unit and within sixty (60) days of certification of closure of the last hazardous waste disposal unit, the owner or operator shall:

(a) Record, in accordance with District of Columbia law, a notation on the deed to the facility property -- or on some other instrument that is normally examined during title search -- that shall in perpetuity notify any potential purchaser of the property that:

(1) The land has been used to manage hazardous wastes;

(2) Its use is restricted under §4413; and

(3) 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 §§4413.16 and 4413.26 have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Director; and

(b) Submit a certification, signed by the owner or operator, that he or she has recorded the notation specified in §4413.27(a), including a copy of the document in which the notation has been placed, to the Director.

4413.28 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 shall request a modification to the post-closure permit in accordance with the applicable requirements in Chapters 46 and 47. The owner or operator shall demonstrate that the removal of hazardous wastes will satisfy the criteria of §4413.20. By removing hazardous waste, the owner or operator may become a generator of hazardous waste and shall manage it in accordance with all applicable requirements of this title. If he or she is granted a permit modification or otherwise granted approval to conduct the removal activities, the owner or operator may request that the Director approve either:

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

(b) The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

4413.29 No later than sixty (60) days after completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator shall 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 shall be signed by the owner or operator and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification shall 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 §4414.15(i).

4413.30 For a hazardous waste management unit that must close as a landfill, because it cannot meet the requirements of §4413.19, the following requirements apply:

(a) At final closure of a hazardous waste management unit, if, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment, the owner or operator or the Director finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall cover the unit with a final cover designed and constructed to do the following:

(1) Provide long-term minimization of migration of liquids through the closed unit;

(2) Function with minimum maintenance;

(3) Promote drainage and minimize erosion or abrasion of the cover;

(4) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(5) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present; and

(b) After final closure of a hazardous waste management unit, if, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment, the owner or operator or the Director finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall comply with all post-closure requirements contained in §§4413.17 through 4413.29, including maintenance and monitoring throughout the post-closure care period (specified in the permit under §§4413.17 through 4413.21). The owner or operator shall do the following:

(1) 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;

(2) Continue to operate the leachate collection and removal system until leachate is no longer detected;

(3) Maintain and monitor the ground-water monitoring system and comply with all other applicable requirements of §4412 of this chapter;

(4) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

(5) Protect and maintain surveyed benchmarks used in complying with §4413.16.

4414 FINANCIAL REQUIREMENTS

4414.1 The requirements of §§4414.3 through 4414.10, and 4414.17 through 4414.30 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in §§4400.1 through 4400.12.

4414.2 The District and the Federal government are exempt from the requirements of §4414.

4414.3 The owner or operator shall have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in §§4413.2 through 4413.15 and applicable closure requirements in §§4415.17, 4416.33 through 4416.35, 4417.35 through 4417.38, 4425.2 through 4425.4, and 4486. The estimate shall equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (See §4413.5).

4414.4 The closure cost estimate shall be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in §5400.1.) The use of costs for on-site disposal is prohibited.

4414.5 The closure cost estimate shall not incorporate any salvage value that may be realized with the sale of hazardous wastes, facility structures or equipment, land, or other assets associated with the facility at the time of partial or final closure.

4414.6 The owner or operator shall not incorporate a zero cost for hazardous wastes that might have economic value.

4414.7 During the active life of the facility, the owner or operator shall adjust the closure cost estimate for inflation within sixty (60) days before the anniversary date of the establishment of the financial instrument(s) used to comply with §4414.10. For owners and operators using the financial test or corporate guarantee, the closure cost estimate shall be updated for inflation within thirty (30) days after the close of the firm's fiscal year and before submission of updated information to the Director as specified in §4414.10(f)(4). The adjustment may be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business, as specified in §§4414.7(a) and (b). The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(a) The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

(b) Subsequent adjustments are made by mutliplying the latest adjusted closure cost estimate by the latest inflation factor.

4414.8 During the active life of the facility, the owner or operator shall revise the closure cost estimate no later than thirty (30) days after the Director has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate shall be adjusted for inflation as specified in §4414.7.

4414.9 The owner or operator shall keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with §§4414.3 through 4414.6 and §4414.8 and, when this estimate has been adjusted in accordance with §4414.7, the latest adjusted closure cost estimate.

4414.10 An owner or operator of each facility shall establish financial assurance for closure of the facility. He or she shall choose from the options as specified in §§4414.10(a) through 4414.10(f).

(a) An owner or operator may satisfy the requirements of §4414.10 by establishing a closure trust fund that conforms to the requirements of §4414.10(a) and submitting an originally signed duplicate of the trust agreement to the Director. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for treatment, storage, or disposal. The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal, State, or District agency.

(1) The wording of the trust agreement shall be identical to the wording specified in §4414.20(a), and the trust agreement shall be accompanied by a formal certification of acknowledgment (for example, see §4414.20(a). Schedule A of the trust agreement shall be updated within sixty (60) days after a change in the amount of the current closure cost estimate covered by the agreement.

(2) Payments into the trust fund shall be made annually by the owner or operator over the term of the initial TSD facility permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund shall be made as follows:

(A) For a new facility, the first payment shall be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment shall be submitted by the owner or operator to the Director before this initial receipt of hazardous waste. The first payment shall be at least equal to the current closure cost estimate, except as provided in §4414.10(g), divided by the number of years in the pay-in period. Subsequent payments shall be made no later than thirty (30) days after each anniversary date of the first payment. The amount of each subsequent payment shall be determined by this formula:

$$Next\ payment = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(B) If an owner or operator establishes a trust fund as specified in 40 CFR 265.143(a), subject to the restriction of §4401.2 and the value of that trust fund is less than the current closure cost estimate when a permit is awarded for the facility, the amount of the current closure cost estimate still to be paid into the trust fund shall be paid in over the pay-in period as defined in §4414.10(a)(2). Payments shall continue to be made no later than thirty (30) days after each anniversary date of the first payment made pursuant to 40 CFR Part 265 as restricted by §4401.2. The amount of each payment shall be determined by this formula:

$$\textit{Next payment} = \frac{CE - CV}{Y}$$

where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(3) The owner or operator may accelerate payments into the trust fund or he or she may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he or she shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in §4414.10(a)(2).

(4) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in §4414.10 or in 40 CFR 265.143 as restricted by §4401.2, his or her first payment shall be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of §4414.10(a) and 40 CFR §265.143(a) as restricted by §4401.2; as applicable.

(5) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within sixty (60) days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in §4414.10 to cover the difference.

(6) If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the Director for release of the amount in excess of the current closure cost estimate.

(7) If an owner or operator substitutes other financial assurance as specified in §4414.10 for all or part of the trust fund, he or she may submit a written request to the Director for release of the amount in excess of the current closure cost estimate covered by the trust fund.

(8) Within sixty (60) days after receiving a request from the owner or operator for release of funds as specified in §4414.10(a)(6) or §4414.10(a)(7), the Director shall instruct the trustee to release to the owner or operator the funds the Director specifies in writing.

(9) After beginning partial or final closure, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure expenditures by submitting itemized bills to the Director. The owner or operator may request reimbursements for partial closure only if sufficient funds remain in the trust fund to cover the maximum costs of closing the facility over its remaining operating life. Within sixty (60) days after receiving bills for partial or final closure activities, the Director shall instruct the trustee to make reimbursements in those amounts as the Director specifies in writing, if the Director determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the Director has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the trust fund, he or she may withhold reimbursements of the amounts he or she deems prudent until he or she determines, in accordance with §4414.10(i) that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the Director does not instruct the trustee to make reimbursements, he or she shall provide the owner or operator with a detailed written statement of reasons.

(10) The Director shall agree to termination of the trust when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.10; or

(B) The Director releases the owner or operator from the requirements of §4414.10 in accordance with §4414.10(i).

(b) An owner or operator may satisfy the requirements of §4414.10 by obtaining a surety bond that conforms to the requirements of §4414.10(b) and submitting the bond to the Director. An owner or operator of a new facility shall submit the bond to the Director at least sixty (60) days before the date the owner or operator first receives hazardous waste for treatment, storage, or disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(1) The wording of the surety bond shall be identical to the wording specified in §4414.20(b).

(2) The owner or operator who uses a surety bond to satisfy the requirements of §4414.10 shall also establish a standby trust fund. Under the terms of the bond, all payments made under a surety bond shall be deposited by the surety directly into the standby trust fund in accordance with instructions from the Director. This standby trust fund shall meet the requirements specified in §§4414.10(a) through 4414.10(a)(10)(B), except that:

(A) An originally signed duplicate of the trust agreement shall be submitted to the Director with the surety bond; and

(B) Until the standby trust fund is funded pursuant to the requirements of §4414.10, the following are not required by these regulations:

(i) Payments into the trust fund as specified in §§4414.10(a) through 4414.10(a)(10)(B);

(ii) Updating of Schedule A of the trust agreement (See §4414.20(a)) to show current closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(3) The bond shall guarantee that the owner or operator will:

(A) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(B) Fund the standby trust fund in an amount equal to the penal sum within fifteen (15) days after an administrative order to begin final closure issued by the Director becomes final, or within fifteen (15) days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(C) Provide alternate financial assurance as specified in §4414.10, and obtain the Director's written approval of the assurance provided, within ninety (90) days after receipt by both the owner or operator and the Director of a notice of cancellation of the bond from the surety.

(4) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(5) The penal sum of the bond shall be in an amount at least equal to the current closure cost estimate, except as provided in §4414.10(g).

(6) Whenever the current closure cost estimate increases to an amount greater then the penal sum, the owner or operator, within sixty (60) days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.10 to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Director.

(7) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Director. The surety shall not cancel during the one hundred twenty (120) days beginning on the

date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts.

(8) The owner or operator may cancel the bond if the Director has given prior written consent based on his or her receipt of evidence of alternate financial assurance as specified in §4414.10.

(c) An owner or operator may satisfy the requirements of §4414.10 by obtaining a surety bond that conforms to the requirements of §4414.10(c) and submitting the bond to the Director. An owner or operator of a new facility shall submit the bond to the Director at least sixty (60) days before the date the owner or operator first receives hazardous waste for treatment, storage, or disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(1) The wording of the surety bond shall be identical to the wording specified in §4414.20(c).

(2) The owner or operator who uses a surety bond to satisfy the requirements of §4414.10 shall also establish a standby trust fund. Under the terms of the bond, the surety shall deposit all payments made under the surety bond directly into the standby trust fund in accordance with instructions from the Director. This standby trust shall meet the requirements specified in §§4414.10(a) through 4414.10(a)(10)(B), except that:

(A) An originally signed duplicate of the trust agreement shall be submitted to the Director with the surety bond; and

(B) Unless the standby trust fund is funded pursuant to the requirements of §4414.10, the following are not required by these regulations:

(i) Payments into the trust fund as specified in §§4414.10(a) through 4414.10(a)(10)(B);

(ii) Updating of Schedule A of the trust agreement (see §4414.20(a)) to show current closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(3) The bond shall guarantee that the owner or operator will:

(A) Perform final closure in accordance with the closure plan and other requirements of the permit for the facility whenever required to do so; or

(B) Provide alternate financial assurance as specified in §4414.10, and obtain the Director's written approval of the assurance provided, within ninety (90) days

after receipt by both the owner or operator and the Director of a notice of cancellation of the bond from the surety.

(4) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a final administrative determination pursuant to §12 of HWMA (D.C. Code §6-711, 1995 Repl. Vol.) or RCRA §3008 that the owner or operator has failed to perform final closure in accordance with the approved closure plan and other permit requirements when required to do so, under the terms of the bond the surety shall perform final closure as guaranteed by the bond or shall deposit the amount of the penal sum into the standby trust fund.

(5) The penal sum of the bond shall be in an amount at least equal to the current closure cost estimate.

(6) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within sixty (60) days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.10. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Director.

(7) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Director. Cancellation shall not occur during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts.

(8) The owner or operator may cancel the bond if the Director has given prior written consent. The Director shall provide such written consent when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.10; or

(B) The Director releases the owner or operator from the requirements of §4414.10 in accordance with §4414.10(i).

(9) The surety shall not be liable for deficiencies in the performance of closure by the owner or operator after the Director releases the owner or operator from the requirements of §4414.10 in accordance with §4414.10(i).

(d) An owner or operator may satisfy the requirements of §4414.10 by obtaining an irrevocable standby letter of credit that conforms to the requirements of §4414.10(d) and submitting the letter to the Director. An owner or operator of a new facility shall submit the letter of credit to the Director at least sixty (60) days before the date the owner or operator first receives hazardous waste for treatment, storage, or disposal. The letter of credit shall be effective before this initial receipt of hazardous waste. The issuing institution shall be an entity that has the authority to issue letters of credit and whose

letter-of-credit operations are regulated and examined by a Federal, State, or District agency.

(1) The wording of the letter of credit shall be identical to the wording specified in §4414.20(d).

(2) An owner or operator who uses a letter of credit to satisfy the requirements of §4414.10 shall also establish a standby trust fund. Under the terms of the letter of credit, the issuing institution shall deposit all amounts paid pursuant to a draft by the Director directly into the standby trust fund in accordance with instructions from the Director. This standby trust fund shall meet the requirements of the trust fund specified in §§4414.10(a) through 4414.10(a)(10)(B), except that:

(A) An originally signed duplicate of the trust agreement shall be submitted to the Director with the letter of credit; and

(B) Unless the standby trust fund is funded pursuant to the requirements of §4414.10, the following are not required by these regulations:

(i) Payments into the trust fund as specified in §§4414.10(a) through 4414.10(a)(10)(B);

(ii) Updating of Schedule A of the trust agreement (see §4414.20(a)) to show current closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(3) The letter of credit shall be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

(4) The letter of credit shall be irrevocable and issued for a period of at least one (1) year. The letter of credit shall provide that the expiration date will be automatically extended for a period of at least one (1) year unless, at least one hundred twenty (120) days before the current expiration date, the issuing institution notifies both the owner or operator and the Director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the one hundred twenty (120) days shall begin on the date when both the owner or operator and the Director have received the notice, as evidenced by the return receipts.

(5) The letter of credit shall be issued in an amount at least equal to the current closure cost estimate, except as provided in §4414.10(g).

(6) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within sixty (60) days after the

increase, shall either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.10 to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Director.

(7) Following a final administrative determination pursuant to §12 of HWMA (D.C. Code §6-711, 1995 Repl. Vol.) or RCRA §3008 that the owner or operator has failed to perform final closure in accordance with the closure plan and other permit requirements when required to do so, the Director may draw on the letter of credit.

(8) If the owner or operator does not establish alternate financial assurance as specified in §4414.10 and obtain written approval of alternate assurance from the Director within ninety (90) days after receipt by both the owner or operator and the Director of a notice from issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Director shall draw on the letter of credit. The Director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty (30) days of any extension the Director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in §4414.10 and obtain written approval of assurance from the Director.

(9) The Director shall return the letter of credit to the issuing institution for termination when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.10; or

(B) The Director releases the owner or operator from the requirements of §4414.10 in accordance with §4414.10(i).

(e) An owner or operator may satisfy the requirements of §4414.10 by obtaining closure insurance that conforms to the requirements of §4414.10(e) and submitting a certificate of closure insurance to the Director. An owner or operator of a new facility shall submit the certificate of insurance to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for treatment, storage, or disposal. The insurance shall be effective before this initial receipt of hazardous waste. At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States or in the District.

(1) The wording of the certificate of insurance shall be identical to the wording specified in §4414.20(e).

(2) The closure insurance policy shall be issued for a face amount at least equal to the current closure cost estimate, except as provided in §4414.10(g). Actual payments by the insurer shall not change the face amount, although the insurer's future liability shall be lowered by the amount of the payments.

(3) The closure insurance policy shall guarantee that funds will be available to close the facility whenever final closure occurs. The policy shall also guarantee that once final closure begins, the insurer shall be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Director, to the party or parties the Director specifies.

(4) After beginning partial or final closure, an owner or operator or any other person authorized to conduct closure may request reimbursements for closure expenditures by submitting itemized bills to the Director. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within sixty (60) days after receiving bills for closure activities, the Director shall instruct the insurer to make reimbursements in the amounts the Director specifies in writing, if the Director determines that the partial or final closure expenditures are in accordance with the approved closure plan or otherwise justified. If the Director has reason to believe that the maximum cost of closure over the remaining life of the facility will be signficantly greater than the face amount of the policy, he or she may withhold reimbursements of the amounts he or she deems prudent until he or she determines, in accordance with §4414.10(i), that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the Director does not instruct the insurer to make reimbursements, he or she shall provide the owner or operator with a detailed written statement of reasons.

(5) The owner or operator shall maintain the policy in full force and effect until the Director consents to termination of the policy by the owner or operator as specified in §4414.10(e)(9). Failure to pay the premium, without substitution of alternate financial assurance as specified in §4414.10, shall constitute a significant violation of these regulations, warranting the remedy the Director deems necessary. The violation shall be deemed to begin upon receipt by the Director of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(6) Each policy shall contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, provided consent is not unreasonably refused.

(7) The policy shall provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy shall, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Director. Cancellation, termination, or failure to renew shall not occur, however, during the one hundred twenty (120) days beginning with the date of receipt of the notice by both the Director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew shall not occur and the policy shall remain in full force and effect if on or before the date of expiration:

(A) The Director deems the facility abandoned;

(B) The permit is terminated or revoked or a new permit is denied;

(C) The Director or a U.S. district court or other court of competent jurisdiction orders closure;

(D) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(E) The premium due is paid.

(8) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within sixty (60) days after the increase, shall either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.10 to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the Director.

(9) The Director shall give written consent to the owner or operator that he or she may terminate the insurance policy when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.10; or

(B) The Director releases the owner or operator from the requirements of §4414.10 in accordance with §4414.10(i).

(f) An owner or operator may satisfy the requirements of §4414.10 by demonstrating that he or she passes a financial test as specified in §4414.10(f). To pass this test the owner or operator shall meet the criteria of either §4414.10(f)(1) or §4414.10(f)(2):

(1) The owner or operator shall have:

(A) Two of the following three ratios: a ratio of total liabilities to net worth less than two (2); a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than one-tenth (0.1); and a ratio of current assets to current liabilities greater than one and one-half (1.5);

(B) Net working capital and tangible net worth each at least six (6) times the sum of the current closure and post-closure cost estimates;

(C) Tangible net worth of at least ten (10) million dollars; and

(D) Assets located in the United States amounting to at least ninety percent (90%) of total assets or at least six (6) times the sum of the current closure and post-closure cost estimates.

(2) The owner or operator shall have:

(A) A current rating for his or her most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's;

(B) Tangible net worth at least six (6) times the sum of the current closure and post-closure cost estimates;

(C) Tangible net worth of at least ten (10) million dollars; and

(D) Assets located in the United States amounting to at least ninety percent (90%) percent of total assets or at least six (6) times the sum of the current closure and post-closure cost estimates.

(3) The phrase "current closure and post-closure cost estimates" as used in §4414.10(f) refers to the cost estimates required in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§4414.20(f)).

(4) To demonstrate that he or she meets this test, the owner or operator shall submit the following items to the Director:

(A) A letter signed by the owner's or operator's chief financial officer and worded as specified in §4414.20(f);

(B) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(C) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(i) He or she has compared the data that the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements; and

(ii) In connection with that procedure, no matters came to his or her attention that caused him or her to believe that the specified data should be adjusted.

(5) An owner or operator of a new facility shall submit the items specified in §4414.10(f)(4) to the Director at least sixty (60) days before the owner or operator first receives hazardous waste for treatment, storage, or disposal.

(6) After the initial submission of items specified in §4414.10(f)(4), the owner or operator shall send updated information to the Director within ninety (90) days after the close of each succeeding fiscal year. This information shall consist of all three (3) items specified in §4414.10(f)(4).

(7) If the owner or operator no longer meets the requirements of §4414.10(f), he or she shall send notice to the Director of intent to establish alternate financial assurance as specified in §4414.10. The notice shall be sent by certified mail within ninety (90) days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator shall provide the alternate financial assurance within one hundred twenty (120) days after the end of that fiscal year.

(8) The Director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of §4414.10(f), require reports of financial condition at any time from the owner or operator in addition to those specified in §4414.10(f)(4). If the Director finds, on the basis of those reports or other information, that the owner or operator no longer meets the requirements of §4414.10(f), the owner or operator shall provide alternate financial assurance as specified in §4414.10 within thirty (30) days after notification of that finding.

(9) The Director may disallow use of this test based on qualifications in the opinion the independent certified public accountant provides in his or her report on examination of the owner's or operator's financial statements (see §4414.10(f)(4)(B)). An adverse opinion or a disclaimer of opinion shall be cause for disallowance. The Director shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in §4414.10 within thirty (30) days after notification of the disallowance.

(10) The owner or operator is no longer required to submit the items specified in §4414.10(f)(4) when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.10; or

(B) The Director releases the owner or operator from the requirements of §4414.10 in accordance with §4414.10(i).

(11) An owner or operator may meet the requirements of §4414.10 by obtaining a written guarantee. The guarantor shall be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor shall meet the requirements for owners or operators in §4414.10(f) and shall comply with the terms of the guarantee. The wording of the guarantee shall be identical to the wording specified in §4414.21. The certified copy of the guarantee shall accompany the items sent to the Director as specified in §4414.10(f)(4). One of these items shall be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter shall describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter shall describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee shall provide that:

(A) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other permit requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in §4414.10(a) in the name of the owner or operator.

(B) The corporate guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Director. Cancellation shall not occur during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts.

(C) If the owner or operator fails to provide alternate financial assurance as specified in §4414.10 and obtain the written approval of alternate assurance from the Director within ninety (90) days after receipt by both the owner or operator and the Director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor shall provide alternative financial assurance in the name of the owner or operator.

(g) An owner or operator may satisfy the requirements of §4414.10 by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms shall be as specified in §§4414.10(a), (b), (d), and (e), respectively, except that it is the combination of mechanisms, rather than the single mechanism, that shall provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two (2) or more mechanisms. The Director may use any or all of the mechanisms to provide for closure of the facility.

(h) An owner or operator may use a financial assurance mechanism specified in §4414.10 to meet the requirements of §4414.10 for more than one facility. Evidence of financial assurance submitted to the Director shall include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Director may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(i) Within sixty (60) days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Director shall notify the owner or operator in writing that he or she is no longer required by §4414.10 to maintain financial assurance for final closure of the facility, unless the Director has reason to believe that final closure has not been in accordance with the approved closure plan. The Director shall provide the owner or operator a detailed written statement of any

such reason to believe that closure has not been in accordance with the approved closure plan.

4414.11 The owner or operator of a hazardous waste management unit shall have a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure regulations in §§4413.17 through 4413.29, 4416.33 through 4416.35, 4417.35 through 4417.38, and 4425.4.

(a) The post-closure cost estimate shall be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in §5400.1)

(b) The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under §§4413.17 through 4413.21.

4414.12 During the active life of the facility, the owner or operator shall adjust the post-closure cost estimate for inflation within sixty (60) days before the anniversary date of the establishment of the financial instrument(s) used to comply with §4414.15. For owners or operators using the financial test or corporate guarantee, the post-closure cost estimate shall be updated for inflation within thirty (30) days after the close of the firm's fiscal year and before the submission of updated information to the Director as specified in §4414.15(f)(6). The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business as specified in §§4414.15(b) and 4414.15(b)(1). The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

(a) The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

(b) Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

4414.13 During the active life of the facility, the owner or operator shall revise the post-closure cost estimate within thirty (30) days after the Director has approved the request to modify the post-closure plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate shall be adjusted for inflation as specified in §4414.12.

4414.14 The owner or operator shall keep the following at the facility during the operating life of the facility: The latest post-closure cost estimate prepared in accordance with §§4414.11 and 4414.13 and, when this estimate has been adjusted in accordance with §4414.12, the latest adjusted post-closure cost estimate.

4414.15 The owner or operator of a hazardous waste management unit subject to the requirements of §§4414.11 through 4414.14 shall establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility sixty (60) days before the initial receipt of hazardous waste or the effective date of the regulation, whichever is later. He or she shall choose from the following options:

(a) An owner or operator may satisfy the requirements of §4414.15 by establishing a post-closure trust fund that conforms to the requirements of §4414.15(a) and submitting an originally signed duplicate of the trust agreement to the Director. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for disposal. The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal, State, or District agency.

(1) The wording of the trust agreement shall be identical to the wording specified in §4414.20(a), and the trust agreement shall be accompanied by a formal certification of acknowledgment (for example, see §4414.20(a)). Schedule A of the trust agreement shall be updated within sixty (60) days after a change in the amount of the current post-closure cost estimate covered by the agreement.

(2) Payments into the trust fund shall be made annually by the owner or operator over the term of the initial TSD facility permit or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the post-closure trust fund shall be made as follows:

(A) For a new facility, the first payment shall be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment shall be submitted by the owner or operator to the Director before this initial receipt of hazardous waste. The first payment shall be at least equal to the current post-closure cost estimate, except as provided in §4414.15(g), divided by the number of years in the pay-in period. Subsequent payments shall be made no later than thirty (30) days after each anniversary date of the first payment. The amount of each subsequent payment shall be determined by this formula:

$$Next\ payment = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(B) If an owner or operator establishes a trust fund as specified in 40 CFR 265.145(a) as restricted by §4401.2, and the value of that trust fund is less than the current post-closure cost estimate when a permit is awarded for the facility, the amount of the current post-closure cost estimate still to be paid into the fund shall be paid in over the pay-in period as defined in §4414.15(a)(2). Payments shall continue to be made no later than thirty (30) days after each anniversary date of the first payment made pursuant to 40 CFR Part 265 as restricted by §4401.2. The amount of each payment shall be determined by this formula:

$$Next\ payment = \frac{CE - CV}{Y}$$

where CE is the current post-closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

(3) The owner or operator may accelerate payments into the trust fund or he or she may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he or she shall maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in §4414.15(a)(2).

(4) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in §4414.15 or in 40 CFR 265.145 as restricted by §4401.2, his or her first payment shall be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of §4414.15(a) and 40 CFR 265.145(a) as restricted by §4401.2, as applicable.

(5) After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within sixty (60) days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in §4414.15 to cover the difference.

(6) During the operating life of the facility, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the Director for release of the amount in excess of the current post-closure cost estimate.

(7) If an owner or operator substitutes other financial assurance as specified in §4414.15 for all or part of the trust fund, he or she may submit a written request to the Director for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.

(8) Within sixty (60) days after receiving a request from the owner or operator for release of funds as specified in §4414.15(a)(6) or §4414.15(a)(7), the Director shall instruct the trustee to release to the owner or operator the funds the Director specifies in writing.

(9) During the period of post-closure care, the Director may approve a release of funds if the owner or operator demonstrates to the Director that the value of the trust fund exceeds the remaining cost of post-closure care.

(10) An owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure care expenditures by submitting itemized bills to the Director. Within sixty (60) days after receiving bills for post-closure care activities, the Director shall instruct the trustee to make reimbursements in those amounts as the Director specifies in writing, if the Director determines that the post-closure care expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Director does not instruct the trustee to make reimbursements, he or she shall provide the owner or operator with a detailed written statement of reasons.

(11) The Director shall agree to termination of the trust when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.15; or

(B) The Director releases the owner or operator from the requirements of §4414.15 in accordance with §4414.15(i).

(b) An owner or operator may satisfy the requirements of §4414.15 by obtaining a surety bond that conforms to the requirements of §4414.15(b) and submitting the bond to the Director. An owner or operator of a new facility shall submit the bond to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(1) The wording of the surety bond shall be identical to the wording specified in §4414.20(b).

(2) The owner or operator who uses a surety bond to satisfy the requirements of §4414.15 shall also establish a standby trust fund. Under the terms of the bond, the surety shall deposit all payments made under the surety bond directly into the standby trust fund in accordance with instructions from the Director. This standby trust fund shall meet the requirements specified in §4414.15(a), except that:

(A) An originally signed duplicate of the trust agreement shall be submitted to the Director with the surety bond; and

(B) Until the standby trust fund is funded pursuant to the requirements of §4414.15, the following are not required by these regulations:

(i) Payments into the trust fund as specified in §4414.15(a);

(ii) Updating of Schedule A of the trust agreement (see §4414.20(a)) to show current post-closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(3) The bond shall guarantee that the owner or operator will:

(A) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(B) Fund the standby trust fund in an amount equal to the penal sum within fifteen (15) days after an administrative order to begin final closure issued by the Director becomes final, or within fifteen (15) days after an order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(C) Provide alternate financial assurance as specified in §4414.15, and obtain the Director's written approval of the assurance provided, within ninety (90) days after receipt by both the owner or operator and the Director of a notice of cancellation of the bond from the surety.

(4) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

(5) The penal sum of the bond shall be in an amount at least equal to the current post-closure cost estimate, except as provided in §4414.15(g).

(6) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within sixty (60) days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.15 to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Director.

(7) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Director. Cancellation shall not occur during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts.

(8) The owner or operator may cancel the bond if the Director has given prior written consent based on his or her receipt of evidence of alternate financial assurance as specified in §4414.15.

(c) An owner or operator may satisfy the requirements of §4414.15 by obtaining a surety bond that conforms to the requirements of §4414.15(c) and submitting the bond to the Director. An owner or operator of a new facility shall submit the bond to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(1) The wording of the surety bond shall be identical to the wording specified in §4414.20(c).

(2) The owner or operator who uses a surety bond to satisfy the requirements of §4414.15 shall also establish a standby trust fund. Under the terms of the bond, the surety shall deposit all payments made under the surety bond directly into the standby trust fund in accordance with instructions from the Director. This standby trust fund shall meet the requirements specified in §4414.15(a), except that:

(A) An originally signed duplicate of the trust agreement shall be submitted to the Director with the surety bond; and

(B) Unless the standby trust fund is funded pursuant to the requirements of §4414.15, the following are not required by these regulations:

(i) Payments into the trust fund as specified in §4414.15(a);

(ii) Updating of Schedule A of the trust agreement (see §4414.20(a)) to show current post-closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(3) The bond shall guarantee that the owner or operator shall:

(A) Perform post-closure care in accordance with the post-closure plan and other requirements of the permit for the facility; or

(B) Provide alternate financial assurance as specified in §4414.15, and obtain the Director's written approval of the assurance provided, within ninety (90) days of receipt by both the owner or operator and the Director of a notice of cancellation of the bond from the surety.

(4) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a final administrative determination pursuant to §12 of HWMA (D.C. Code §6-711, 1995 Repl. Vol.) or RCRA §3008 that the owner or operator has failed to perform post-closure care in accordance with the approved post-closure plan and other permit requirements, under the terms of the bond the surety shall perform post-closure care in accordance with the post-closure plan and other permit requirements or shall deposit the amount of the penal sum into the standby trust fund.

(5) The penal sum of the bond shall be in an amount at least equal to the current post-closure cost estimate.

(6) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum during the operating life of the facility, the owner or operator, within sixty (60) days after the increase, shall either cause the penal sum to be

increased to an amount at least equal to the current post-closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.15. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Director.

(7) During the period of post-closure care, the Director may approve a decrease in the penal sum if the owner or operator demonstrates to the Director that the amount exceeds the remaining cost of post-closure care.

(8) Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Director. Cancellation may not occur, however, during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Director has given prior written consent. The Director shall provide such written consent when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.15; or

(B) The Director releases the owner or operator from the requirements of §4414.15 in accordance with §4414.15(i).

(10) The surety shall not be liable for deficiencies in the performance of post-closure care by the owner or operator after the Director releases the owner or operator from the requirements of §4414.15 in accordance with §4414.15(i).

(d) An owner or operator may satisfy the requirements of §4414.15 by obtaining an irrevocable standby letter of credit that conforms to the requirements of §4414.15(d) and submitting the letter to the Director. An owner or operator of a new facility shall submit the letter of credit to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for disposal. The letter of credit shall be effective before this initial receipt of hazardous waste. The issuing institution shall be an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal, State, or District agency.

(1) The wording of the letter of credit shall be identical to the wording specified in §4414.20(d).

(2) An owner or operator who uses a letter of credit to satisfy the requirements of §4414.15 shall also establish a standby trust fund. Under the terms of the letter of credit, the issuing institution shall deposit all amounts paid pursuant to a draft by the Director directly into the standby trust fund in accordance with instructions from the Director. This standby trust fund shall meet the requirements of the trust fund specified in §4414.15(a), except that:

(A) An originally signed duplicate of the trust agreement shall be submitted to the Director with the letter of credit; and

(B) Unless the standby trust fund is funded pursuant to the requirements of §4414.15, the following are not required by these regulations:

(i) Payments into the trust fund as specified in §4414.15(a);

(ii) Updating of Schedule A of the trust agreement (see §4414.20(a)) to show current post-closure cost estimates;

(iii) Annual valuations as required by the trust agreement; and

(iv) Notices of nonpayment as required by the trust agreement.

(3) The letter of credit shall be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for post-closure care of the facility by the letter of credit.

(4) The letter of credit shall be irrevocable and issued for a period of at least one (1) year. The letter of credit shall provide that the expiration date will be automatically extended for a period of at least one (1) year unless, at least one hundred twenty (120) days before the current expiration date, the issuing institution notifies both the owner or operator and the Director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the one hundred twenty (120) days shall begin on the date when both the owner or operator and the Director have received the notice, as evidenced by the return receipts.

(5) The letter of credit shall be issued in a amount at least equal to the current post-closure cost estimate, except as provided in §4414.15(g).

(6) Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility, the owner or operator, within sixty (60) days after the increase, shall either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.15 to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the Director.

(7) During the period of post-closure care, the Director may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the Director that the amount exceeds the remaining cost of post-closure care.

(8) Following a final administrative determination pursuant to §12 of HWMA (D.C. Code §6-711, 1995 Repl. Vol.) or RCRA §3008 that the owner or operator has

failed to perform post-closure care in accordance with the approved post-closure plan and other permit requirements, the Director may draw on the letter of credit.

(9) If the owner or operator does not establish alternate financial assurance as specified in §4414.15 and obtain written approval of alternate assurance from the Director within ninety (90) days after receipt by both the owner or operator and the Director of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Director shall draw on the letter of credit. The Director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last thirty (30) days of any extension the Director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in §4414.15 and obtain written approval of assurance from the Director.

(10) The Director shall return the letter of credit to the issuing institution for termination when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.15; or

(B) The Director releases the owner or operator from the requirements of §4414.15 in accordance with §4414.15(i).

(e) An owner or operator may satisfy the requirements of §4414.15 by obtaining post-closure insurance that conforms to the requirements of §4414.15(e) and submitting a certificate of post-closure insurance to the Director. An owner or operator of a new facility shall submit the certificate of insurance to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for disposal. The insurance shall be effective before this initial receipt of hazardous waste. At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(1) The wording of the certificate of insurance shall be identical to the wording specified in §4414.20(e).

(2) The post-closure insurance policy shall be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in §4414.15(g). The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer shall not change the face amount, although the insurer's future liability shall be lowered by the amount of the payments.

(3) The post-closure insurance policy shall guarantee that funds shall be available to provide post-closure care of the facility whenever the post-closure period begins. The policy shall also guarantee that once post-closure care begins, the insurer shall be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Director, to the party or parties the Director specifies.

(4) An owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure care expenditures by submitting itemized bills to the Director. Within sixty (60) days after receiving bills for post-closure care activities, the Director shall instruct the insurer to make reimbursements in those amounts as the Director specifies in writing, if the Director determines that the post-closure care expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Director does not instruct the insurer to make reimbursements, he or she shall provide the owner or operator with a detailed written statement of reasons.

(5) The owner or operator shall maintain the policy in full force and effect until the Director consents to termination of the policy by the owner or operator as specified in §4414.15(e)(10). Failure to pay the premium, without substitution of alternate financial assurance as specified in §4414.15, shall constitute a significant violation of these regulations, warranting remedy the Director deems necessary. A violation shall be deemed to begin upon receipt by the Director of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(6) Each policy shall contain a provision allowing assignment of the policy to a successor owner or operator. The assignment may be conditional upon consent of the insurer, provided consent is not unreasonably refused.

(7) The policy shall provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy shall, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Director. Cancellation, termination, or failure to renew may not occur, however, during the one hundred twenty (120) days beginning with the date of receipt of the notice by both the Director and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy shall remain in full force and effect in the event that on or before the date of expiration:

(A) The Director deems the facility abandoned;

(B) The permit is terminated or revoked or a new permit is denied;

(C) Closure is ordered by the Director or a U.S. district court or other court of competent jurisdiction;

(D) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(E) The premium due is paid.

(8) Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility, the owner or operator, within sixty (60) days after the increase, shall either cause the

face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of the increase to the Director, or obtain other financial assurance as specified in §4414.15 to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the Director.

(9) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer shall thereafter annually increase the face amount of the policy. The increase shall be equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to eighty-five percent (85%) of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for twenty-six (26) week Treasury securities.

(10) The Director shall give written consent to the owner or operator that he or she may terminate the insurance policy when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.15; or

(B) The Director releases the owner or operator from the requirements of §4414.15 in accordance with §4414.15(i).

(f) An owner or operator may satisfy the requirements of §4414.15 by demonstrating that he or she passes a financial test as specified in §4414.15(f). To pass this test the owner or operator shall meet the criteria of either §4414.15(f)(1) or §4414.15(f)(2):

(1) The owner or operator shall have:

(A) Two (2) of the following three (3) ratios: a ratio of total liabilities to net worth less than two (2); a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than one-tenth (0.1); and a ratio of current assets to current liabilities greater than one and one-half (1.5);

(B) Net working capital and tangible net worth each at least six (6) times the sum of the current closure and post-closure cost estimates;

(C) Tangible net worth of at least ten (10) million dollars; and

(D) Assets in the United States amounting to at least ninety percent (90%) of his or her total assets or at least six (6) times the sum of the current closure and post-closure cost estimates; and

(2) The owner or operator shall have:

(A) A current rating for his or her most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's;

(B) Tangible net worth at least six (6) times the sum of the current closure and post-closure cost estimates;

(C) Tangible net worth of at least ten (10) million dollars; and

(D) Assets located in the United States amounting to at least ninety percent (90%) of his or her total assets or at least six (6) times the sum of the current closure and post-closure cost estimates; and

(3) The phrase "current closure and post-closure cost estimates" as used in §4414.15(f) refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer §4414.20(f));

(4) To demonstrate that he or she meets this test, the owner or operator shall submit the following items to the Director:

(A) A letter signed by the owner's or operator's chief financial officer and worded as specified in §4414.20(f);

(B) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(C) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(i) He or she has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(ii) In connection with that procedure, no matters came to his or her attention which caused him or her to believe that the specified data should be adjusted; and

(5) An owner or operator of a new facility shall submit the items specified in §4414.15(f)(4) to the Director at least sixty (60) days before the date on which hazardous waste is first received for disposal;

(6) After the initial submission of items specified in §4414.15(f)(4), the owner or operator shall send updated information to the Director within ninety (90) days after the close of each succeeding fiscal year. This information shall consist of all three (3) items specified in §4414.15(f)(4);

(7) If the owner or operator no longer meets the requirements of §4414.15(f), he or she shall send notice to the Director of intent to establish alternate financial assurance as specified in §4414.15. The notice shall be sent by certified mail within ninety (90) days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements.

The owner or operator shall provide the alternate financial assurance within one hundred twenty (120) days after the end of the fiscal year;

(8) The Director may, based on a reasonable belief that the owner or operator may no longer meet the requirements of §4414.15(f), require reports of financial condition at any time from the owner or operator in addition to those specified in §4414.15(f)(4). If the Director finds, on the basis of those reports or other information, that the owner or operator no longer meets the requirements of §4414.15(f), the owner or operator shall provide alternate financial assurance as specified in §4414.15 within thirty (30) days after notification of that finding;

(9) The Director may disallow use of this test based on qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements (see §4414.15(f)(4)(B)). An adverse opinion or a disclaimer of opinion shall be cause for disallowance. The Director shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in §4414.15 within thirty (30) days after notification of the disallowance;

(10) During the period of post-closure care, the Director may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Director that the amount of the cost estimate exceeds the remaining cost of post-closure care;

(11) The owner or operator is no longer required to submit the items specified in §4414.15(f)(4) when:

(A) An owner or operator substitutes alternate financial assurance as specified in §4414.15; or

(B) The Director releases the owner or operator from the requirements of §4414.15 in accordance with §4414.15(i); and

(12) An owner or operator may meet the requirements for §4414.15 by obtaining a written guarantee. The guarantor shall be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor shall meet the requirements for owners or operators in §4414.15(f) and shall comply with the terms of the guarantee. The wording of the guarantee shall be identical to the wording specified in §§4414.21. A certified copy of the guarantee shall accompany the items sent to the Director as specified in §4414.15(f)(4). One of these items shall be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

(A) If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other permit requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in §4414.15(a) in the name of the owner or operator;

(B) The corporate guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Director. Cancellation may not occur, however, during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Director, as evidenced by the return receipts;

(C) If the owner or operator fails to provide alternate financial assurance as specified in §4414.15 and obtain the written approval of the alternate assurance from the Director within ninety (90) days after receipt by both the owner or operator and the Director of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor shall provide the alternate financial assurance in the name of the owner or operator; and

(g) An owner or operator may satisfy the requirements of §4414.15 by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. The mechanisms must be as specified in §4414.15(a), (b), (d), and (e), respectively, except that it is the combination of mechanisms, rather than the single mechanism, that shall provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two (2) or more mechanisms. The Director may use any or all of the mechanisms to provide for post-closure care of the facility;

(h) An owner or operator may use a financial assurance mechanism specified in §4414.15 to meet the requirements of §4414.15 for more than one facility. Evidence of financial assurance submitted to the Director must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for post-closure care assured by the mechanism. If the facilities covered by the mechanism are in more than one Region, identical evidence of financial assurance must be submitted to and maintained with the Directors of all those Regions. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the Director may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism; and

(i) Within sixty (60) days after receiving certifications from the owner or operator and an independent registered professional engineer that the post-closure care period has been completed for a hazardous waste disposal unit in accordance with the approved plan, the Director shall notify the owner or operator that he or she is no longer required to

maintain financial assurance for post-closure care of that unit, unless the Director has reason to believe that post-closure care has not been in accordance with the approved post-closure plan. The Director shall provide the owner or operator with a detailed written statement of any reason to believe that post-closure care has not been in accordance with the approved post-closure plan.

4414.16 An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test, or corporate guarantee that meets the specifications for the mechanism in both §§4414.10 and 4414.15. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of post-closure care.

4414.17 Liability requirements shall be met by one of the following mechanisms:

(a) An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden accidental occurrences in the amount of at least one (1) million dollars per occurrence with an annual aggregate of at least two (2) million dollars, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in §4414.17(a)(1), (2), (3), (4), (5), or (6):

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in §4414.17(a);

(A) Each insurance policy shall be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement shall be identical to the wording specified in §4414.23. The wording of the certificate of insurance shall be identical to the wording specified in §4414.24. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the Director. If requested by the Director, the owner or operator shall provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability ~~Insurance~~ to the Director at least sixty (60) days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance shall be effective before this initial receipt of hazardous waste;

(B) Each insurance policy shall be issued by an insurer that, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the District; and

(2) An owner or operator may meet the requirements of §4414.17 by passing a financial test or using the guarantee for liability coverage as specified §§4414.17(f) and 4414.17(g);

(3) An owner or operator may meet the requirements of §4414.17 by obtaining a letter of credit for liability coverage as specified in §4414.17(h);

(4) An owner or operator may meet the requirements of §4414.17 by obtaining a surety bond for liability coverage as specified in §4414.17(i);

(5) An owner or operator may meet the requirements of §4414.17 by obtaining a trust fund for liability coverage as specified in §4414.17(j);

(6) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated shall total at least the minimum amounts required by §4414.17. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under §4414.17(a)(6), the owner or operator shall specify at least one assurance as "primary" coverage and shall specify other assurance as "excess" coverage; and

(7) An owner or operator shall notify the Director in writing within thirty (30) days whenever:

(A) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in §§4414.17(a)(1) through 4414.17(a)(6);

(B) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under §§4414.17(a)(1) through 4414.17(a)(6); or

(C) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under §§4414.17(a)(1) through 4414.17(a)(6); and

(b) An owner or operator of a miscellaneous disposal unit that is used to manage hazardous waste, or a group of facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least three (3) million dollars per occurrence with an annual aggregate of at least six (6) million dollars, exclusive of legal defense costs. An owner or operator who must meet the requirements of §4414.17 may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence

level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences shall maintain liability coverage in the amount of at least four (4) million dollars per occurrence and eight (8) million dollars annual aggregate. This liability coverage may be demonstrated as specified in §4414.17(b)(1), (2), (3), (4), (5), or (6):

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in §4414.17(b)(1);

(A) Each insurance policy shall be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement shall be identical to the wording specified in §4414.23. The wording of the certificate of insurance shall be identical to the wording specified in §4414.24. The owner or operator shall submit a signed duplicate original of the endorsement or the certificate of insurance to the Director. If requested by the Director, the owner or operator shall provide a signed duplicate original of the insurance policy. An owner or operator of a new facility shall submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for treatment, storage, or disposal. The insurance shall be effective before this initial receipt of hazardous waste;

(B) Each insurance policy shall be issued by an insurer that, at a minimum, is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States; and

(2) An owner or operator may meet the requirements of §4414.17 by passing a financial test or using the guarantee for liability coverage as specified in §§4414.17(f) and 4414.17(g);

(3) An owner or operator may meet the requirements of §4414.17 by obtaining a letter of credit for liability coverage as specified in §4414.17(h);

(4) An owner or operator may meet the requirements of §4414.17 by obtaining a surety bond for liability coverage as specified in §4414.17(i);

(5) An owner or operator may meet the requirements of §4414.17 by obtaining a trust fund for liability coverage as specified in §4414.17(j);

(6) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated shall total at least the minimum amount required by §4414.17. If the owner or operator demonstrates the required coverage through the use of a combination of financial

assurances under §4414.17(b)(6), the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage;

(7) An owner or operator shall notify the Director in writing within thirty (30) days whenever:

(A) A Claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in §§4414.17(b)(1) through 4414.17(b)(6);

(B) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under §§4414.17(b)(1) through 4414.17(b)(6); or

(C) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under §§4414.17(b)(1) through 4414.17(b)(6); and

(c) If an owner or operator can demonstrate to the satisfaction of the Director that the levels of financial responsibility required by §4414.17(a) or §4414.17(b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Director. The request for a variance shall be submitted to the Director as part of the application under §4603 for a facility that does not have a permit, or pursuant to the procedures for permit modification under §4702.1 for a facility that has a permit. If granted, the variance shall take the form of an adjusted level of required liability coverage. The level of liability coverage shall be based on the Director's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Director may require an owner or operator who requests a variance to provide any technical and engineering information the Director deems necessary to determine a level of financial responsibility other than that required by §4414.17(a) or §4414.17(b). Any request for a variance for a permitted facility shall be treated as a request for a permit modification under §§4617.4(e) and §4702.1;

(d) If the Director determines that the levels of financial responsibility required by §4414.17(a) or §4414.17(b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Director may adjust the level of financial responsibility required under §4414.17(a) or §4414.17(b) as may be necessary to protect human health and the environment. This adjusted level shall be based on the Director's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Director determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations

of a facility that is not a surface impoundment, landfill, or land treatment facility, he or she may require that an owner or operator of the facility comply with §4414.17(b). An owner or operator shall furnish to the Director, within a reasonable time, any information that the Director requests to determine whether cause exists for adjustments of the level or type of coverage. Any adjustment of the level or type of coverage for a facility that has a permit shall be treated as a permit modification under §§4617.4(e) and §4702.1;

(e) Within sixty (60) days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Director shall notify the owner or operator in writing that he or she is no longer required by §4414.17 to maintain liability coverage for that facility, unless the Director has reason to believe that closure has not been in accordance with the approved closure plan;

(f) An owner or operator may satisfy the requirements of §4414.17 by demonstrating that he or she passes a financial test as specified in §4414.17(f). To pass this test the owner or operator shall meet the criteria of §4414.17(f)(1) or §4414.17(f)(2):

(1) The owner or operator shall have:

(A) Net working capital and tangible net worth each at least six (6) times the amount of liability coverage to be demonstrated by this test;

(B) Tangible net worth of at least ten (10) million dollars; and

(C) Assets in the United States amounting to either at least ninety percent (90%) of his or her total assets; or at least six (6) times the amount of liability coverage to be demonstrated by this test; and

(2) The owner or operator shall have:

(A) A current rating for his or her most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's, or Aaa, Aa, A, or Baa as issued by Moody's;

(B) Tangible net worth of at least ten (10) million dollars;

(C) Tangible net worth at least six (6) times the amount of liability coverage to be demonstrated by this test; and

(D) Assets in the United States amounting to either at least ninety percent (90%) of his or her total assets; or at least six (6) times the amount of liability coverage to be demonstrated by this test; and

(3) The phrase "amount of liability coverage" as used in §4414.17(f) refers to the annual aggregate amounts for which coverage is required under §§4414.17(a) and (b);

(4) To demonstrate that he or she meets this test, the owner or operator shall submit the following three (3) items to the Director:

(A) A letter signed by the owner's or operator's chief financial officer and worded as specified in §4414.20(g). If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by §§4414.10(f), and 4414.15(f), and 40 CFR 265.143(e) as restricted by §4401.2, and 40 CFR 265.145(e) as restricted by §4401.2, and liability coverage, he or she shall submit the letter specified in §4414.20(g) to cover both forms of financial responsibility; a separate letter as specified in §4414.20(f) is not required;

(B) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year;

(C) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(i) He or she has compared the data that the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in the financial statements; and

(ii) In connection with that procedure, no matters came to his or her attention that caused him or her to believe that the specified data should be adjusted.

(5) An owner or operator of a new facility shall submit the items specified in §4414.17(f)(4) to the Director at least sixty (60) days before the date on which the owner or operator first receives hazardous waste for treatment, storage, or disposal;

(6) After the initial submission of items specified in §4414.17(f)(4), the owner or operator shall send updated information to the Director within ninety (90) days after the close of each succeeding fiscal year. This information shall consist of all three (3) items specified in §4414.17(f)(4);

(7) If the owner or operator no longer meets the requirements of §4414.17(f), he or she shall obtain insurance, a letter of credit, a surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in §4414.17. Evidence of liability coverage shall be submitted to the Director within ninety (90) days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements;

(8) The Director may disallow use of this test based on qualifications in the opinion the independent certified public accountant provides in his or her report on examination of the owner's or operator's financial statements (see §4414.17(f)(4)(B)). An adverse opinion or a disclaimer of opinion shall be cause

for disallowance. The Director shall evaluate other qualifications on an individual basis. The owner or operator shall provide evidence of insurance for the entire amount of required liability coverage as specified in §4414.17 within thirty (30) days after notification of disallowance;

(g) Subject to §§4414.17(g)(3) and (4), an owner or operator may meet the requirements of §4414.17 by obtaining a written guarantee. The guarantor shall be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor shall meet the requirements for owners or operators in §§4414.17(f) through 4414.17(f)(7). The wording of the guarantee shall be identical to the wording specified in §4414.22. A certified copy of the guarantee shall accompany the items sent to the Director as specified in §4414.17(f)(4). One of these items shall be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter shall describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter shall describe this "substantial business relationship" and the value received in consideration of the guarantee;

(1) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this corporate guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from the injury or damage, the guarantor shall do so up to the limits of coverage;

(2) [Reserved];

(3) In the case of corporations incorporated in the United States, a guarantee may be used to satisfy the requirements of §4414.17 only if the Attorney General or Insurance Commissioner of the State in which the guarantor is incorporated, and the District of Columbia Corporation Counsel or the Commissioner of Insurance and Securities have submitted a written statement to the Director that a guarantee executed as described in §4414.17 and §4414.22 is a legally valid and enforceable obligation in that State;

(4) In the case of corporations incorporated outside the United States, a guarantee may be used to satisfy the requirements of §4414.17 only if:

(A) The non-U.S. corporation has identified a registered agent for service of process in the District and in the State in which the guarantor corporation has its principal place of business; and

(B) The District of Columbia Corporation Counsel or Commissioner of Insurance and Securities and the Attorney General or Insurance Commissioner of the State in which the guarantor corporation has its principal place of business, have submitted a written statement to the Director that a guarantee executed as described in §4414.17 and §4414.22 is a legally valid and enforceable obligation in that State; and

(h) An owner or operator may satisfy the requirements of §4414.17 by obtaining an irrevocable standby letter or credit that conforms to the requirements of §4414.17(h) and submitting a copy of the letter of credit to the Director;

(1) The financial institution issuing the letter of credit shall be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency;

(2) The wording of the letter of credit shall be identical to the wording specified in §4414.25;

(3) An owner or operator who uses a letter of credit to satisfy the requirements of §4414.17 may also establish a standby trust fund. Under the terms of a letter of credit, the issuing institution shall deposit all amounts paid pursuant to a draft by the trustee of the standby trust into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal, State, or District agency; and

(4) The wording of the standby trust fund shall be identical to the wording specified in §§4414.29 through 4414.30; and

(i) An owner or operator may satisfy the requirements of §4414.17 by obtaining a surety bond that conforms to the requirements of §4414.17(i) and submitting a copy of the bond to the Director.

(1) The surety company issuing the bond shall be among those listed as acceptable sureties on Federal bonds in the most recent Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond shall be identical to the wording specified in §4414.26.

(3) A surety bond may be used to satisfy the requirements of §4414.17 only if the Attorney General or Insurance Commissioner of the State in which the surety is incorporated, and the District of Columbia Corporation Counsel or the Commissioner of Insurance and Securities have submitted a written statement to the Director that a surety bond executed as described in §4414.17 and §4414.26 is a legally valid and enforceable obligation in that State.

(j) An owner or operator may satisfy the requirements of §4414.17 by establishing a trust fund that conforms to the requirements of §4414.17(j) and submitting an originally signed duplicate of the trust agreement to the Director.

(1) The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal, State, or District agency.

(2) The trust fund for liability coverage shall be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to

satisfy the requirements of §4414.17. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, shall either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in §4414.17 to cover the difference. For purposes of this paragraph, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden and/or nonsudden occurrences the owner or operator is required to provide by §4414.17, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

(3) The wording of the trust fund shall be identical to the wording specified in §§4414.27 through 4414.28.

(k) Notwithstanding any other provision of this chapter, an owner or operator using liability insurance to satisfy the requirements of §4414.17 may use, until October 16, 1982, a Hazardous Waste Facility Liability Endorsement or Certificate of Liability Insurance that does not certify that the insurer is licensed to transact the business of insurance, or eligible as an excess or surplus lines insurer, in one or more States.

4414.18 An owner or operator shall notify the Director by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within ten (10) days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in §§4414.10(f) and 4414.15(f) shall make this notification if he or she is named as debtor, as required under the terms of the corporate guarantee (§§4414.21 through 4414.22).

4414.19 An owner or operator who fulfills the requirements of §§4414.10, 4414.15, or 4414.17 by obtaining a trust fund, surety bond, letter of credit, or insurance policy shall be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue these instruments. The owner or operator shall establish other financial assurance or liability coverage within sixty (60) days after such an event.

4414.20 A trust agreement; a surety bond guaranteeing payment into a trust fund; a surety bond guaranteeing performance of closure or post-closure care; a letter of credit; a certificate of insurance; a letter from the chief financial officer; a corporate guarantee; a hazardous waste facility liability endorsement; and a certificate of liability insurance shall be worded as follows:

(a) A trust agreement for a trust fund, as specified in §4414.10(a), or §4414.15(a), or 40 CFR 265.143(a), or 40 CFR 265.145(a) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Trust Agreement

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [District of Columbia or name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of ___" or "a national bank"], the "Trustee."

Whereas, the Department of Health, hereafter referred to as "the Department", has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility shall provide assurance that funds shall be available when needed for closure and/or post-closure care of the facility,

Whereas, the Grantor has elected to establish a trust to provide all or part of the financial assurance for the facilities identified herein,

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee,

Now, Therefor, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor; and

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A [on Schedule A, for each facility list the EPA Identification Number, name, address, and the current closure and/or post-closure cost estimates, or portions thereof, for which financial assurance is demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund," for the benefit of the Department. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. The property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions the Trustee makes pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department.

Section 4. Payment for Closure and Post-Closure Care. The Trustee shall make payments from the Fund as the Director of the Department (Director) shall direct, in writing, to provide for the payment of the costs of closure and/or post-closure care of

the facilities covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the Director from the Fund for closure and post-closure expenditures in the amounts the Director directs in writing. In addition, the Trustee shall refund to the Grantor the amounts the Director specifies in writing. Upon refund, the funds shall no longer constitute part of the Fund as defined herein.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income of the Fund and keep the Fund invested as a single fund, without distinction between principal and income, in accordance with general investment policies and guidelines that the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing that persons of prudence, acting in a like capacity and familiar with these matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(A) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held, unless they are securities or other obligations of the Federal, State, or District government;

(B) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal, State, or District government; and

(C) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(A) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(B) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 *et seq.*, including one that may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote the shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(A) To sell, exchange, convey, transfer, or otherwise dispose of any property, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of the sale or other disposition;

(B) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(C) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing the securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified central depositary even though, when so deposited, the securities may be merged and held in bulk in the name of the nominee of the depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all the securities are part of the Fund;

(D) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal, State, or District government; and

(E) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation. The Trustee shall annually, at least thirty (30) days before the anniversary date of establishment of the Fund, furnish to the Grantor and to the Director a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than sixty (60) days before the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within ninety (90) days after the Trustee furnishes the statement to the Grantor and the Director shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but the resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Director, and the present Trustee by certified mail ten (10) days before the change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by the persons designated in the attached Exhibit A or any other designees the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Director to the Trustee shall be in writing, signed by the Director, or his or her designee, and the Trustee shall act and shall be fully protected in acting in accordance with those orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Department hereunder has occurred. The Trustee shall have no duty to act in the absence of orders, requests, and instructions from the Grantor and/or the Department, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and Director, by certified mail within ten (10) days following the expiration of the thirty (30) day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Director, or by the Trustee and the Director if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall

continue until terminated at the written agreement of the Grantor, the Trustee, and the Director, or by the Trustee and the Director, if the Grantor ceases to exist. Upon termination of the Trust, the Trustee shall deliver all remaining trust property, less final trust administration expenses, to the Grantor.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Director issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide defense expenses.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the District of Columbia.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written: The parties below certify that the wording of this Agreement is identical to the wording specified in Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414.20(a), as the regulations were constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

[The following is an example of the certification of acknowledgment that shall accompany the trust agreement for a trust fund as specified in 20 DCMR §§4414.10(a)

and 4414.15(a), or 40 CFR 265.143(a) and 40 CFR 265.145(a) as restricted by 20 DCMR §4401.2.

District of Columbia or State of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of this corporation; that the seal affixed to this instrument is the corporate seal; that it was so affixed by order of the Board of Directors of the corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

(b) A surety bond guaranteeing payment into a trust fund, as specified in §§4414.10(b), or 4414.15(b), or 40 CFR 265.143(b) as restricted by §4401.2, or 40 CFR 265.145(b) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Financial Guarantee Bond

Date bond executed:

Effective date:

Principal: [legal name and business address of owner or operator]

Type of Organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation: _____

Surety(ies): [name(s) and business address(es)]

EPA Identification Number, name, address and closure and/or post-closure amount(s) for each facility guaranteed by this bond [indicate closure and post-closure amounts separately]: _____

Total penal sum of bond: $_____

Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Department of Health (hereafter called "the Department"), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the

name of that Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas the Principal is required, under the District of Columbia Hazardous Waste Management Act, as amended (HWMA), to have a ~~permit~~ or interim status to own or operate each hazardous waste management facility identified above, and

Whereas the Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the permit or interim status, and

Whereas the Principal shall establish a standby trust fund as is required when a surety bond is used to provide this financial assurance;

Now, Therefor, the conditions of the obligation are such that if the Principal shall faithfully, before the beginning of final closure of each facility identified above, fund the standby trust fund in the amount(s) identified above for the facility,

Or, if the Principal shall fund the standby trust fund in such amount(s) within fifteen (15) days after a final order to begin closure is issued by the Director of the Department (Director) or the District of Columbia Superior court or other court of competent jurisdiction,

Or, if the Principal shall provide alternate financial assurance, as specified in Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414 or 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2, as applicable, and obtain the Director's written approval of this assurance, within ninety (90) days after the date notice of cancellation is received by both the Principal and the Director from the Surety(ies), then this obligation shall be void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Director that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Director.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of the penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the Director, provided, however, that cancellation shall not occur during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the Principal and the Director, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Director.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure ~~amount,~~ provided that the penal sum does not increase by more than twenty percent (20%) in any one (1) year, and no decrease in the penal sum takes place without the written permission of the Director.

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 20 DCMR §4414.20(b) as the regulations were constituted on the date this bond was executed.

Principal

[Signature(s)] _____

[Name(s)] _____

[Title(s)] _____

[Corporate seal] _____

Corporate Surety(ies)

[Name and address]

State of incorporation: _____

Liability limit: $ _____

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $ _____

(c) A surety bond guaranteeing performance of closure and/or post-closure care, as specified in §4414.10(c) or §4414.15(c), shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Performance Bond

Date bond executed: _____

Effective date: _____

Principal: [legal name and business address of owner or operator]

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation: _____

Surety(ies): [name(s) and business address(es)] _____

EPA Identification Number, name, address, and closure and/or post-closure amount(s) for each facility guaranteed by this bond [indicate closure and post-closure amounts separately]: _____

Total penal sum of bond: $ _____

Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Department of Health (hereafter called "the Department"), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the name of the Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas the Principal is required, under the District of Columbia Hazardous Waste Management Act, as amended (HWMA), to have a permit to own or operate each hazardous waste management facility identified above, and

Whereas the Principal is required to provide financial assurance for closure, or closure and post-closure care, as a condition of the permit, and

Whereas the Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefor, the conditions of this obligation are such that if the Principal shall faithfully perform closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit as the plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, and amendments thereto,

And, if the Principal shall faithfully perform post-closure care of each facility for which this bond guarantees post-closure care, in accordance with the post-closure plan and

other requirements of the permit, as the plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations, and amendments thereto,

Or, if the Principal shall provide alternate financial assurance as specified in Title 20 of the District of Columbia Municipal Regulstion (DCMR) §4414, and obtain the Director's written approval of the assurance, within ninety (90) days after the date notice of cancellation is received by both the Principal and the Director of the Department (Director) from the Surety(ies), then this obligation shall be void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Director that the Principal has been found in violation of the closure requirements of 20 DCMR Chapter 44, for a facility for which this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amount guaranteed for the facility into the standby trust fund as directed by the Director.

Upon notification by the Director that the Principal has been found in violation of the post-closure requirements of 20 DCMR Chapter 44 for a facility for which this bond guarantees performance of post-closure care, the Surety(ies) shall either perform post-closure care in accordance with the post-closure plan and other permit requirements or place the post-closure amount guaranteed for the facility into the standby trust fund as directed by the Director.

Upon notification by the Director that the Principal has failed to provide alternate financial assurance as specified in 20 DCMR §4414, and obtain written approval of the assurance from the Director during the ninety (90) days following receipt by both the Principal and the Director of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Director.

The surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of the penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Director, provided, however, that cancellation shall not occur during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by both the Principal and the Director, as evidenced by the return receipts.

The principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Director.

[The following paragraph is an optional rider that may be included but is not required.]

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than twenty percent (20%) in any one (1) year, and no decrease in the penal sum takes place without the written permission of the Director.

In Witness Whereof, The Principal and Surety(ies) have executed this Performance Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 20 DCMR §4414.20(c) as the regulation was constituted on the date this bond was executed.

Principal

[Signature(s)]

[Name(s)]

[Title(s)]

[Corporate seal]

Corporate Surety(ies)

[Name and address]

State of incorporation: _____

Liability limit: $ _____

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $ _____

(d) A letter of credit, as specified in §4414.10(d), or § 4414.15(d), or 40 CFR 265.143(c) or 40 CFR 265.145(c) as restricted by §4401.2, shall be worded as follows, except that

the requested relevant information described within brackets shall replace the brackets and instructions:

Irrevocable Standby Letter of Credit

Director

The Department of Health, District of Columbia

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. ___ in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars $ ___, available upon presentation of

(1) your sight draft, bearing reference to this letter of credit No. ___, and

(2) your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to regulations issued under authority of the District of Columbia Hazardous Waste Management Act, as amended."

This letter of credit is effective as of [date] and shall expire on [date at least one (1) year later], but the expiration date shall be automatically extended for a period of [at least one (1) year] on [date] and on each successive expiration date, unless, at least one hundred twenty (120) days before the current expiration date, we notify both you and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for one hundred twenty (120) days after the date of receipt by both you and [owner's or operator's name], as shown on the signed return receipts.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor the draft upon presentation to us, and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Title 20 of the District of Columbia Municipal Regulations §4414.20(d) as the regulations were constituted on the date shown immediately below.

[Signature(s) and title(s) of official(s) of issuing institution] [Date]

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(e) A certificate of insurance, as specified in §4414.10(e) or §4414.15(e) or 40 CFR 265.143(d) as restricted by §4401.2, or 40 CFR 265.145(d) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Certificate of Insurance for Closure or Post-Closure Care

Name and Address of Insurer

(herein called the "Insurer"): _____

Name and Address of Insured

(herein called the "Insured"): _____

Facilities Covered: [List for each facility: The EPA Identification Number, name, address, and the amount of insurance for closure and/or the amount for post-closure care (these amounts for all facilities covered shall total the face amount shown below).]

Face Amount: _____

Policy Number: _____

Effective Date: _____

The Insurer hereby certifies that it has issued to the Insured the policy of insurance identified above to provide financial assurance for [insert "closure" or "closure and post-closure care" or "post-closure care"] for the facilities identified above. The Insurer further warrants that this policy conforms in all respects with the requirements of Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414.10(e) and §4414.15(e), 40 CFR 265.143(a) as restricted by 20 DCMR §4401.2, and 40 CFR 265.145(d) as restricted by 20 DCMR §4401.2, as applicable and as the regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with the regulations is hereby amended to eliminate the inconsistency.

Whenever requested by the Director of the Department of Health (Director), the Insurer agrees to furnish to the Director a duplicate original of the policy listed above, including all endorsements thereon.

I hereby certify that the wording of this certificate is identical to the wording specified in 20 DCMR §4414.20(e) as the regulations were constituted on the date shown immediately below.

[Authorized signature for Insurer]

[Name of person signing]

[Title of person signing]

Signature of witness or notary: _____

[Date]

(f) A letter from the chief financial officer, as specified in §4414.10(f) or §4414.15(f), or 40 CFR 265.143(e) as restricted by §4401.2, or 40 CFR 265.145(e) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Letter From Chief Financial Officer

[Address to the Director of the Department of Health].

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for closure and/or post-closure costs, as specified in Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414 and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2.

[Fill out the following four (4) paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care].

(1) This firm is the owner or operator of the following facilities in the District of Columbia for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in 20 DCMR §4414 and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: ___.

(2) This firm guarantees, through the guarantee specified in 20 DCMR §4414 and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2, the closure or post-closure care of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: ___. The firm identified above is [insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee ___; or (3) engaged in the following substantial business relationship with the owner or operator ___, and receiving the following value in consideration of this guarantee ___]. [Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter].

(3) This firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities not in the District of Columbia through the use of a test equivalent or substantially equivalent to the financial test specified in 20 DCMR §4414 and 40 CFR 265 subpart H as restricted by 20 DCMR §4401.2. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: ___.

(4) This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or post-closure care, is not demonstrated either to the Department of Health or a State through the financial

test or any other financial assurance mechanism specified in 20 DCMR §4414 or 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2, or equivalent or substantially equivalent District of Columbia or State mechanisms. The current closure and/or post-closure cost estimates not covered by the financial assurance are shown for each facility: ___.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Fill in Alternative I if the criteria of 20 DCMR §4414.10(f)(1) or §4414.15(f)(1), or 40 CFR 265.143(e)(1)(i) as restricted by 20 DCMR §4401.2 or 40 CFR 265.145 as restricted by 20 DCMR §4401.2 are used. Fill in Alternative II if the criteria of 20 DCMR §4414.10(f)(2) or §4414.15(f)(2), or of or 40 CFR 265.143(e)(1)(ii) as restricted by 20 DCMR §4401.2 or 40 CFR 265.145(e)(1)(ii) as restricted by 20 DCMR §4401.2 are used.]

Alternative I

(1) Sum of current closure and post-closure cost estimate [total of all cost estimates shown in the four (4) paragraph above] $ ___

(2)* Total liabilities [if any portion of the closure or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4] $___

(3)* Tangible net worth $___

(4)* Net worth $___

(5)* Current assets $___

(6)* Current liabilities $___

(7) Net working capital [line 5 minus line 6] $___

(8)* The sum of net income plus depreciation, depletion, and amortization $___

(9)* Total assets in U.S. (required only if less than ninety percent (90%) of firm's assets are located in the U.S.) $___

(10) Is line 3 at least ten (10) million dollars? (Yes/No) ___

(11) Is line 3 at least six (6) times line 1? (Yes/No) ___

(12) Is line 7 at least six (6) times line 1? (Yes/No) ___

(13)* Are at least ninety percent (90%) of firm's assets located in the U.S.? If not, complete line 14 (Yes/No) ___

(14) Is line 9 at least six (6) times line 1? (Yes/No) ___

(15) Is line 2 divided by line 4 less than two (2)? (Yes/No) ___

(16) Is line 8 divided by line 2 greater than one-tenth (0.1)? (Yes/No) ___

(17) Is line 5 divided by line six (6) greater than one and one-half (1.5)? (Yes/No) ___

Alternative II

(1) Sum of current closure and post-closure cost estimates [total of all cost estimates shown in the four (4) paragraphs above] $___

(2) Current bond rating of most recent issuance of this firm and name of rating service ___

(3) Date of issuance of bond ___

(4) Date of maturity of bond ___

(5)* Tangible net worth [if any portion of the closure and post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line] $___

(6)* Total assets in U.S. (required only if less than ninty percent (90%) of firm's assets are located in the U.S.) $___

(7) Is line 5 at least ten (10) million dollars? (Yes/No) ___

(8) Is line 5 at least six (6) times line 1? (Yes/No) ___

(9)* Are at least ninty percent (90%) of firm's assets located in the U.S.? If not, complete line 10 (Yes/No) ___

(10) Is line 6 at least six (6) times line 1? (Yes/No) ___

I hereby certify that the wording of this letter is identical to the wording specified in 20 DCMR §4414.20(f) as the regulations were constituted on the date shown immediately below.

[Signature] _____

[Name] _____

[Title] _____

[Date] _____

(g) A letter from the chief financial officer, as specified in §4414.17(f) or 40 CFR 265.147(f) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions.

Letter From Chief Financial Officer

[Address to the Director of the Department of Health].

I am the chief financial officer of [firm's name and address]. This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage [insert "and closure and/or post-closure care" if applicable] as specified in Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414 and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2.

[Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, and address].

The firm identified above is the owner or operator of the following facilities for which liability coverage for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences is being demonstrated through the financial test specified in 20 DCMR §4414: and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2.

The firm identified above guarantees, through the guarantee specified in 20 DCMR §4414 or 40 CFR 265, subpart H subject to the restriction of 20 DCMR §4401.2, liability coverage for [insert "sudden" or "nonsudden" of "both sudden and nonsudden"] accidental occurrences at the following facilities owned or operated by the following: ___. The firm identified above is [insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee ___; or (3) engaged in the following substantial business relationship with the owner or operator ___, and receiving the following value in consideration of this guarantee ___]. [Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.]

[If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following four (4) paragraphs regarding facilities and associated closure and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA identification number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.]

(1) The firm identified above owns or operates the following facilities in the District of Columbia for which financial assurance for closure or post-closure care or liability coverage is demonstrated through the financial test specified in §4414, and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2. The current

closure and/or post-closure cost estimate covered by the test are shown for each facility: ___.

(2) The firm identified above guarantees, through the guarantee specified in 20 DCMR §4414, and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2, the closure and post-closure care or liability coverage of the following facilities owned or operated by the guaranteed party. The current cost estimates for closure or post-closure care so guaranteed are shown for each facility: ___.

(3) This firm is demonstrating financial assurance for the closure or post-closure care of the following facilities not in the District of Columbia through the use of a test equivalent or substantially equivalent to the financial test specified in 20 DCMR §4414, and 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2. The current closure or post-closure cost estimates covered by such a test are shown for each facility: ___.

(4) The firm identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or post-closure care, is not demonstrated either to the Department of Health or a State through the financial test or any other financial assurance mechanisms specified in 20 DCMR §4414 and 40 CFR 265, subpart H subject to the restriction of 20 DCMR §4401.2, or equivalent or substantially equivalent State or District mechanisms. The current closure and/or post-closure cost estimates not covered by the financial assurance are shown for each facility: ___.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

Part A. Liability Coverage for Accidental Occurrences

[Fill in Alternative I if the criteria of 20 DCMR §4414.17(f)(1) or 40 CFR 265.147(f)(1)(i) as restricted by 20 DCMR §4401.2 are used. Fill in Alternative II if the criteria of 20 DCMR §4414.17(f)(2) or 40 CFR 265.147(f)(1)(ii) as restricted by 20 DCMR §4401.2 are used.]

Alternative I

1. Amount of annual aggregate liability coverage to be demonstrated $___.

2.* Current assets $___.

3.* Current $___.

4. Net working capital (line 2 minus line 3) $___.

5.* Tangible net worth $___.

6.* If less than ninety percent (90%) of assets are located in the U.S., give total U.S. assets $___.

7. Is line 5 at least ten (10) million dollars? (Yes/No) ___.

8. Is line 4 at least six (6) times line 1? (Yes/No) ___.

9. Is line 5 at least six (6) times line 1? (Yes/No) ___.

10.* Are at least ninety percent (90%) of assets located in the U.S.? (Yes/No) ___. If not, complete line 11.

11. Is line 6 at least six (6) times line 1? (Yes/No) ___.

Alternative II

1. Amount of annual aggregate liability coverage to be demonstrated $___.

2. Current bond rating of most recent issuance and name of rating service _____.

3. Date of issuance of bond _____.

4. Date of maturity of bond _____.

5.* Tangible net worth $___.

6.* Total assets in U.S. (required only if less than ninety percent (90%) of assets are located in the U.S.) $___.

7. Is line 5 at least ten (10) million dollars? (Yes/No) ___.

8. Is line 5 at least six (6) times line 1? ___.

9. Are at least ninety percent (90%) of assets located in the U.S.? If not, complete line 10. (Yes/No) ___.

10. Is line 6 at least six (6) times line 1? ___.

[Fill in part B if you are using the financial test to demonstrate assurance of both liability coverage and closure or post-closure care.]

Part B. Closure or Post-Closure Care and Liability Coverage

[Fill in Alternative I if the criteria of 20 DCMR §4414.10(f)(1) or §4414.15(f)(1) and §4414.17(f)(1) are used or if the criteria of 40 CFR 265.143(e)(1)(i) as restricted by 20 DCMR §4401.2, 40 CFR 265.145(e)(1)(i) as restricted by 20 DCMR §4401.2, or 40 CFR 265.147(f)(1)(i) as restricted by 20 DCMR §4401.2 are used. Fill in Alternative II if the criteria of 20 DCMR §4414.10(f)(2) or 4414.15(f)(2) and 4414.17(f)(2) are used or if the criteria of 40 CFR

265.143(e)(1)(i) as restricted by 20 DCMR §4401.2, 40 CFR 265.145(e)(1)(i) as restricted by 20 DCMR §4401.2, or 40 CFR 265.145(F)(1)(ii) as restricted by 20 DCMR §4401.2 are used.]

Alternative I

1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above) $___

2. Amount of annual aggregate liability coverage to be demonstrated $___

3. Sum of lines 1 and 2 $___

4.* Total liabilities (if any portion of your closure or post-closure cost estimates is included in your total liabilities, you may deduct that portion from this line and add that amount to lines 5 and 6) $___

5.* Tangible net worth $___

6.* Net worth $___

7.* Current assets $___

8.* Current liabilities $___

9. Net working capital (line 7 minus line 8) $___

10. The sum of net income plus depreciation, depletion, and amortization $___

11.* Total assets in U.S. (required only if less than ninety percent (90%) of assets are located in the U.S.) $___

12. Is line 5 at least ten (10) million dollars? (Yes/No)

13. Is line 5 at least six (6) times line 3? (Yes/No)

14. Is line 9 at least six (6) times line 3? (Yes/No)

15.* Are at least ninety percent (90%) of assets located in the U.S.? (Yes/No) If, not, complete line 16.

16. Is line 11 at least six (6) times line 3? (Yes/No)

17. Is line 4 divided by line 6 less than two (2)? (Yes/No)

18. Is line 10 divided by line 4 greater than one-tenth (0.1)? (Yes/No)

19. Is line 7 divided by line 8 greater than one and one-half (1.5)? (Yes/No)

Alternative II

1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above) $___

2. Amount of annual aggregate liability coverage to be demonstrated $___

3. Sum of lines 1 and 2 $___

4. Current bond rating of most recent issuance and name of rating service _____

5. Date of issuance of bond _____

6. Date of maturity of bond _____

7.* Tangible net worth (if any portion of the closure or post-closure cost estimates is included in "total liabilities" on your financial statements you may add that portion to this line) ___ $___

8.* Total assets in the U.S. (required only if less than ninety percent (90%) of assets are located in the U.S.) $___

9. Is line 7 at least ten (10) million dollars? (Yes/No)

10. Is line 7 at least six (6) times line 3? (Yes/No)

11.* Are at least ninety percent (90%) of assets located in the U.S.? (Yes/No) If not complete line 12.

12. Is line 8 at least six (6) times line 3? (Yes/No)

I hereby certify that the wording of this letter is identical to the wording specified in 20 DCMR §4414.20(g) as the regulations were constituted on the date shown immediately below.

[Signature] _____

[Name] _____

[Title] _____

[Date] _____

4414.21 A corporate guarantee, as specified in §4414.10(f) or 4414.15(f), or 40 CFR 265.143(e) or 40 CFR 265.145(e) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Corporate Guarantee for Closure or Post-Closure Care

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the [insert District of Columbia or State name], herein referred to as guarantor. This guarantee is made on behalf of the [owner or operator] of [business address], which is [one of the following: "our subsidiary"; "a subsidiary of [name and address of common parent corporation], of which guarantor is a subsidiary"; or "an entity with which guarantor has a substantial business relationship, as defined in either Title 20 of the District of Columbia Municipal Regulations (DCMR) §5400.1 or 40 CFR 265.141, as restricted by 20 DCMR §4401.2 to the Department of Health.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 20 DCMR §4414.10(f), 4414.15(f), 40 CFR 265.143(e) as restricted by 20 DCMR §4401.2, and 40 CFR 265.145(e) as restricted by 20 DCMR §4401.2.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: EPA Identification Number, name, and address. Indicate for each whether guarantee is for closure, post-closure care, or both.]

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by 20 DCMR §4413 and 40 CFR 265, subpart G as restricted by 20 DCMR §4401.2 for the closure and post-closure care of facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to the Department that in the event that [owner or operator] fails to perform [insert "closure," "post-closure care" or "closure and post-closure care"] of the above facility(ies) in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in 20 DCMR §4414 or 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2, as applicable, in the name of [owner or operator] in the amount of the current closure or post-closure cost estimates as specified in 20 DCMR §4414 or 40 CFR 265, subpart H as restricted by 20 DCMR §4401.2.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within ninety (90) days, by certified mail, notice to the Director of the Department (Director) and to [owner or operator] that he or she intends to provide alternate financial assurance as specified in 20 DCMR §4414 or 40 CFR 265, subpart H as restricted by §4401.2, as applicable, in the name of [owner or operator]. Within one hundred twenty (120) days after the end of that fiscal year, the guarantor shall establish the financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the Director by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within ten (10) days after commencement of the proceeding.

7. Guarantor agrees that within thirty (30) days after being notified by the Director of a determination that guarantor no longer meets the financial test criteria or that he or she is disallowed from continuing as a guarantor of closure or post-closure care, he or she shall establish alternate financial assurance as specified in 20 DCMR §4414 or 40 CFR 265, subpart H subject to the restrictions of 20 DCMR §4401.2, as applicable, in the name of [owner or operator] unless [owner or operator] has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to Chapter 44 or 40 CFR Part 265 subject to the restrictions of 20 DCMR §4401.2.

9. Guarantor agrees to remain bound under this guarantee for as long as [owner or operator] must comply with the applicable financial assurance requirements of 20 DCMR §4414 or 40 CFR 265, subpart H subject to the restrictions of 20 DCMR §4401.2 for the above-listed facilities, except as provided in paragraph 10 of this agreement.

10. [Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator]:

Guarantor may terminate this guarantee by sending notice by certified mail to the Director and to [owner or operator], provided that this guarantee may not be terminated unless and until [the owner or operator] obtains, and the Director approves, alternate closure and/or post-closure care coverage complying with 20 DCMR §§4414.10, 4414.15, 40 CFR 265.143 as restricted by 20 DCMR §4401.2, or 40 CFR 265.145 as restricted by 20 DCMR §4401.2.

[Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with its owner or operator]

Guarantor may terminate this guarantee one hundred twenty (120) days following the receipt of notification, through certified mail, by the Director and by [the owner or operator].

11. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in 20 DCMR §4414 or 40 CFR 265, subpart H subject to the restrictions of 20 DCMR §4401.2, as applicable, and obtain written approval of such assurance from the Director within ninety (90) days after a notice of cancellation by the guarantor is received by the Director from guarantor, guarantor shall provide such alternate financial assurance in the name of [owner or operator].

12. Guarantor expressly waives notice of acceptance of this guarantee by the Department or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in 20 DCMR §4414.21 as the regulations were constituted on the date first above written.

Effective date: _____

[Name of guarantor] _____

[Authorized signature for guarantor] _

[Name of person signing] _____

[Title of person signing] _____

Signature of witness or notary: _____

4414.22 A guarantee, as specified in §4414.17(g), shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Guarantee for Liability Coverage

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of [if incorporated within the United States insert "the State of ____" or the "District of Columbia" and insert name of State or District of Columbia; if incorporated outside the United States insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the District of Columbia or the State of the principal place of business], herein referred to as guarantor. This guarantee is made on behalf of [owner or operator] of [business address], which is one of the following: "our subsidiary;" "a subsidiary of [name and address of common parent corporation], or which guarantor is a subsidiary;" or "an entity with which guarantor has a substantial business relationship, as defined in 20 DCMR §5400.1, to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 20 DCMR §4414.17(g) and 40 CFR 265.147(g) as restricted by 20 DCMR §4401.2.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: EPA identification number, name, and address; and if guarantor is incorporated outside the United States list the name and address of the guarantor's registered agent in each State.] This corporate guarantee satisfies District of Columbia Hazardous Waste Regulations third-party liability requirements for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences in above-named owner or operator facilities for

coverage in the amount of [insert dollar amount] for each occurrence and [insert dollar amount] annual aggregate.

3. For value received from [owner or operator], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [sudden and/~~or~~ nonsudden] accidental occurrences, arising from the operation of the above-named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from the injury or damage, the guarantor shall satisfy the judgment(s), award(s) or settlement agreement(s) up to the limits of coverage identified above.

4. This obligation does not apply to any of the following:

(A) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert owner or operator] would be obligated to pay in the absence of the contract or agreement.

(B) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(C) Bodily injury to:

(i) An employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator]; or

(ii) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert owner or operator]. This exclusion applies:

(1) Whether [insert owner or operator] may be liable as an employer or in any other capacity; and

(2) To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in paragraphs (i) and (ii).

(D) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(E) Property damage to:

(i) Any property owned, rented, or occupied by [insert owner or operator];

(ii) Premises that are sold, given away or abandoned by [insert owner or operator] if the property damage arises out of any part of those premises;

(iii) Property loaned to [insert owner or operator];

(iv) Personal property in the care, custody or control of [insert owner or operator]; or

(v) That particular part of real property on which [insert owner or operator] or any contractors or subcontractors working directly or indirectly on behalf of [insert owner or operator] are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within ninety (90) days, by certified mail, notice to the Director and to [owner or operator] that he or she intends to provide alternate liability coverage as specified in 20 DCMR §4414.17 and 40 CFR 265.147 as restricted by §4401.2, as applicable, in the name of [owner or operator]. Within one hundred twenty (120) days after the end of such fiscal year, the guarantor shall establish this liability coverage unless [owner or operator] has done so.

6. The guarantor agrees to notify the Director by certified mail of a voluntary or involuntary proceeding under title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within ten (10) days after commencement of the proceeding.

7. Guarantor agrees that within thirty (30) days after being notified by the Director of a determination that guarantor no longer meets the financial test criteria or that he or she is disallowed from continuing as a guarantor, he or she shall establish alternate liability coverage as specified in 20 DCMR §4414.17 and 40 CFR 265.147 as restricted by 20 DCMR §4401.2 in the name of [owner or operator], unless [owner or operator] has done so.

8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements set by 20 DCMR §4414.17 and 40 CFR 265.147 as restricted by 20 DCMR §4401.2, provided that the modification will become effective only if the Director does not disapprove the modification within thirty (30) days of receipt of notification of the modification.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable requirements of 20 DCMR §4414.17 and 40 CFR 265.147 as restricted by 20 DCMR §4401.2 for the above-listed facility(ies), except as provided in paragraph 10 of this agreement.

10. [Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator]:

Guarantor may terminate this guarantee by sending notice by certified mail to the Director and to [owner or operator], provided that this guarantee may not be terminated unless and until [the owner or operator] obtains, and the Director approves, alternate liability coverage complying with 20 DCMR §4414.17 or 40 CFR 265.147 as restricted by 20 DCMR §4401.2.

[Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with the owner or operator]:

Guarantor may terminate this guarantee one hundred twenty (120) days following receipt of notification, through certified mail, by the Director and by [the owner or operator].

11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

13. The Guarantor shall satisfy a third-party liability claim only on receipt of one (1) of the following documents:

(a) Certification from the Principal and the third-party claimant(s) that the liability claim should be paid. The certification shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Certification of Valid Claim

The undersigned, as parties [insert Principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Principal's hazardous waste treatment, storage, or disposal facility should be paid in the amount of $

[Signatures] _____

Principal _____

(Notary) Date _____

[Signatures] _____

Claimant(s) _____

(Notary) Date _____

(b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee shall be considered [insert "primary" or "excess"] coverage.

I hereby certify that the wording of the guarantee is identical to the wording specified in 20 DCMR §4414.22 as the regulations were constituted on the date shown immediately below.

Effective date: _____

[Name of guarantor] _____

[Authorized signature for guarantor] _____

[Name of person signing] _____

[Title of person signing] _____

Signature of witness of notary: _____

4414.23 A hazardous waste facility liability endorsement as required in §4414.17 or 40 CFR 265.147, as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Hazardous Waste Facility Liability Endorsement

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414.17 or 40 CFR 265.147 as restricted by 20 DCMR §4401.2. The coverage applies at [list EPA Identification Number, name, and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs.

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsections (a) through (e):

   (a) Bankruptcy or insolvency of the insured shall not relieve the Insurer of its obligations under the policy to which this endorsement is attached;

   (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 20 DCMR §4414.17(f) or 40 CFR 265.147(f) as restricted by 20 DCMR §4401.2;

   (c) Whenever requested by the Director of the Department of Health (Director), the Insurer agrees to furnish to the Director a signed duplicate original of the policy and all endorsements;

(d) Cancellation of this endorsement, whether by the Insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, shall be effective only upon written notice and only after the expiration of sixty (60) days after a copy of the written notice is received by the Director; and

(e) Any other termination of this endorsement shall be effective only upon written notice and only after the expiration of thirty (30) days after a copy of the written notice is received by the Director(s) of the EPA Region(s) in which the facility(ies) is (are) located.

Attached to and forming part of policy No. ___ issued by [name of Insurer], herein called the Insurer, of [address of Insurer] to [name of insured] of [address] this ___ day of___, 19___ . The effective date of said policy is ___ day of ___, 19___ .

I hereby certify that the wording of this endorsement is identical to the wording specified in 20 DCMR §4414.23 as the regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of Authorized Representative of Insurer]

[Type name]

[Title], Authorized Representive of [name of Insurer]

[Address of Representative]

4414.24 A certificate of liability insurance as required in §4414.17 or 40 CFR 265.147, as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Hazardous Waste Facility Certificate of Liability Insurance

1. [Name of Insurer], (the "Insurer"), of [address of Insurer] hereby certifies that it has issued liability insurance covering bodily injury and property damage to [name of insured], (the "insured"), of [address of insured] in connection with the insured's obligation to demonstrate financial responsibility under Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414.17 or 40 CFR 265.147 as restricted by 20 DCMR §4401.2. The coverage applies at [list EPA Identification Number, name, and address for each facility] for [insert "sudden accidental occurrences," "nonsudden accidental occurrences," or "sudden and nonsudden accidental occurrences"; if coverage is for multiple facilities and the coverage is different for different facilities, indicate which facilities are insured for sudden accidental occurrences, which are insured for nonsudden accidental occurrences, and which are insured for both]. The limits of liability are [insert the dollar amount of the "each occurrence" and "annual aggregate" limits of the Insurer's liability], exclusive of legal defense costs. The coverage is

provided under policy number ___ , issued on [date]. The effective date of the policy is [date].

2. The Insurer further certifies the following with respect to the insurance described in Paragraph 1:

(a) Bankruptcy or insolvency of the insured shall not relieve the [illegible] of its obligations under the policy.

(b) The Insurer is liable for the payment of amounts within [illegible] deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in 20 DCMR §4414.17(f) or 40 CFR 265.147(f), as restricted by 20 DCMR §4401.2.

(c) Whenever requested by the Director of the Department of Health (Director), the Insurer agrees to furnish to the Director a signed duplicate original of the policy and all endorsements.

(d) Cancellation of the insurance, whether by the insurer, the insured, a parent corportation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, shall be effective only upon written notice and only after the expiration of sixty (60) days after a copy of the written notice is received by the Director.

(e) Any other termination of the insurance shall be effective only upon written notice and only after the expiration of thirty (30) days after a copy of the written notice is received by the Director.

I hereby certify that the wording of this instrument is identical to the wording specified in 20 DCMR §4414.24 as the regulation was constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

[Signature of authorized representative of Insurer]

[Type name]

[Title], Authorized Representative of [name of Insurer]

[Address of Representative]

4414.25 A letter of credit, as specified in §4414.17(h) or 40 CFR 265.147(h), as restricted by § 4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Irrevocable Standby Letter of Credit

Name and Address of Issuing Institution ___

Director _____

The Department of Health, District of Columbia

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. ___ in the favor of ["any and all third-party liability claimants" or insert name of trustee of the standby trust fund], at the request and for the account of [owner or operator's name and address] for third-party liability awards or settlements up to [in words] U.S. dollars $___ per occurrence and the annual aggregate amount of [in words] U.S. dollars $___, for sudden accidental occurrences and/or for third-party liability awards or settlements up to the amount of [in words] U.S. dollars $___ per occurrence, and the annual aggregate amount of [in words] U.S. dollars $___, for nonsudden accidental occurrences available upon presentation of a sight draft bearing reference to this letter of credit No. ___, and [insert the following language if the letter of credit is being used without a standby trust fund: "(1) a signed certificate reading as follows:

Certificate of Valid Claim

The undersigned, as parties [insert principal] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operations of [principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ]. We hereby certify that the claim does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement;

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law;

(c) Bodily injury to:

(1) An employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal].

This exclusion applies:

(A) Whether [insert principal] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in paragraphs (1) and (2); and

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft;

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert principal];

(2) Premises that are sold, given away or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert principal];

(4) Personal property in the care, custody or control of [insert principal];

(5) That particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

[Signatures] _____

Grantor _____

[Signatures] _____

Claimant(s) _____

(6) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

This letter of credit is effective as of [date] and shall expire on [date] at least one year later], but the expiration date shall be automatically extended for a period of [at least one year] on [date and on each successive expiration date, unless, at least one hundred twenty (120) days before the current expiration date, we notify you, the Director, and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor the draft upon presentation to us.

[Insert the following language if a standby trust fund is not being used: "In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered [insert "primary" or "excess" coverage]."

We certify that the wording of this letter of credit is identical to the wording specified in 20 DCMR §4414.25 as the regulations were constituted on the date shown immediately below. [Signature(s) and title(s) of official(s) of issuing institution] [Date].

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

4414.26 A surety bond, as specified in, §4414.17(i) or 40 CFR 265.147(i), as restricted by §4401.2, shall be worded as follows: except that the requested relevant information described within brackets shall replace the brackets and instructions:

Payment Bond

Surety Bond No. [Insert number]

Parties [Insert name and address of owner or operator], Principal, incorporated in [Insert District of Columbia or State of incorporation] of [Insert District of Columbia or city and State of principal place of business] and [Insert name and address of surety company(ies)], Surety Company(ies), of [Insert surety(ies) place of business].

EPA Identification Number, name, and address for each facility guaranteed by this bond: ___

	Sudden accidental occurrences	Nonsudden accidental occurrences
Penal Sum Per Occurrence	[insert amount]	[insert amount]
Annual Aggregate	[insert amount]	[insert amount]

Purpose: This is an agreement between the Surety(ies) and the Principal under which the Surety(ies), its(their) successors and assignees, agree to be responsible for the payment of claims against the Principal for bodily injury and/or property damage to third parties caused by ["sudden" and/or "nonsudden"] accidental occurrences arising from operations of the facility or group of facilities in the sums prescribed herein; subject to the governing provisions and the following conditions.

Governing Provisions:

(1) Section 6 of the District of Columbia Hazardous Waste Management Act of 1977, effective March 23, 1978 (D.C. Code §6-705, 1995 Repl. Vol.), as amended.

(2) Rules and regulations of the Departent of Consumer and Regulatory Affairs, particularly Title 20 of the District of Columbia Municipal Regulations (DCMR) §4414.17, or 40 CFR 265.147 ~~as restricted~~ by 20 DCMR §4401.2 (if applicable).

Conditions:

(1) The Principal is subject to the applicable governing provisions that require the Principal to have and maintain liability coverage for bodily injury and property damage to third

parties caused by ["sudden" and/or "nonsudden"] accidental occurrences arising from operations of the facility or group of facilities. This obligation does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits, or unemployment compensation law or similar law.

(c) Bodily injury to:

(1) An employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal]. This exclusion applies:

(A) Whether [insert principal] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert principal];

(2) Premises that are sold, given away, or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert principal];

(4) Personal property in the care, custody or control of [insert principal];

(5) That particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

(2) This bond assures that the Principal shall satisfy valid third party liability claims, as described in condition 1.

(3) If the Principal fails to satisfy a valid third party liability claim, as described above, the Surety(ies) becomes liable on this bond obligation.

(4) The Surety(ies) shall satisfy a third party liability claim only upon the receipt of one of the following documents:

(a) Certification from the Principal and the third party claimant(s) that the liability claim should be paid. The certification shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Certification of Valid Claim

The undersigned, as parties [insert name of Principal] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidential occurrence arising from operating [Principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ].

[Signature]

Principal

[Notary] Date

[Signature(s)]

Claimant(s)

[Notary] Date

or (b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

(5) In the event of combination of this bond with another mechanism for liability coverage, this bond shall be considered [insert "primary" or "excess"] coverage.

(6) The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments will amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the Surety(ies) hereunder exceed the amount of the annual aggregate penal sum, provided that the Surety(ies) furnish(es) notice to the Director forthwith of all claims filed and payments made by the Surety(ies) under this bond.

(7) The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and the Director, provided, however, that cancellation shall not occur during the one hundred twenty (120) days beginning on the date of receipt of the notice of cancellation by the Principal and the Director, as evidenced by the return receipt.

(8) The Principal may terminate this bond by sending written notice to the Surety(ies) and to the Director.

(9) The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules and regulations and agree(s) that no amendment shall in any way alleviate its (their) obligation on this bond.

(10) This bond is effective from [insert date] (12:01 a.m., standard time, at the address of the Principal as stated herein) and shall continue in force until terminated as described above.

In Witness Whereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 20 DCMR §4414.26, as the regulations were constituted on the date this bond was executed.

PRINCIPAL

[Signature(s)]

[Name(s)]

[Title(s)]

[Corporate Seal]

CORPORATE SURETY[IES]

[Name and address]

State of incorporation: _____

Liability Limit: $ _____

[Signature(s)]

[Name(s) and title(s)]

[Corporate seal]

[For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $ _____

4414.27 A trust agreement, as specified in §4414.17(j) or 40 CFR 265.147(j) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Trust Agreement

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [District of Columbia or name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert, "incorporated in the District or the State of ___" or "a national bank"], the "trustee."

Whereas, the Department of Health, hereafter referred to as "the Department", has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a trust to assure all or part of this financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefor, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A [on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, hereinafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of ___ [up to one (1) million dollars] per occurrence and ___[up to two (2) million dollars] annual aggregate for sudden accidental occurrences and ___ [up to three (3) million dollars] per occurrence and ___ [up to six (6) million dollars] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) Whether [insert Grantor] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert Grantor];

(2) Premises that are sold, given away or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) Property loaned to [insert Grantor];

(4) Personal property in the care, custody or control of [insert Grantor];

(5) That particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. The property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions

made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by making payments from the Fund only upon receipt of one of the following documents;

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Certification of Valid Claim

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ].

[Signatures]

Grantor

[Signatures]

Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstance then prevailing which persons of prudence, acting in a like capacity and familiar with these matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940,

as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held unless they are securities or other obligations of the Federal, a State government, or the District of Columbia;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal, State government, or the District of Columbia; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common commingled, or collective trust fund created by the Trustee in which the fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 81a-1 *et seq.*, including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote the shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of the depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all the securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other

banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal, State government, or the District of Columbia; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuations. The Trustee shall annually, at least thirty (30) days before the anniversary date of establishment of the Fund, furnish to the Grantor and to the Director a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than sixty (60) days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within ninety (90) days after the statement has been furnished to the Grantor and the Director shall constitute a conclusively binding assent by the Grantor barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but the resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Director, and the present Trustee by certified mail ten (10) days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by the persons designated in the attached Exhibit A or other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Director to the Trustee shall be in writing, signed by the Director, or his or her designee, and the Trustee shall act and shall be fully protected in acting in accordance with the orders, requests, and instructions.

The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or hereunder has occurred. The Trustee shall have no duty to act in the absence of the orders, requests, and instructions from the Grantor and/or the Director, except as provided for herein.

Section 15. Notice of Nonpayment. If a payment for bodily injury or property damage is made under Section 4 of this trust, the Trustee shall notify the Grantor of the payment and the amount(s) thereof within five (5) working days. The Grantor shall, on or before the anniversary date of the establishment of the Fund following the notice, either make payments to the Trustee in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under Section 4, or shall provide written proof to the Trustee that other financial assurance for liability coverage has been obtained equalling the amount necessary to return the trust to its value prior to the payment of claims. If the Grantor does not either make payments to the Trustee or provide the Trustee with such proof, the Trustee shall within ten (10) working days after the anniversary date of the establishment of the Fund provide a written notice of nonpayment to the Director.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Director, or by the Trustee and the Director if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Director, or by the Trustee and the Director, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

The Director shall agree to termination of the Trust when the owner or operator substitutes alternate financial assurance as specified in this section.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Director issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the District of Columbia.

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the

date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Title 20 of the District of Columbia Municipal Regulations §§4414.27 through 4414.28 as such regulations were constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

4414.28 The following is an example of the certification of acknowledgement which shall accompany the trust agreement for a trust fund as specified in §4414.17(j) or 40 CFR 265.147(j) as restricted by §4401.2.

District of Columbia or State of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to that instrument is the corporate seal; that it was so affixed by order of the Board of Directors of the corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

4414.29 A standby trust agreement, as specified in §4414.17(h), or 40 CFR 265.147(h) as restricted by §4401.2, shall be worded as follows, except that the requested relevant information described within brackets shall replace the brackets and instructions:

Standby Trust Agreement

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of a State or the District of Columbia] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert, "incorporated in the District of Columbia or the State of ___ " or "a national bank"], the "trustee."

Whereas Department of Health, hereafter referred to as "the Department", has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of the financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefor, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A [on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund, hereafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of ___ [up to one (1) million dollars] per occurrence and ___ [up to two (2) million dollars] annual aggregate for sudden accidental occurrences and ___ [up to three (3) million dollars] per occurrence and ___ [up to six (6) million dollars] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee or [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) Whether [insert Grantor] may be liable as an employer or in any other capacity; and

(B) To any obligation to share damages with or repay another person who shall pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) Any property owned, rented, or occupied by [insert Grantor];

(2) Premises that are sold, given away or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) Property loaned [insert Grantor];

(4) Personal property in the care, custody or control of [insert Grantor];

(5) That particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the proceeds of the letter of credit deposited into the Fund. These proceeds and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Department.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification shall be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ].

[Signature] _____

Grantor _____

[Signatures] _____

Claimant(s) _____

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of the proceeds from the letter of credit drawn upon by the Trustee in accordance with the requirements of §4414.25 and Section 4 of this Agreement.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his or her duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing that persons of prudence, acting in a like capacity and familiar with these matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal, a State government, or the District of Columbia;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 *et seq.*, including one that may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified central depositary even though, when so deposited, the securities may be merged and held in bulk in the name of the nominee of the depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all the securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal, State government, or the District of Columbia; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the

compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements to the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but the resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment; the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Director and the present Trustee by certified mail ten (10) days before the change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests, certifications of valid claims, and instructions to the Trustee shall be in writing, signed by persons designated in the attached Exhibit A or other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Director hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Director, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Director, or by the Trustee and the Director if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Director, or by the Trustee and the Director, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be paid to the Grantor.

The Director shall agree to termination of the Trust when the owner or operator substitutes alternative financial assurance as specified in this section.

Section 16. Immunity and indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration

of this Trust, or in carrying out any directions by the Grantor and the Director issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonable incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the District of Columbia.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation of the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Title 20 of the District of Columbia Municipal Regulations Title 20 of the District of Columbia Municipal Regulations §§4414.29 through 4414.30 as such regulations were constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

4414.30 The following is an example of the certification of acknowledgement that shall accompany the trust agreement for a standby trust fund as specified in §4414.17(h) or 40 CFR 265.147(h) as restricted by §4401.2.

District of Columbia or State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to the instrument is the corporate seal; that it was so affixed by order of the ~~Board~~ of Directors of the corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

4415 USE AND MANAGEMENT OF CONTAINERS

4415.1 The regulations in §4415 apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as §§4400.1 through 4400.12 provides otherwise.

4415.2 Under §§4104 and 4109.12(c), 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 §4104. In that event, management of the container is exempt from the requirements of §4415.

4415.3 If a container holding hazardous waste is not in good condition (for example, severe rusting, apparent structural defects) or if it begins to leak, the owner or operator shall 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.

4415.4 The owner or operator shall use a container made of or lined with materials that 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.

4415.5 A container holding hazardous waste shall always be closed during storage, except when it is necessary to add or remove waste.

4415.6 A container holding hazardous waste shall not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.

4415.7 At least weekly, the owner or operator shall 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.

4415.8 Container storage areas shall have a containment system that is designed and operated in accordance with §4415.9, except as otherwise provided by §4415.10.

4415.9 A containment system shall be designed and operated as follows:

(a) A base that 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 shall underlie the containers;

(b) The base shall be sloped or the containment system shall 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;

(c) The containment system shall have sufficient capacity to contain ten percent (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;

(d) Run-on into the containment system shall be prevented unless the collection system has sufficient excess capacity in addition to that required in §4415.9(c) to contain any run-on that might enter the system; and

(e) Spilled or leaked waste and accumulated precipitation shall be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system;

(f) If the collected material is a hazardous waste under chapter 41, it shall be managed as a hazardous waste in accordance with all applicable requirements of chapters 42 through 45. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of §§3 and 7 of the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Code §§6-922 and 926, 1995 Repl. Vol.).

4415.10 Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by §4415.9, except as provided by §4415.11 or provided that:

(a) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or

(b) The containers are elevated or are otherwise protected from contact with accumulated liquid.

4415.11 Storage areas that store containers holding the wastes listed below that do not contain free liquids shall have a containment system defined by §4415.9:

(a) FO20, FO21, FO22, FO23, FO26, and FO27;

(b) [Reserved]

4415.12 Containers holding ignitable or reactive waste shall be located at least fifteen (15) meters (fifty (50) feet) from the facility's property line.

4415.13 Incompatible wastes, or incompatible wastes and materials (see appendix V for examples), shall not be placed in the same container, unless §4406.2 is complied with.

4415.14 Hazardous waste shall not be placed in an unwashed container that previously held an incompatible waste or material.

4415.15 As required by §§4403.4, the waste analysis plan shall include analyses needed to comply with §§4415.13, 4415.14, and 4415.16. Also, §4406.3 requires wastes analyses, trial tests or other documentation to assure compliance with §4406.2. As required by §§4411.10 through 4411.11, the owner or operator shall place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.

4415.16 A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, or open tanks shall be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

4415.17 At closure, all hazardous waste and hazardous waste residues shall be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues shall be decontaminated or removed.

4415.18 At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with §4100.16 that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of chapters 42 through 45.

4415.19 The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of §§4428 through 4449 and 4474 through 4483.

4416 TANK SYSTEMS

4416.1 The requirements of §4416 apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste except as otherwise provided in §§4416.2 through 4416.4 or in §§4400.1 through 4400.12.

4416.2 Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in §§4416.16 through 416.24. To demonstrate the absence or presence of free liquids in the stored/treated waste, the following test shall 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 §4017.

4416.3 Tank systems, including sumps, as defined in §5400.1, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in §4416.16.

4416.4 Tanks, sumps, and other collection devices or systems used in conjunction with drip pads, as defined in §5400.1 and regulated under §4424, shall meet the requirements of §4416.

4416.5 For each existing tank system that does not have secondary containment meeting the requirements of §§4416.16 through 4416.24, the owner or operator shall determine whether the tank system is not leaking or is unfit for use. Except as provided in §4416.7, the owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified registered professional engineer, in accordance with §4601.22, that attests to the tank system's integrity by January 12, 1988 for HSWA tanks, as defined in §5400.1, and March 1, 1997 for non-HSWA tanks, as defined in §5400.1.

4416.6 The assessment of an existing tank system's integrity shall determine whether 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 shall consider the following:

(a) Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

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

(c) Existing corrosion protection measures;

(d) Documented age of the tank system, if available (otherwise, an estimate of the age); and

(e) Results of a leak test, internal inspection, or other tank integrity examination such that:

(1) For non-enterable underground tanks, the assessment shall 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

(2) For other than non-enterable underground tanks and for ancillary equipment, this assessment shall 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 §4601.22, that addresses cracks, leaks, corrosion, and erosion.

4416.7 Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986 for HSWA tanks, as defined in §5400.1, and subsequent to March 1, 1996 for non-HSWA tanks, as defined in §5400.1, shall conduct this assessment within twelve (12) months after the date that the waste becomes a hazardous waste.

4416.8 If, as a result of the assessment conducted in accordance with §4416.5, a tank system is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of §4416.32.

4416.9 Owners or operators of new tank systems or components shall 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 §4601.22, attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment shall show whether 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 shall not collapse, rupture, or fail. This assessment, which shall be used by the Director to review and approve or disapprove the acceptability of the tank system design, shall include, at a minimum, the following information:

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

(b) Hazardous characteristics of the waste(s) to be handled;

(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:

(1) Factors affecting the potential for corrosion, including but not limited to:

(A) Soil moisture content;

(B) Soil pH;

(C) Soil sulfides level;

(D) Soil resistivity;

(E) Structure to soil potential;

(F) Influence of nearby underground metal structures (for example, piping);

(G) Existence of stray electric current;

(H) Existing corrosion-protection measures (for example, coating, cathodic protection), and

(2) 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:

(A) Corrosion-resistant materials of construction such as special alloys, or fiberglass reinforced plastic;

(B) Corrosion-resistant coating (such as epoxy, or fiberglass) with cathodic protection (for example, impressed current or sacrificial anodes); and

(C) Electrical isolation devices such as insulating joints, or flanges.

(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

(e) Design considerations to ensure that:

(1) Tank foundations will maintain the load of a full tank;

(2) 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 §4407.1; and

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

4416.10 The owner or operator of a new tank system shall 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, shall inspect the system for the presence of any of the following items:

(a) Weld breaks;

(b) Punctures;

(c) Scrapes of protective coatings;

(d) Cracks;

(e) Corrosion; and

(f) Other structural damage or inadequate construction/installation. All discrepancies shall be remedied before the tank system is covered, enclosed, or placed in use.

4416.11 New tank systems or components that are placed underground and that are backfilled shall 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.

4416.12 All new tanks and ancillary equipment shall 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 shall be performed before the tank system is covered, enclosed, or placed into use.

4416.13 Ancillary equipment shall be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

4416.14 The owner or operator shall provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under §4416.9(c), 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 shall be supervised by an independent corrosion expert to ensure proper installation.

4416.15 The owner or operator shall 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 §§4416.10 through 4416.14, that attest that the tank system was properly designed and installed and that repairs, pursuant to §§4416.10 and 4416.12, were performed. These written statements shall also include the certification statement as required in §4601.22.

4416.16 In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of §4416.16 shall be provided (except as provided in §§4416.21 and 4416.22):

(a) For all new tank systems or components, before they are put into service;

(b) For all existing tank systems used to store or treat EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027, within two (2) years after January 12, 1987, for HSWA tanks, as defined in §5400.1, and two (2) years after March 1, 1996, for non-HSWA tanks, as defined in §5400.1;

(c) For those existing tank systems of known and documented age, within two (2) years after January 12, 1987, for HSWA tanks, as defined in §5400.1, and two (2) years after March 1, 1996, for non-HSWA tanks, as defined in §5400.1, or when the tank system has reached fifteen (15) years of age, whichever comes later;

(d) For those existing tank systems for which the age cannot be documented, within eight (8) years of January 12, 1987, for HSWA tanks, as defined in §5400.1, and within eight (8) years after March 1, 1996, for non-HSWA tanks, as defined in §5400.1; but if the age of the facility is greater than seven (7) years, secondary containment shall be provided by the time the facility reaches fifteen (15) years of age, or within two (2) years of January 12, 1987, for HSWA tanks, as defined in §5400.1, or within two (2) years after March 1, 1996, for non-HSWA tanks, as defined in §5400.1, whichever comes later; and

(e) For tank systems that store or treat materials that become hazardous wastes subsequent to January 12, 1987, for HSWA tanks, as defined in §5400.1, and March 1, 1996, for non-HSWA tanks, as defined in §5400.1, within the time intervals required in §§4416.16(a) through 4416.16(d), except that the date that a material becomes a hazardous waste shall be used in place of January 12, 1987, for HSWA tanks, as defined in §5400.1, and March 1, 1996, for non-HSWA tanks, as defined in §5400.1.

4416.17 Secondary containment systems shall be:

(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

(b) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

4416.18 To meet the requirements of §4416.17, secondary containment systems shall be at a minimum:

(a) Constructed of or lined with materials that are compatible with the wastes(s) to be placed in the tank system and shall 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);

(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;

(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 twenty-four (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 twenty-four (24) hours; and

(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 shall be removed from the secondary containment system within twenty-four (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 twenty-four (24) hours.

4416.19 Secondary containment for tanks shall include one or more of the following devices:

(a) A liner (external to the tank);

(b) A vault;

(c) A double-walled tank; or

(d) An equivalent device as approved by the Director.

4416.20 In addition to the requirements of §§4416.17, 4416.18, and 4416.19, secondary containment systems shall satisfy the following requirements:

(a) External liner systems shall be:

(1) Designed or operated to contain one hundred percent (100%) of the capacity of the largest tank within its boundary;

(2) 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. The additional capacity shall be sufficient to contain precipitation from a twenty-five (25) year, twenty-four (24) hour rainfall event;

(3) Free of cracks or gaps; and

(4) 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) (that is, capable of preventing lateral as well as vertical migration of the waste); and

(b) Vault systems shall be:

(1) Designed or operated to contain one hundred percent (100%) of the capacity of the largest tank within its boundary;

(2) 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. The additional capacity shall be sufficient to contain precipitation from a twenty-five (25) year, twenty-four (24) hour rainfall event:

(3) Constructed with chemical-resistant water stops in place at all joints (if any):

(4) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that shall prevent migration of waste into the concrete;

(5) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

(A) Meets the definition of ignitable waste under §§4201.6 through 4201.8; or

(B) Meets the definition of reactive waste under §§4201.6 through 4201.8, and may form an ignitable or explosive vapor; and

(6) 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; and

(c) Double-walled tanks shall be:

(1) Designed as an integral structure (that is, an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell;

(2) Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell; and

(3) Provided with a built-in continuous leak detection system capable of detecting a release within twenty-four (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 twenty-four (24) hours.

4416.21 Ancillary equipment shall be provided with secondary containment (for example, trench, jacketing, double-walled piping) that meets the requirements of §§4416.17 and 4416.18 except for:

(a) Aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;

(b) Welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;

(c) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and

(d) Pressurized aboveground piping systems with automatic shut-off devices (for example, 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.

4416.22 The owner or operator may obtain a variance from the requirements of §§4416.16 through 4416.21 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 §4416.22(b), be exempted from the secondary containment requirements of §4416.22.

(a) In deciding whether to grant a variance based on a demonstration of equivalent protection of ground water and surface water, the Director shall consider:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

(3) The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and ground water; and

(4) 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; and

(b) In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the Director shall consider:

(1) The potential adverse effects on ground water, surface water, and land quality taking into account:

(A) The physical and chemical characteristics of the waste in the tank system, including its potential for migration;

(B) The hydrogeological characteristics of the facility and surrounding land;

(C) The potential for health risks caused by human exposure to waste constituents;

(D) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(E) The persistence and permanence of the potential adverse effects; and

(2) The potential adverse effects of a release on ground-water quality, taking into account:

(A) The quantity and quality of ground water and the direction of ground-water flow;

(B) The proximity and withdrawal rates of ground-water users;

(C) The current and future uses of ground water in the area; and

(D) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground-water quality; and

(3) The potential adverse effects of a release on surface water quality, taking into account:

(A) The quantity and quality of ground water and the direction of ground-water flow;

(B) The patterns of rainfall in the region;

(C) The proximity of the tank system to surface waters;

(D) The current and future uses of surface waters in the area and any water quality standards established for those surface waters; and

(E) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality; and

(4) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

(A) The patterns of rainfall in the region; and

(B) The current and future uses of the surrounding land; and

(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 §4416.22(a), 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), shall:

(1) Comply with the requirements of §4416.32, except paragraph (d); and

(2) Decontaminate or remove contaminated soil to the extent necessary to:

(A) 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

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

(3) If contaminated soil cannot be removed or decontaminated in accordance with §4416.22(c)(2), comply with the requirement of §4416.34; and

(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 §4416.22(a), 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), shall:

(1) Comply with the requirements of §4416.32(a), (b), (c), and (d); and

(2) 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 shall comply with the requirements of §4416.34; and

(3) If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of §§4416.16 through 4416.21 or reapply for a variance from secondary containment and meet the requirements for new tank systems in §§4416.9 through 4416.15 if the tank system is replaced. The owner or operator shall comply with these requirements even if contaminated soil can be decontaminated or removed and ground water or surface water has not been contaminated.

4416.23 The owner or operator shall follow the following procedures to request a variance from secondary containment:

(a) The owner or operator shall notify the Director in writing that he or she intends to conduct and submit a demonstration for a variance from secondary containment as allowed in §4416.22 according to the following schedule:

(1) For existing tank systems, at least twenty-four (24) months before the date that secondary containment will be provided in accordance with §4416.16; and

(2) For new tank systems, at least thirty (30) days before entering into a contract for installation; and

(b) As part of the notification, the owner or operator shall 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 shall address each of the factors listed in §4416.22(a) or §4416.22(b);

(c) The owner or operator shall complete the demonstration for a variance within one hundred eighty (180) days after notifying the Director of an intent to conduct the demonstration; and

(d) If a variance is granted under §4416.23(d), the Director shall require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.

4416.24 All tank systems, until secondary containment that meets the requirements of §4416.24 is provided, shall comply with the following:

(a) For non-enterable underground tanks, a leak test that meets the requirements of §4416.6(e) or other tank integrity method, as approved or required by the Director, shall be conducted at least annually;

(b) For other than non-enterable underground tanks, the owner or operator shall either conduct a leak test as in §4416.24(a) 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 shall be adequate to detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The owner or operator shall 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 shall 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;

(c) For ancillary equipment, a leak test or other integrity assessment as approved by the Director shall be conducted at least annually;

(d) The owner or operator shall maintain on file at the facility a record of the results of the assessments conducted in accordance with §§4416.24(a) through 4416.24(c); and

(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 §§4416.24(a) through 4416.24(c), the owner or operator shall comply with the requirements of §4416.32.

4416.25 Hazardous wastes or treatment reagents shall 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.

4416.26 The owner or operator shall use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:

(a) Spill prevention controls (for example, check valves, dry disconnect couplings);

(b) Overfill prevention controls (for example, level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

(c) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

4416.27 The owner or operator shall comply with the requirements of §4416.32 if a leak or spill occurs in the tank system.

4416.28 The owner or operator shall develop and follow a schedule and procedure for inspecting overfill controls.

4416.29 The owner or operator shall inspect at least once each operating day:

(a) Aboveground portions of the tank system, if any, to detect corrosion or releases of waste;

(b) Data gathered from monitoring and leak detection equipment (for example, pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design; and

(c) The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (for example, dikes) to detect erosion or signs of releases of hazardous waste (for example, wet spots, dead vegetation).

4416.30 The owner or operator shall inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

(a) The proper operation of the cathodic protection system shall be confirmed within six (6) months after initial installation and annually thereafter; and

(b) All sources of impressed current shall be inspected and/or tested, as appropriate, at least bimonthly (that is, every other month).

4416.31 The owner or operator shall document in the operating record of the facility an inspection of those items in §§4416.28 through 4416.30.

4416.32 A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, shall be removed from service immediately, and the owner or operator shall satisfy the following requirements:

(a) The owner or operator shall 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;

(b) The following are requirements relating to the removal of waste from tank system or secondary containment system:

(1) If the release was from the tank system, the owner/operator shall, within twenty-four (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;

(2) If the material released was to a secondary containment system, all released materials shall be removed within twenty-four (24) hours or in as timely a manner as is possible to prevent harm to human health and the environment; and

(c) The owner/operator shall immediately conduct a visual inspection of the release and, based upon that inspection:

(1) Prevent further migration of the leak or spill to soils or surface water; and

(2) Remove, and properly dispose of, any visible contamination of the soil or surface water; and

(d) Any release to the environment, except as provided in §4416.32(d)(1), shall be reported to the Director within twenty-four (24) hours of its detection. If the release has been reported pursuant to §7 of the Water Pollution Control Act of 1984, effective March 16, 1985 (D.C. Code §6-926, 1995 Repl. Vol.), that report shall not satisfy this requirement.

(1) A leak or spill of hazardous waste is exempted from the requirements of §4416.32(d) if it is:

(A) Less than or equal to a quantity of one (1) pound, and

(B) Immediately contained and cleaned up.

(2) Within thirty (30) days of detection of a release to the environment, a report containing the following information shall be submitted to the Director:

(A) Likely route of migration of the release;

(B) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

(C) 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 thirty (30) days, these data shall be submitted to the Director as soon as they become available;

(D) Proximity to downgradient drinking water, surface water, and populated areas; and

(E) Description of response actions taken or planned; and

(e) The owner or operator shall make provisions for secondary containment, repair, or closure of the tank system under the following conditions:

(1) Unless the owner/operator satisfies the requirements of §§4416.32(e)(2) through 4416.32(e)(4), the tank system shall be closed in accordance with §§4416.33 through 4416.35;

(2) 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;

(3) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system shall be repaired before returning the tank system to service;

(4) 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 shall provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of §§4416.16 through 4416.24 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 shall be repaired and may be returned to service without secondary containment as long as the requirements of §4416.32(f) are satisfied. If a component is replaced to comply with the requirements of §4416.32(e)(4), that component shall satisfy the requirements for new tank systems or components in §§4416.9 through 4416.24; and Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (for example, the bottom of an inground or onground tank), the entire component shall be provided with secondary containment in accordance with §§4416.16 through 4416.24 before being returned to use.

(f) If the owner/operator has repaired a tank system in accordance with §4416.32(e), and the repair has been extensive (for example, installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system shall not be returned to service unless the owner/operator has obtained a certification by an independent, qualified, registered, professional engineer in accordance with §4601.22 that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification shall be submitted to the Director within seven (7) days after returning the tank system to use.

4416.33 At closure of a tank system, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (such as liners), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless §4100.16 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems shall meet all of the requirements specified in §§4413 and 4414.

4416.34 If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in §4416.33, then the owner or operator shall close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements at §4413.30. 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 shall meet all of the requirements in §§4413 and 4414.

4416.35 If an owner or operator has a tank system that does not have secondary containment that meets the requirements of §§4416.17 through 4416.21 and has not been granted a variance from the secondary containment requirements in accordance with §4416.22, then:

(a) The closure plan for the tank system shall include both a plan for complying with §4416.33 and a contingent plan for complying with §4416.34;

(b) A contingent post-closure plan for complying with §4416.34 shall be prepared and submitted as part of the permit application;

(c) The cost estimates calculated for closure and post-closure care shall 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 §4416.33;

(d) Financial assurance shall be based on the cost estimates in §4416.35(c);

(e) For the purposes of the contingent closure and post-closure plans, a tank system is considered to be a landfill, and the contingent plans shall meet all of the closure, post-closure, and financial responsibility requirements under §§4413 and 4414; and

4416.36 Ignitable or reactive waste shall not be placed in tank systems, unless:

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

(1) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under §§4108.4 through 4108.5 and §§4108.8 through 4108.9, and

(2) Section 4406.2 is complied with; or

(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

(c) The tank system is used solely for emergencies.

4416.37 The owner or operator of a facility where ignitable or reactive waste is stored or treated in a tank shall 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 §4017.1(m)).

4416.38 Incompatible wastes, or incompatible wastes and materials, shall not be placed in the same tank system, unless §4406.2 is complied with.

4416.39 Hazardous waste shall not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless §4406.2 is complied with.

4416.40 The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of §§4428 through 4449 and §§4474 through 4483.

4416.41 The following requirements apply only to generators accumulating hazardous waste according to the requirements of §4202.7:

(a) In addition to performing the waste analysis required by §4403, the owner or operator shall, whenever a tank system is to be used to treat chemically or to store a hazardous waste that is substantially different from waste previously treated or stored in that tank

system; or treat chemically a hazardous waste with a substantially different process than any previously used in that tank system:

(1) Conduct waste analyses and trial treatment ~~or storage~~ tests (for example, bench-scale or pilot-plant scale tests); or

(2) Obtain written, documented information on similar waste under similar operating conditions to show that the proposed treatment or storage will meet the requirements of §4416.25.

4417 WASTE PILES

4417.1 The regulations in §4417 apply to owners and operators of facilities that store or treat hazardous waste in piles, except as §§4400.1 through 4400.12 provide otherwise.

4417.2 Disposal in waste piles is prohibited. At closure, owners and operators shall meet the clean closure requirements of §4413.19.

4417.3 Owners and operators of waste piles shall treat or store hazardous wastes as follows:

(a) Liquids or materials containing free liquids shall not be placed in the pile;

(b) The pile is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated;

(c) The pile shall be protected from surface water run-off by the structure or in some other manner;

(d) The pile shall be designed and operated to control dispersal of the waste by wind, where necessary, by means other than wetting; and

(e) The pile shall not generate leachate through decomposition or other reactions.

4417.4 A waste pile (except for an existing portion of a waste pile) shall have:

(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 shall be:

(1) 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;

(2) 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

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

(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 shall specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed thirty (30) cm (one foot). The leachate collection and removal system shall be:

(1) Constructed of materials that are:

(A) Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and

(B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying wastes, waste cover materials, and by any equipment used at the pile; and

(2) Designed and operated to function without clogging through the scheduled closure of the waste pile.

4417.5 The owner or operator shall be exempted from the requirements of §4417.4, 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 §§4412.9 and 4412.10) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Director shall consider:

(a) The nature and quantity of the wastes;

(b) The proposed alternate design and operation;

(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

(d) All other factors that would influence the quality and mobility of the leachate produced and the potential for it to migrate to ground water or surface water.

4417.6 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 shall install two or more liners and a leachate collection and removal system above and between the liners. "Construction commences" is as defined in §5400.1 under "existing facility".

4417.7 The liner system shall include:

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

(b) A composite bottom liner, consisting of at least two components. The upper component shall be designed and constructed of materials (for example, a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component shall 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 shall be constructed of at least three (3) feet (ninety-one (91) cm) of compacted soil material with a hydraulic conductivity of no more than one ten millionth (1×10^{-7}) cm/sec.

4417.8 The liners shall comply with §4417.4(a).

4417.9 The leachate collection and removal system immediately above the top liner shall 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 shall specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed thirty (30) cm (one foot). The leachate collection and removal system shall comply with §§4417.10(c) and 4417.10(d).

4417.10 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 shall 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:

(a) Constructed with a bottom slope of one percent (1%) or more;

(b) Constructed of granular drainage materials with a hydraulic conductivity of one hundredth (1×10^{-2}) cm/sec or more and a thickness of twelve (12) inches (thirty and one-half (30.5) cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of three hundred thousandths (3×10^{-5}) square meters per second (m^2/sec) or more;

(c) 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;

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

(e) Constructed with sumps and liquid removal methods (for example, pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit shall have its own sump(s). The design of each sump

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

4417.11 The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

4417.12 The owner or operator of a leak detection system that is not located completely above the seasonal high water table shall demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

4417.13 The Director may approve alternative design or operating practices to those specified in §4417.6 if the owner or operator demonstrates to the Director that the design and operating practices, together with location characteristics:

(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 §4417.6; and

(b) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

4417.14 [RESERVED]

4417.15 [RESERVED]

4417.16 The owner or operator shall 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 twenty-five (25) year storm.

4417.17 The owner or operator shall design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a twenty-four (24) hour, twenty-five (25) year storm.

4417.18 Collection and holding facilities (for example, tanks or basins) associated with run-on and run-off control systems shall be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

4417.19 If the pile contains any particulate matter that may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the pile to control wind dispersal.

4417.20 The Director shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

4417.21 The Director shall approve an action leakage rate for waste pile units subject to §4417.6 or §4417.13. 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 one (1) foot. The action leakage rate shall include an adequate safety margin to allow for uncertainties in the design (for example, 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 (for

example, the action leakage rate shall 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, or overburden pressures).

4417.22 To determine if the action leakage rate has been exceeded, the owner or operator shall convert the weekly flow rate from the monitoring data obtained under §4417.29 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 shall be calculated weekly during the active life and closure period.

4417.23 The owner or operator of waste pile units subject to §4417.6 or §4417.13 shall have an approved response action plan before receipt of waste. The response action plan shall set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan shall describe the actions specified in §4417.24.

4417.24 If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator shall:

(a) Notify the Director in writing of the exceedance within seven (7) days of the determination;

(b) Submit a preliminary written assessment to the Director within fourteen (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;

(c) Determine to the extent practicable the location, size, and cause of any leak;

(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;

(e) Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and

(f) Within thirty (30) days after the notification that the action leakage rate has been exceeded, submit to the Director the results of the analyses specified in §§4417.24(c) through 4417.24(e), 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 shall submit to the Director a report summarizing the results of any remedial actions taken and actions planned.

4417.25 To make the leak and/or remediation determinations in §§4417.24(c) through 4417.24(e), the owner or operator shall:

(a) Assess the source of liquids and amounts of liquids by source;

(b) 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

(c) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(d) Document why the assessments are not needed.

4417.26 During construction or installation, liners (except in the case of existing portions of piles exempt from §4417.4) and cover systems (for example, membranes, sheets, or coatings) shall be inspected for uniformity, damage, and imperfections (for example, holes, cracks, thin spots, or foreign materials).

4417.27 Immediately after construction or installation:

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

(b) Soil-based and admixed liners and covers shall 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.

4417.28 While a waste pile is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

(a) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;

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

(c) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

4417.29 An owner or operator required to have a leak detection system under §4417.6 shall record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

4417.30 [RESERVED]

4417.31 Ignitable or reactive waste shall not be placed in a waste pile unless the waste and waste pile satisfy all applicable requirements of chapter 50, and:

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

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under §§4108.4 through 4108.5 or §§4108.8 through 4108.9; and

(2) §4406.2 is complied with; or

(b) The waste is managed in such a way that it is protected from any material or conditions that may cause it to ignite or react.

4417.32 Incompatible wastes, or incompatible wastes and materials, (See §4496.1(c) for examples) shall not be placed in the same pile, unless §4406.2 is complied with.

4417.33 A pile of hazardous waste that is incompatible with any waste or other material stored nearby in containers, other piles, or open tanks shall be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

4417.34 Hazardous waste shall 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 §4406.2.

4417.35 At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (such as liners), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless §4100.16 applies.

4417.36 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 §4417.35, 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 care requirements at §4413, including §4413.30.

4417.37 The owner or operator of a waste pile that does not comply with the liner requirements of §4417.4(a) and is not exempt from them in accordance with §4417.3 or §4417.5, shall:

(a) Include in the closure plan for the pile under §§4413.3 through 4413.10 both a plan for complying with §4417.35 and a contingent plan for complying with §4417.36 in case not all contaminated subsoils can be practicably removed at closure; and

(b) Prepare a contingent post-closure plan under §§4413.22 through 4413.25 for complying with §4417.36 in case not all contaminated subsoils can be practicably removed at closure.

4417.38 The cost estimates calculated under §§4414.3 through 4414.9 and §§4414.11 through 4414.14 for closure and post-closure care of a pile subject to §4417.38 shall 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 §4417.35.

4417.39 Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 shall not be placed in waste piles that are not enclosed (as defined in §4417.3) 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 this subsection, and in accord with all other applicable requirements of this chapter. The factors to be considered are:

(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;

(b) The attenuative properties of underlying and surrounding soils or other materials;

(c) The mobilizing properties of other materials co-disposed with these wastes; and

(d) The effectiveness of additional treatment, design, or monitoring techniques.

4417.40 The Director may determine that additional design, operating, and monitoring requirements are necessary for piles managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 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.

4418-4420 [RESERVED]

4421 CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

4421.1 For the purpose of implementing remedies under §§4412.57 through 4412.59 or RCRA §3008(h) or §11 and 12 of HWMA (D.C. Code §6-710 and 6-711, 1995 Repl. Vol.), the Director may designate an area at the facility as a corrective action management unit (CAMU), as defined in §5400.1, in accordance with the requirements of §4421. One or more CAMUs may be designated at a facility. The following are provisions related to CAMUs:

(a) Placement of remediation wastes into or within a CAMU does not constitute land disposal of hazardous wastes; and

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

4421.2 The Director may designate a regulated unit (as defined in §4412.2) as a CAMU, or may incorporate a regulated unit into a CAMU, if:

(a) The regulated unit is closed or closing, meaning it has begun the closure process under §§4413.11 through 4413.13 or §4401; and

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

4421.3 The §§4412, 4413, and 4414 requirements and the unit-specific requirements of chapter 44 or 40 CFR Part 265, as restricted by §4401.2, that applied to that regulated unit shall continue to apply to that portion of the CAMU after incorporation into the CAMU.

4421.4 The Director shall designate a CAMU in accordance with the following:

(a) The CAMU shall facilitate the implementation of reliable, effective, protective, and cost-effective remedies;

(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;

(c) The CAMU shall include uncontaminated areas of the facility, only if including those areas for the purpose of managing remediation waste is more protective than management of the wastes at contaminated areas of the facility;

(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;

(e) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practicable;

(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

(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.

4421.5 The owner/operator shall provide sufficient information to enable the Director to designate a CAMU in accordance with the criteria in §§4421.1 through 4421.9.

4421.6 The Director shall specify, in the permit or order, requirements for CAMUs to include the following:

(a) The areal configuration of the CAMU;

(b) Requirements for remediation waste management to include the specification of applicable design, operation and closure requirements;

(c) Requirements for ground water monitoring that are sufficient to:

(1) 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

(2) 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

(d) Closure and post-closure requirements are as follows:

(1) Closure of corrective action management units shall:

(A) Minimize the need for further maintenance; and

(B) 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; and

(2) Requirements for closure of CAMUs shall include the following, as appropriate and as the Director deems necessary for a given CAMU:

(A) Requirements for excavation, removal, treatment or containment of wastes;

(B) For areas in which wastes will remain after closure of the CAMU, requirements for capping of the areas; and

(C) Requirements for removal and decontamination of equipment, devices, and structures used in remediation waste management activities within the CAMU; and

(3) In establishing specific closure requirements for CAMUs under §4421.6, the Director shall consider the following factors:

(A) CAMU characteristics;

(B) Volume of wastes that remain in place after closure;

(C) Potential for releases from the CAMU;

(D) Physical and chemical characteristics of the waste;

(E) Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential or actual releases; and

(F) Potential for exposure of humans and environmental receptors if releases were to occur from the CAMU; and

(4) 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 those activities will be performed to ensure the integrity of any cap, final cover, or other containment system.

4421.7 The Director shall document the rationale for designating CAMUs and shall make the documentation available to the public.

4421.8 Incorporation of a CAMU into an existing permit shall be approved by the Director according to the procedures for Department-initiated permit modifications under §§4617.3 through 4617.6, or according to the permit modification procedures of §§4617.7 through 4617.15.

4421.9 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.

4421.10 For temporary tanks and container storage areas used for treatment or storage of hazardous remediation wastes, during remedial activities required under §§4412.57 through 4412.59 or RCRA §3008(h) or §§11 and 12 HWMA (D.C. Code §§6-710 and 6-711 1995 Repl. vol.), the Director may determine that a design, operating, or closure standard applicable to the units may be replaced by alternative requirements that are protective of human health and the environment.

4421.11 Any temporary unit to which alternative requirements are applied in accordance with §4421.10 shall be:

(a) Located within the facility boundary; and

(b) Used only for treatment or storage of remediation wastes.

4421.12 In establishing standards to be applied to a temporary unit, the Director shall consider the following factors:

(a) Length of time the unit will be in operation;

(b) Type of unit;

(c) Volumes of wastes to be managed;

(d) Physical and chemical characteristics of the wastes to be managed in the unit;

(e) Potential for releases from the unit;

(f) Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and

(g) Potential for exposure of humans and environmental receptors if releases were to occur from the unit.

4421.13 The Director shall specify in the permit or order the length of time a temporary unit will be allowed to operate, which shall be no longer than one year. The Director shall also specify the design, operating, and closure requirements for the unit.

4421.14 The Director may extend the operational period of a temporary unit once for no longer than one year beyond that originally specified in the permit or order, if the Director determines that:

(a) Continued operation of the unit will not pose a threat to human health and the environment; and

(b) Continued operation of the unit is necessary to ensure timely and efficient implementation of remedial actions at the facility.

4421.15 Incorporation of a temporary unit or a time extension for a temporary unit into an existing permit shall be:

(a) Approved in accordance with the procedures for Department-initiated permit modifications under §§4617.3 through 4617.6; or

(b) Requested by the owner/operator as a Class II modification according to the procedures under §§4617.7 through 4617.15.

4421.16 The Director shall document the rationale for designating a temporary unit and for granting time extensions for temporary units and shall make the documentation available to the public.

4422-4423 [RESERVED]

4424 DRIP PADS

4424.1 The requirements of §4424 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. For F032 wastes, 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 before December 6, 1990. For F034 and F035 wastes, existing drip pads are those constructed before the date the District of Columbia's wood preserving regulations were promulgated and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to the date the District of Columbia's wood preserving regulations were promulgated. All other drip pads are new drip pads. For F032 wastes, the requirement at §4424.10(c) 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. For F034 and F035 wastes, the requirement at §4424.10(c) to install a leak collection system applies only to those drip pads that are constructed after the date the District of Columbia's wood preserving regulations were promulgated for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to the date the District of Columbia's wood preserving regulations were promulgated.

4424.2 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 §4424.13 or §4424.14, as appropriate.

4424.3 The requirements of §4424 are not applicable to the management of infrequent and incidental drippage in storage yards provided that 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 infrequent and incidental drippage. At a minimum, the contingency plan shall describe how the owner or operator shall do the following:

(a) Clean up the drippage;

(b) Document the cleanup of the drippage;

(c) Retain documents regarding cleanup for three (3) years; and

(d) Manage the contaminated media in a manner consistent with District regulations.

4424.4 For each existing drip pad as defined in §§4424.1 through 4424.3, the owner or operator shall evaluate the drip pad and determine that it meets all of the requirements of §4424, except the requirements for liners and leak detection systems of §4424.10. No later than the effective date of this rule, the owner or operator shall 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 shall be reviewed, updated and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of §§4424.9 through 4424.23 are complete. The evaluation shall document the extent to which the drip pad meets each of the design and operating standards of §§4424.9 through 4424.23, except the standards for liners and leak detection systems, specified in §4424.10.

4424.5 The owner or operator shall develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of §4424.10, and submit the plan to the Director no later than two (2) years before the date that all repairs, upgrades, and modifications are complete. This written plan shall describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of §§4424.9 through 4424.23. The plan shall be reviewed and certified by an independent qualified registered professional engineer.

4424.6 Upon completion of all upgrades, repairs, and modifications, the owner or operator shall 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.

4424.7 If the drip pad is found to be leaking or unfit for use, the owner or operator shall comply with the provisions of §4424.21 or close the drip pad in accordance with §§4424.26 through 4424.28.

4424.8 Owners and operators of new drip pads shall ensure that the pads are designed, installed, and operated in accordance with one of the following:

(a) All of the requirements of §§4424.9 through 4424.23 (except 4424.9(d) and (e)), 4424.24 through 4424.25(c), and 4424.26 through 4424.29, or

(b) All of the requirements of §§4424.9 through 4424.23 (except 4424.10), 4424.24 through 4424.25(c), and 4424.26 through 4424.29.

4424.9 Drip pads shall:

(a) Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt:

(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;

(c) Have a curb or berm around the perimeter;

(d) Have a hydraulic conductivity of less than or equal to on ten millionth ($1x10^{-7}$) centimeters per second (cm/sec), for example, existing concrete drip pads shall be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to one ten millionth ($1x10^{-7}$) centimeters per second (cm/sec) such that the entire surface where drippage occurs or may run across is capable of containing drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material shall be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material shall 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 §4424.8(b) instead of §4424.8(a);

(e) The owner or operator shall 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 shall be reviewed, updated and recertified annually. The evaluation shall document the extent to which the drip pad meets the design and operating standards of §4424.9, except for §4424.10; and

(f) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of daily operations, for example, variable and moving loads such as vehicle traffic or movement of wood.

Note: The Director 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 this paragraph.

4424.10 If an owner/operator elects to comply with §4424.8(a) instead of §4424.8(b), the drip pad shall have:

(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 shall 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 shall be:

(1) 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);

(2) 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

(3) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and

(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 shall be:

(1) Constructed of materials that are:

(A) Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

(B) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad; and

(2) Designed and operated to function without clogging through the scheduled closure of the drip pad; and

(3) 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; and

(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 shall be documented in the operating log.

4424.11 Drip pads shall be maintained to remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

Note: See §4424.21 for remedial action required if deterioration or leakage is detected.

4424.12 The drip pad and associated collection system shall be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.

4424.13 Unless protected by a structure, as described in §4424.2, the owner or operator shall 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 twenty-four (24) hour, twenty-five (25) year storm, unless the system has sufficient excess capacity to contain any run-off that might enter the system.

4424.14 Unless protected by a structure or cover as described in §4424.2, the owner or operator shall design, construct, operate and maintain a run-off management system to collect and control at least the water volume resulting from a twenty-four (24) hour, twenty-five (25) year storm.

4424.15 The drip pad shall be evaluated to determine that it meets the requirements of §§4424.9 through 4424.14 and the owner or operator shall obtain a statement from an independent, qualified registered professional engineer certifying that the drip pad design meets the requirements of §§4424.9 through 4424.23.

4424.16 Drippage and accumulated precipitation shall be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

4424.17 The drip pad surface shall 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 shall document the date and time of each cleaning and the cleaning procedure used in the facility's operating log. The owner/operator shall determine if the residues are hazardous as per §4200.10 and, if so, shall manage them under chapter 40 through 46 and chapter 50, and RCRA §3010.

4424.18 Drip pads shall 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.

4424.19 After being removed from the treatment vessel, treated wood from pressure and non-pressure processes shall be held on the drip pad until drippage has ceased. The owner or operator shall maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement.

4424.20 Collection and holding units associated with run-on and run-off control systems shall be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

4424.21 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 shall be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

(a) Upon detection of a condition that may have caused or has caused a release of hazardous waste (for example, upon detection of leakage in the leak detection system), the owner or operator shall:

(1) Enter a record of the discovery in the facility operating log;

(2) Immediately remove the portion of the drip pad affected by the condition from service;

(3) Determine what step will 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;

(4) Within twenty-four (24) hours after discovery of the condition, notify the Director of the condition and, within ten (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; and

(b) The Director shall review the information submitted, make a determination regarding whether the pad shall 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; and

(c) Upon completing all repairs and clean up, the owner or operator shall 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 §4424.21(a)(4).

4424.22 Should a permit be necessary, the Director shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of §§4424.9 through 4424.23 are satisfied.

4424.23 The owner or operator shall maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This shall 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.

4424.24 During construction or installation, liners and cover systems (for example, membranes, sheets, or coatings) shall be inspected for uniformity, damage and imperfections (for example, holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners shall be inspected and certified as meeting the requirements of §§4424.9 through 4424.23 by an independent qualified, registered professional engineer. This certification shall be maintained at the facility as part of the facility operating record. After installation, liners and covers shall be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

4424.25 While a drip pad is in operation, it shall be inspected weekly and after storms to detect evidence of any of the following:

(a) Deterioration, malfunctions, or improper operation of run-on and run-off control systems;

(b) The presence of leakage in and proper functioning of leak detection system; and

(c) Deterioration or cracking of the drip pad surface.

Note: See §4424.21 for remedial action required if deterioration or leakage is detected.

4424.26 At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (such as pad or liners), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

4424.27 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 §4424.26, 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 closure and post-closure care requirements that apply to landfills at §4413.30. 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 shall meet all of the requirements for landfills specified in §§4413 and 4414.

4424.28 The owner or operator of an existing drip pad, as defined in §§4424.1 through 4424.3, that does not comply with the liner requirements of §4424.10(a) shall:

(a) Include in the closure plan for the drip pad under §§4413.3 through 4413.10 both a plan for complying with §4424.26 and a contingent plan for complying with §4424.27 in case not all contaminated subsoils can be practicably removed at closure; and

(b) Prepare a contingent post-closure plan under §§4413.22 through 4413.25 for complying with §4424.27 in case not all contaminated subsoils can be practicably removed at closure.

4424.29 The cost estimates calculated under §§4413.3 through 4413.10 and 4414.11 through 4414.14 for closure and post-closure care of a drip pad subject to §4424.29 shall 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 §4424.26.

4425 MISCELLANEOUS UNITS

4425.1 The requirements in §4425 apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in miscellaneous units, except as §§4400.1 through 4400.12 provide otherwise.

4425.2 A miscellaneous unit shall 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 terms and provisions 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 §§4415 through 4418, 4400.3, 4428 through 4459, and 4474 through 4483, chapter 46, 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:

(a) 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:

(1) 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;

(2) The hydrologic and geologic characteristics of the unit and the surrounding area;

(3) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water;

(4) The quantity and direction of ground-water flow;

(5) The proximity to and withdrawal rates of current and potential ground-water users;

(6) The patterns of land use in the region;

(7) 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;

(8) The potential for health risks caused by human exposure to waste constituents; and

(9) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;

(b) 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:

(1) The volume and physical and chemical characteristics of the waste in the unit;

(2) The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;

(3) The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;

(4) The patterns of precipitation in the region;

(5) The quantity, quality, and direction of ground-water flow;

(6) The proximity of the unit to surface waters;

(7) The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;

(8) The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;

(9) The patterns of land use in the region;

(10) The potential for health risks caused by human exposure to waste constituents; and

(11) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents; and

(c) 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:

(1) 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;

(2) The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;

(3) The operating characteristics of the unit;

(4) The atmospheric, meteorologic, and topographic characteristics of the unit and the surrounding area;

(5) The existing quality of the air, including other sources of contamination and their cumulative impact on the air;

(6) The potential for health risks caused by human exposure to waste constituents; and

(7) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents.

4425.3 Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequencies shall ensure compliance with §§4425.2, 4404, 4409.4, 4411.15, 4411.16, 4411.17, and 4412.57 through 4412.59 as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

4425.4 A miscellaneous unit that is a disposal unit shall be maintained in a manner that complies with §4425.2 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 shall also meet the requirements of §4425.2 during post-closure care. The post-closure plan under §§4413.22 through 4413.25 shall specify the procedures that will be used to satisfy this requirement.

4426-4427[RESERVED]

4428 AIR EMISSION STANDARDS FOR PROCESS VENTS: GENERAL

4428.1 The regulations in §§4428 through 4444 apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in §§4400.1 through 4400.12).

4428.2 Except for §§4429.4 and 4429.5, §§4428 through 4444 apply 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 ten (10) ppmw, if these operations are conducted in one of the following:

(a) A unit that is subject to the permitting requirements of chapter 46; or

(b) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of §4202.7 (that is, a hazardous waste recycling unit that is not a

90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of chapter 46; or

(c) A unit that is exempt from permitting under ~~the provisions~~ of §4202.7 (that is, a "90-day" tank or container) and is not a recycling unit under the provisions of §4103.

4428.3 For the owner and operator of a facility subject to §§4428 through 4444 and who received a final permit under Chapter 46 and §4 of HWMA (D.C. Code §6-703, 1995 Repl. vol.) before December 6, 1996, the requirements of §§4428 through 4444 shall be incorporated into the permit when the permit is reissued in accordance with the requirements of §4705 or reviewed in accordance with the requirements of §4618.4. Until the owner and operator receives a final permit incorporating the requirements of §§4428 through 4444, the owner and operator is subject to the requirements of 40 CFR 265 subpart BB as restricted by §4401.2.

4428.4 The requirements of §§4428 through 4444 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 §§4428 through 4444 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.

4428.5 As used in §§4428 through 4444 all terms not defined at §5400 have the meaning given in HWMA and in Chapters 40 through 53.

Note: The requirements of §§4428.6 through 4431.2 apply to process vents on hazardous waste recycling units previously exempt under §4103.5. Other exemptions under §§4101 and 4400.7 are not affected by these requirements.

4428.6 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 ten (10) ppmw shall either:

(a) Reduce total organic emissions from all affected process vents at the facility below one and four-tenths (1.4) kg/h (three (3) lb/h) and two and eight-tenths (2.8) Mg/yr (three and one-tenth (3.1) tons/yr); or

(b) Reduce, by use of a control device, total organic emissions from all affected process vents at the facility by ninety-five (95) weight percent.

4428.7 If the owner or operator installs a closed-vent system and control device to comply with the provisions of §4428.6 the closed-vent system and control device shall meet the requirements of §§4428.10 through 4428.25.

4428.8 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 shall conform with the requirements of §4429.3.

4428.9 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 §4429.3 shall be used to resolve the disagreement.

4428.10 Owners or operators of closed-vent systems and control devices used to comply with provisions of this section shall comply with the provisions of §§4428.11 through 4428.25.

4428.11 The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of §§4428 through 4444 on the effective date that the facility becomes subject to the provisions of §§4428 through 4444 shall prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls shall be installed as soon as possible, but the implementation schedule may allow up to thirty (30) months after the effective date that the facility becomes subject to §§4428 through 4444 for installation and startup. Compliance dates are as follows:

(a) Any unit that begins operation after December 21, 1990, and is subject to the provisions of §§4428 through 4444 when operation begins, shall comply with the rules immediately (that is, must have control devices installed and operating on startup of the affected unit); the thirty (30) month implementation schedule does not apply;

(b) The owner or operator of any facility in existence on the effective date of a statutory or EPA or District regulatory amendment that renders the facility subject to §§4428 through 4444 shall comply with all requirements of §§4428 through 4444 as soon as practicable but no later than thirty (30) months after the amendment's effective date. When control equipment required by §§4428 through 4444 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:

(1) Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment;

(2) Initiation of on-site installation of the control equipment;

(3) Completion of the control equipment installation; and

(4) Performance of any testing to demonstrate that the installed equipment meets the applicable standards of §§4428 through 4444.

(c) The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility; and

(d) Owners and operators of facilities and units that become newly subject to the requirements of §§4428 through 4444 after December 8, 1997, due to an action other than those described in §4428.11(b) must comply with all applicable requirements immediately (that is, must have control devices installed and operating on the date the facility or unit becomes subject to §§4428 through 4444; the thirty (30) month implementation schedule does not apply).

4428.12 A control device involving vapor recovery (for example, a condenser or adsorber) shall be designed and operated to recover the organic vapors vented to it with an efficiency of ninety-five (95) weight percent or greater unless the total organic emission limits of §4428.6(a) for all affected process vents can be attained at an efficiency less than ninety-five (95) weight percent.

4428.13 An enclosed combustion device (for example, a vapor incinerator, boiler, or process heater) shall be designed and operated to reduce the organic emissions vented to it by ninety-five (95) weight percent or greater; to achieve a total organic compound concentration of twenty (20) ppmv, expressed as the sum of the actual compounds, not carbon equivalents, on a dry basis corrected to three (3) percent oxygen; or to provide a minimum residence time of one-half (0.5) second at a minimum temperature of seven hundred sixty degrees Celsius (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.

4428.14 Owners or operators of closed vent systems and control devices shall follow the following flare requirements:

(a) A flare shall be designed for and operated with no visible emissions as determined by the methods specified in §4428.15(a), except for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours;

(b) A flare shall be operated with a flame present at all times, as determined by the methods specified in §4428.16(b)(3);

(c) A flare shall be used only if the net heating value of the gas being combusted is eleven and two-tenths (11.2) MJ/scm (three hundred (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 (two hundred (200) Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in §4428.15(b);

(d) For steam assisted flares:

(1) A steam-assisted or nonassisted flare shall be designed for and operated with an exit velocity, as determined by the methods specified in §4428.15(c), less than eighteen and three-tenths (18.3) m/s (sixty (60) ft/s), except as provided in §§4428.14(d)(2) and 4428.14(d)(3);

(2) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in §4428.15(c), equal to or greater than eighteen and three-tenths (18.3) m/s (sixty (60) ft/s) but less than one hundred twenty-two (122) m/s (four hundred (400) ft/s) is allowed if the net heating value of the gas being combusted is greater than thirty-seven and three-tenths (37.3) MJ/scm (one thousand (1,000) Btu/scf);

(3) A steam-assisted or nonassisted flare designed for and operated with an exit velocity, as determined by the methods specified in §4428.15(c), less than the

velocity, V_{max}, as determined by the method specified in §4428.15(d) and less than one hundred twenty-two (122) m/s (four hundred (400) ft/s) is allowed; and

(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 §4428.15(e); and

(f) A flare used to comply with §4428.14 shall be steam-assisted, air-assisted, or nonassisted.

4428.15 The following requirements apply to gas being combusted in a flare:

(a) Reference Method 22 in 40 CFR part 60 shall be used to determine the compliance of a flare with the visible emission provisions of §§4428 through 4444. The observation period is two (2) hours and shall be used according to Method 22;

(b) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \left[\sum_{i=1}^{n} C_i H_i \right]$$

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 part 60 and measured for hydrogen and carbon monoxide by ASTM D 1946-82 (incorporated by reference as specified in §4017.1(c)); 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 §4017.1(d)) if published values are not available or cannot be calculated;

(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;

(d) The maximum allowed velocity in m/s, V_{max}, for a flare complying with §4428.14(d)(3) shall be determined by the following equation:

$$Log_{10}(V_{max}) = (H_T + 28.8)/31.7$$

where:

28.8 = Constant,

31.7 = Constant,

H_T = The net heating value as determined in §4428.15(b); and

(e) The maximum allowed velocity in m/s, V_{max}, for an air-assisted flare shall be determined by the following equation:

$$V_{max} = 8.706 + 0.7084 \ (H_T)$$

where:

8.706 = Constant,

0.7084 = Constant,

H_T = The net heating value as determined in §4428.15(b).

4428.16 The owner or operator shall monitor and inspect each control device required to comply with §§4428.10 through 4428.25 to ensure proper operation and maintenance of the control device by implementing the following requirements:

(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;

(b) Install, calibrate, maintain, and operate according to the manufacturer's specifications a device to continuously monitor control device operation as specified below:

(1) For a thermal vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall have an accuracy of ±one percent (1%) of the temperature being monitored in degrees Celsius (°C) or ±one-half degree Celsius (0.5°C), whichever is greater. The temperature sensor shall be installed at a location in the combustion chamber downstream of the combustion zone;

(2) For a catalytic vapor incinerator, a temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature at two (2) locations and have an accuracy of ±one percent (1%) of the temperature being monitored in degrees Celsius (°C) or one-half degree Celsius (0.5°C), whichever is greater. One (1) 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;

(3) For a flare, a heat sensing monitoring device equipped with a continuous recorder that indicates the continuous ignition of the pilot flame;

(4) 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 ±one percent (1%) of the temperature being monitored in degrees Celsius (°C) or ±one-half degree Celsius (0.5°C), whichever is greater. The temperature sensor shall be installed at a location in the furnace downstream of the combustion zone;

(5) 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;

(6) For a condenser, either:

(A) 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

(B) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ±one percent (1%) of the temperature being monitored in degrees Celsius (°C) or ±one-half degree Celsius (0.5°C), whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (that is, product side); and

(7) For a carbon adsorption system that regenerates the carbon bed directly in the control device such as a fixed-bed carbon adsorber, either:

(A) 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

(B) 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; and

(c) Inspect the readings from each monitoring device required by §§4428.16(a) and 4428.16(b) 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 §4428.10 through 4428.25.

4428.17 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 §4430.3(d)(3)(F).

4428.18 An 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:

(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 twenty percent (20%) of the time required to consume the total carbon working capacity established as a requirement of §4430.3(d)(3)(G), whichever is longer; and

(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 §4430.3(d)(3)(G).

4428.19 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.

4428.20 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.

4428.21 A closed-vent system shall meet either of the following design requirements:

(a) A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than five hundred (500) ppmv above background as determined by the procedure in §4429.2, and by visual inspections; or

(b) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one (1) 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.

4428.22 The owner or operator shall monitor and inspect each closed-vent system required to comply with §§4428.10 through 4428.25 to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:

(a) Each closed-vent system that is used to comply with §4428.21(a) shall be inspected and monitored in accordance with the following requirements:

(1) The owner or operator shall conduct an initial leak detection monitoring of the closed-vent system on or before the date that the system becomes subject to §§4428.10 through 4428.25. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in §4429.2 to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than five hundred (500) ppmv above background;

(2) After initial leak detection monitoring required in §4428.22(a)(1), the owner or operator shall inspect and monitor the closed-vent system as follows:

(A) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (for example, a welded joint between two (2) 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 §4429.2 to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (for example, a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (for example, a flange is unbolted);

(B) Closed-vent system components or connections other than those specified in §4428.22(a)(2)(A) shall be monitored annually and at other times as requested by the Director, except as provided for in §4428.25, using the procedures specified in §4429.2 to demonstrate that the components or connections operate with no detectable emissions; and

(3) 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 §4428.22(c); and

(4) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in §4430;

(b) Each closed-vent system that is used to comply with §4428.21(b) shall be inspected and monitored in accordance with the following requirements:

(1) The owner or operator shall inspect the closed-vent system visually 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;

(2) 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 §4428.22. Thereafter, the owner or operator shall perform the inspections at least once every year;

(3) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of §4428.22(c); and

(4) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in §4430; and

(c) The owner or operator shall repair all detected defects as follows:

(1) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than five hundred (500) ppmv above background, shall be controlled as soon as practicable, but not later than fifteen (15) calendar days after the emission is detected, except as provided for in §4428.22(c)(3);

(2) A first attempt at repair shall be made no later than five (5) calendar days after the emission is detected;

(3) 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. The equipment shall be repaired by the end of the next process unit shutdown; and

(4) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in §4430.

4428.23 Closed-vent systems and control devices used to comply with provisions of §§4428 through 4444 shall operate at all times when emissions may be vented to them.

4428.24 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:

(a) Regenerated or reactivated in a thermal treatment unit that meets one of the following:

(1) The owner or operator of the unit has been issued a final permit under chapter 46 that implements the requirements of §4425; or

(2) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of §§4428 through 4444 and §§4474 through 4483 of 40 CFR 265 subparts AA and CC as restricted by §4401.2; or

(3) 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;

(b) Incinerated in a hazardous waste incinerator outside the District for which the owner or operator either:

(1) Has been issued a final permit under 40 CFR part 270, or a State equivalent that implements the requirements of 40 CFR 264, subpart O or a State equivalent; or

(2) Has designed and operates the incinerator in accordance with the interim status requirements of 40 CFR part 265, subpart O, or a State equivalent; or

(c) Burned in a boiler or industrial furnace outside the District for which the owner or operator either:

(1) Has been issued a final permit under 40 CFR part 270, or a State equivalent, that implements the requirements of 40 CFR part 266, subpart H, or a State equivalent; 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, or a State equivalent.

4428.25 Any components of a closed-vent system that are designated, as described in §4430.4(i), as unsafe to monitor are exempt from the requirements of §4428.22(a)(2)(B) if:

(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 §4428.22(a)(2)(B); and

(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 §4428.22(a)(2)(B) as frequently as practicable during safe-to-monitor times.

4429 TEST METHODS AND PROCEDURES FOR PROCESS VENTS

4429.1 Each owner or operator subject to the provisions of §§4428 through 4444 shall comply with the test methods and procedures requirements provided in this section.

4429.2 When a closed-vent system is tested for compliance with no detectable emissions, as required in §4428.22, the test shall comply with the following requirements:

(a) Monitoring shall comply with Reference Method 21 in 40 CFR part 60;

(b) The detection instrument shall meet the performance criteria of Reference Method 21;

(c) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21;

(d) Calibration gases shall be:

(1) Zero air (less than ten (10) ppm of hydrocarbon in air); and

(2) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten thousand (10,000) ppm methane or n-hexane; and

(e) The background level shall be determined as set forth in Reference Method 21;

(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; and

(g) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with five hundred (500) ppm for determining compliance.

4429.3 Performance tests to determine compliance with §4428.6 and with the total organic compound concentration limit of §4428.13 shall comply with the following:

(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:

(1) Method 2 in 40 CFR part 60 for velocity and volumetric flow rate;

(2) Method 18 in 40 CFR part 60 for organic content;

(3) Each performance test shall consist of three (3) separate runs; each run conducted for at least one (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;

(4) Total organic mass flow rates shall be determined by the following equation:

$$E_h = Q_{2_{std}} \left\{ \sum_{i=1}^{n} C_i MW_i \right\} \quad [0.0416]\ [10^{-6}]$$

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/m^3 (@ 293 K and 760 mm Hg);

10^{-6} = Conversion from ppm, ppm^{-1};

(5) 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;

(6) 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 §4429.3(a)(4)) and by summing the annual total organic mass emission rates (E_A , as determined in §4429.3(a)(5)) for all affected process vents at the facility; and

(b) The owner or operator shall record the process information 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;

(c) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(1) Sampling ports adequate for the test methods specified in §4429.3(a);

(2) Safe sampling platform(s);

(3) Safe access to sampling platform(s);

(4) Utilities for sampling and testing equipment; and

(d) For the purpose of making compliance determinations, the time-weighted average of the results of the three (3) runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one (1) of the three (3) runs will 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's approval, be determined using the average of the results of the two (2) other runs.

4429.4 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 §§4428 through 4444, the owner or operator shall 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 ten (10) ppmw using one of the following two methods:

(a) Direct measurement of the organic concentration of the waste using the following procedures:

(1) The owner or operator shall take a minimum of four (4) grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration;

(2) For waste generated onsite, the grab samples shall 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 shall 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;

(3) 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 §4017.1(o);

(4) The arithmetic mean of the results of the analyses of the four (4) 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; and

(b) Using knowledge of the waste to determine that its total organic concentration is less than ten (10) ppmw. Documentation of the waste determination is required. Examples of documentation that will be used to support a determination under §4429.4(b) 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 ten (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.

4429.5 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 ten (10) ppmw shall be made as follows:

(a) By the effective date that the facility becomes subject to the provisions of §§4428 through 4444 or by the date when the waste is first managed in a waste management unit, whichever is later, and

(b) For continuously generated waste, annually, or

(c) Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

4429.6 When an owner or operator and the Director 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 ten (10) ppmw based on knowledge of the waste, the procedures in Method 8260 of SW-846 (incorporated by reference under §4017.1(o)) may be used to resolve the dispute.

4430 RECORDKEEPING REQUIREMENTS FOR PROCESS VENTS

4430.1 Each owner or operator subject to the provisions of §§4428 through 4444 shall comply with the recordkeeping requirements of this section.

4430.2 An owner or operator of more than one hazardous waste management unit subject to the provisions of §§4428 through 4444 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.

4430.3 Owners and operators shall record the following information in the facility operating record:

(a) For facilities that comply with the provisions of §4428.11, an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The schedule shall also include a rationale of why the installation cannot be completed at an earlier date. The implementation schedule shall be in the facility operating record by the effective date that the facility becomes subject to the provisions of §§4428 through 4444.

(b) Up-to-date documentation of compliance with the process vent standards in §§4428.6 through 4428.9, including:

(1) 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 (that is, the total emissions for all affected vents at the facility), and the approximate location within the facility of each affected unit (for example, identify the hazardous waste management units on a facility plot plan);

(2) 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 shall be made using operating parameter values (for example, 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 (for example, 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;

(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 shall include:

(1) 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;

(2) A detailed engineering description of the closed-vent system and control device including:

(A) Manufacturer's name and model number of control device;

(B) Type of control device;

(C) Dimensions of the control device;

(D) Capacity; and

(E) Construction materials; and

(3) 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; and

(d) Documentation of compliance with §§4428.10 through 4428.25(b) shall include the following information:

(1) A list of all information references and sources used in preparing the documentation;

(2) Records, including the dates, of each compliance test required by §4428.21;

(3) 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 §4017.1(l)) 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 §§4430.3(d)(3)(A) through 4430.3(d)(3)(G) 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;

(A) 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;

(B) 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;

(C) 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;

(D) 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 §4428.14;

(E) 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;

(F) 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; and

(G) 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; and

(4) 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;

(5) A statement signed and dated by the owner or operator certifying that the control device is designed to operate at an efficiency of ninety-five percent (95%) percent or greater unless the total organic concentration limit of §4428.6 is achieved at an efficiency less than ninety-five (95) weight percent or the total organic emission limits of §4428.6 for affected process vents at the facility can be attained by a control device involving vapor recovery at an efficiency less than ninety-five (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; and

(6) If performance tests are used to demonstrate compliance, all test results.

4430.4 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:

(a) Description and date of each modification that is made to the closed-vent system or control device design;

(b) Identification of operating parameter, description of monitoring device, and diagram of monitoring sensor location or locations used to comply with §§4428.16(a) and (b);

(c) Monitoring, operating, and inspection information required by §§4428.16 through 4428.21;

(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:

(1) For a thermal vapor incinerator designed to operate with a minimum residence time of one-half (0.50) second at a minimum temperature of seven hundred sixty degrees Celsius (760°C), the period when the combustion temperature is below seven hundred sixty degrees Celsius (760°C);

(2) For a thermal vapor incinerator designed to operate with an organic emission reduction efficiency of ninety-five (95) weight percent or greater, the period when the combustion zone temperature is more than twenty-eight degrees Celsius (28°C) below the design average combustion zone temperature established as a requirement of §4430.3(d)(3)(A);

(3) For a catalytic vapor incinerator, the period when:

(A) Temperature of the vent stream at the catalyst bed inlet is more than twenty-eight degrees Celsius (28°C) below the average temperature of the inlet vent stream established as a requirement of §4430.3(d)(3)(B); or

(B) Temperature difference across the catalyst bed is less than eighty percent (80%) of the design average temperature difference established as a requirement of §4430.3(d)(3)(B);

(4) For a boiler or process heater, the period when:

(A) Flame zone temperature is more than twenty-eight degrees Celsius (28°C) below the design average flame zone temperature established as a requirement of §4430.3(d)(3)(C); or

(B) Position changes where the vent stream is introduced to the combustion zone from the location established as a requirement of §4430.3(d)(3)(C);

(5) For a flare, the period when the pilot flame is not ignited;

(6) For a condenser that complies with §4428.16(b)(6)(A), the period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the condenser are more than twenty percent (20%) greater than the design outlet organic compound concentration level established as a requirement of §4430.3(d)(3)(E);

(7) For a condenser that complies with §4428.16(b)(6)(B), the period when:

(A) Temperature of the exhaust vent stream from the condenser is more than six degrees Celsius (6°C) above the design average exhaust vent stream temperature established as a requirement of §4430.3(d)(3)(E); or

(B) Temperature of the coolant fluid exiting the condenser is more than six degrees Celsius (6°C) above the design average coolant fluid temperature at the condenser outlet established as a requirement of §4430.3(d)(3)(E);

(8) 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 §4428.16(b)(7)(A), the period when the organic compound concentration level or readings of organic compounds in the exhaust vent stream from the carbon bed are more than twenty percent (20%) greater than the design exhaust vent stream organic compound concentration level established as a requirement of §4430.3(d)(3)(F); and

(9) 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 §4428.16(b)(7)(B), the period when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time established as a requirement of §4430.3(d)(3)(F);

(e) Explanation for each period recorded under §4430.4(d) of the cause for the control device operating parameter exceeding the design value and the measures implemented to correct the control device operation;

(f) For a carbon adsorption system operated subject to requirements specified in §4428.17 or §4428.18(b), the date when existing carbon in the control device is replaced with fresh carbon;

(g) For a carbon adsorption system operated subject to requirements specified in §4428.18(a), a log that records:

(1) Date and time when the control device is monitored for carbon breakthrough and the monitoring device reading; and

(2) Date when existing carbon in the control device is replaced with fresh carbon;

(h) Date of each control device startup and shutdown;

(i) A log of any components of a closed-vent system that an owner or operator designates as unsafe to monitor pursuant to §4428.25 including, an explanation of why the component is unsafe to monitor and a plan for monitoring that component;

(j) When each leak is detected as specified in §4428.22, the following information shall be recorded:

(1) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number;

(2) The date the leak was detected and the date of first attempt to repair the leak;

(3) The date of successful repair of the leak;

(4) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable; and

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within fifteen (15) calendar days after discovery of the leak.

(A) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In those cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(B) If delay of repair was caused by depletion of stocked parts, there shall be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

4430.5 The owner or operator shall maintain records of the monitoring, operating, and inspection information required by §§4430.4(c) through 4430.4(j) for at least three (3) years following the date of each occurrence, measurement, maintenance, corrective action, or record.

4430.6 For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the Director shall specify the appropriate recordkeeping requirements.

4430.7 Up-to-date information and data used to determine whether or not a process vent is subject to the requirements in §§4428.6 through 4428.9 including supporting documentation as required by §4429.4(b) 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.

4431 REPORTING REQUIREMENTS FOR PROCESS VENTS

4431.1 Owners and operators subject to the requirements of §§4428 through 4444 shall submit a semiannual report to the Director by dates the Director specifies. The report shall include the following information:

(a) The Environmental Protection Agency identification number, name, and address of the facility; and

(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 §4430.4(d) and as indicated by the control device monitoring required by §4428.16 and the exceedances were not corrected within twenty-four (24) hours, or that a flare operated with visible emissions as defined in §4428.14 and as determined by Method 22 monitoring, the duration and cause of each exceedance or visible emissions, and any corrective measures taken.

4431.2 If, during the semiannual reporting period, the control device does not exceed or operate outside of the design specifications as defined in §4430.4(d) for more than twenty-four (24) hours or a flare does not operate with visible emissions as defined in §4428.14, a report to the Department is not required.

4432-4444 [RESERVED]

4445 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: GENERAL

4445.1 The regulations in §§4445 through 4459 apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes (except as provided in §§4400.1 through 4400.12).

4445.2 Except as provided in §4458.12, §§4445 through 4459 apply to equipment that contains or contacts hazardous wastes with organic concentrations of at least ten percent (10%) by weight that are managed in one of the following:

(a) A unit that is subject to the permitting requirements of chapter 46, or

(b) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of §4206.6 and §4202.7 (that is, a hazardous waste recycling unit that is not a "90-day" tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of chapter 46, or

(c) A unit that is exempt from permitting under the provisions of §4202.6 and §4202.7 (that is, a "90-day" tank or container) and is not a recycling unit under the provisions of §4103.

4445.3 For the owner or operator of a facility subject to §§4445 through 4459 and who received a final permit under Chapter 46 and §4 of HWMA (D.C. Code §6-703) before December 6, 1996, the requirements of §§4445 through 4459 shall be incorporated into the permit when the permit is reissued in accordance with the requirements of §4705 or reviewed in accordance with the requirements of §4618.4. Until the owner or operator receives a final permit incorporating the requirements of §§4445 through 4459, the owner or operator is subject to the requirements of 40 CFR 265, subpart BB, subject to the restriction of §4401.2.

4445.4 Each piece of equipment to which §§4445 through 4459 applies shall be marked in a manner that it can be distinguished readily from other pieces of equipment.

4445.5 Equipment that is in vacuum service is excluded from the requirements of §§4446 through 4454.1 if it is identified as required in §4458.8(g).

4445.6 Equipment that contains or contacts hazardous waste with an organic concentration of at least ten percent (10%) by weight for less than three hundred (300) hours per calendar year is excluded from the requirements of §§4446 through 4454.1 if it is identified, as required in §4458.8(h).

4445.7 As used in §§4445 through 4459, all terms shall have the meaning given them in Chapters 40-54 and HWMA.

4446 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: PUMPS IN LIGHT LIQUID SERVICE

4446.1 Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §4457.2, except as provided in §§4446.7, 4446.8, and 4446.9.

4446.2 Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

4446.3 If an instrument reading of ten thousand (10,000) ppm or greater is measured, a leak is detected.

4446.4 If there are indications of liquids dripping from the pump seal, a leak is detected.

4446.5 When a leak is detected, it shall be repaired as soon as practicable, but not later than fifteen (15) calendar days after it is detected, except as provided in §§4453.1 through 4453.5.

4446.6 A first attempt at repair for example, tightening the packing gland) shall be made no later than five (5) calendar days after each leak is detected.

4446.7 Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of §§4446.1 and 4446.2, provided the following requirements are met:

(a) Each dual mechanical seal system shall be:

(1) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(2) 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 §4454.1; or

(3) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to the atmosphere; and

(b) The barrier fluid system shall not be a hazardous waste with organic concentrations ten percent (10%) or greater by weight;

(c) Each barrier fluid system shall be equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both;

(d) Each pump shall be checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals;

(e) Each sensor as described in §4446.7(c) shall be checked daily or be equipped with an audible alarm that shall be checked monthly to ensure that it is functioning properly; and

(f) 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. 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 the first sentence of this paragraph, a leak is detected. When a leak is detected, it shall be repaired as soon as practicable, but not later than fifteen (15) calendar days after it is detected, except as provided in §4453. A first attempt at repair (for example, relapping the seal) shall be made no later than five (5) calendar days after each leak is detected.

4446.8 Any pump that is designated, as described in §4458.8(b), for no detectable emissions, as indicated by an instrument reading of less than five hundred (500) ppm above background, is exempt from the requirements of §§4446.1, 4446.2, 4446.5, 4446.6, and 4446.7 if the pump meets the following requirements:

(a) The pump shall have no externally actuated shaft penetrating the pump housing;

(b) The pump shall operate with no detectable emissions as indicated by an instrument reading of less than five hundred (500) ppm above background as measured by the methods specified in §4457.3; and

(c) The pump shall be tested for compliance with §4446.8(b) initially upon designation, annually, and at other times as requested by the Director.

4446.9 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 §§4428.10 through 4428.25 and 4454, it is exempt from the requirements of §§4446.1 through 4446.8.

4447 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: COMPRESSORS

4447.1 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 §§4447.8 and 4447.9.

4447.2 Each compressor seal system as required in §4447.1 shall be:

(a) Operated with the barrier fluid at a pressure that is at all times greater than the compressor stuffing box pressure, or

(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 §4454.1, or

(c) Equipped with a system that purges the barrier fluid into a hazardous waste stream with no detectable emissions to atmosphere.

4447.3 The barrier fluid shall not be a hazardous waste with organic concentrations ten percent (10%) or greater by weight.

4447.4 Each barrier fluid system as described in §§4447.1 through 4447.3 shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

4447.5 Each sensor as required in §4447.4 shall be checked daily or shall be equipped with an audible alarm that shall 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 shall be checked daily.

4447.6 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.

4447.7 If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under §4447.6, a leak is detected. The leak shall be repaired as soon as practicable, but not later than fifteen (15) calendar days after it is detected, except as provided in §4453. A first attempt at repair (for example, tightening the packing gland) shall be made no later than five (5) calendar days after each leak is detected.

4447.8 A compressor is exempt from the requirements of §§4447.1 and 4447.2 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 §4454.1, except as provided in §4447.9.

4447.9 Any compressor that is designated, as described in §4458.8(b), for no detectable emissions as indicated by an instrument reading of less than five hundred (500) ppm above background is exempt from the requirements of this section if the compressor:

(a) Is determined to be operating with no detectable emissions, as indicated by an instrument reading of less than five hundred (500) ppm above background, as measured by the method specified in §4457.3.

(b) Is tested for compliance with §4447.9(a) initially upon designation, annually, and at other times as requested by the Director.

4448 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE

4448.1 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 five hundred (500) ppm above background, as measured by the method specified in §4457.3.

4448.2 After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than five hundred (500) ppm above background, as soon as practicable, but no later than five (5) calendar days after each pressure release, except as provided in §4453.

4448.3 No later than five (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 five hundred (500) ppm above background, as measured by the method specified in §4457.3.

4448.4 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 §4454.1 is exempt from the requirements of this section.

4449 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: SAMPLING CONNECTION SYSTEMS

4449.1 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.

4449.2 Each closed-purge, closed-loop, or closed-vent system as required in §4449.1 shall meet one of the following requirements:

(a) Return the purged process fluid directly to the process line;

(b) Collect and recycle the purged process fluid; or

(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 §§4477 and 4478 or a control device that complies with the requirements of §§4428.10 through 4428.25 and 4454.

4449.3 *In-situ* sampling systems and sampling systems without purges are exempt from the requirements of §§4449.1 and 4449.2.

4450 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: OPEN-ENDED VALUES OR LINES

4450.1 Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve.

4450.2 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.

4450.3 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.

4450.4 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 §§4450.1 and 4450.2 at all other times.

4451 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE

4451.1 Each valve in gas/vapor or light liquid service shall be monitored monthly to detect leaks by the methods specified in §4457.2 and shall comply with §§4451.2 through 4451.5, except as provided in §§4451.6, 4451.7, and 4451.8, and §§4455 and 4456.

4451.2 If an instrument reading of ten thousand (10,000) ppm or greater is measured, a leak is detected.

4451.3 Any valve for which a leak is not detected for two (2) successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

4451.4 If a leak is detected, the valve shall be monitored monthly until a leak is not detected for two (2) successive months. When a leak is detected, it shall be repaired as soon as practicable, but no later than fifteen (15) calendar days after the leak is detected, except as provided in §4453. A first attempt at repair shall be made no later than five (5) calendar days after each leak is detected.

4451.5 First attempts at repair include, but are not limited to, the following best practices where practicable:

(a) Tightening of bonnet bolts;

(b) Replacement of bonnet bolts;

(c) Tightening of packing gland nuts; and

(d) Injection of lubricant into lubricated packing.

4451.6 Any valve that is designated, as described in §4458.8(b), for no detectable emissions, as indicated by an instrument reading of less than five hundred (500) ppm above background, is exempt from the requirements of §4451.1 if the valve:

(a) Has no external actuating mechanism in contact with the hazardous waste stream;

(b) Is operated with emissions less than five hundred (500) ppm above background as determined by the method specified in §4457.3; and

(c) Is tested for compliance with §4451.6(b) initially upon designation, annually, and at other times as requested by the Director.

4451.7 Any valve that is designated, as described in §4458.9(a), as an unsafe-to-monitor valve is exempt from the requirements of §4451.1 if:

(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 §4451.1; and

(b) The owner or operator of the valve adheres to a written plan that requires monitoring the valve as frequently as practicable during safe-to-monitor times.

4451.8 Any valve that is designated, as described in §4458.9(b), as a difficult-to-monitor valve is exempt from the requirements of §4451.1 if:

(a) The owner or operator of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than two (2) meters above a support surface;

(b) The hazardous waste management unit within which the valve is located was in operation before June 21, 1990; and

(c) The owner or operator of the valve follows a written plan that requires monitoring the valve at least once per calendar year.

4452 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS

4452.1 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 five (5) days by the method specified in §4457.2 if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method.

4452.2 If an instrument reading of ten thousand (10,000) ppm or greater is measured, a leak is detected.

4452.3 When a leak is detected, it shall be repaired as soon as practicable, but not later than fifteen (15) calendar days after it is detected, except as provided in §4453.

4452.4 The first attempt at repair shall be made no later than five (5) calendar days after each leak is detected.

4452.5 First attempts at repair include, but are not limited to, the best practices described under §4451.5.

4452.6 Any connector that is inaccessible or is ceramic or ceramic-lined (for example, porcelain, glass, or glass-lined) is exempt from the monitoring requirements of §4452.1 and from the recordkeeping requirements of §§4458.

4453 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: DELAY OF REPAIR

4453.1 Delay of repair of equipment for which leaks have been detected shall 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.

4453.2 Delay of repair of equipment for which leaks have been detected shall 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 ten percent (10%) by weight.

4453.3 Delay of repair for valves shall be allowed if:

(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; and

(b) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §§4428.10 through 4428.25 and 4454.

4453.4 Delay of repair for pumps shall be allowed if:

(a) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system; and

(b) Repair is completed as soon as practicable, but not later than six (6) months after the leak was detected.

4453.5 Delay of repair beyond a hazardous waste management unit shutdown shall 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 shall not be allowed unless the next hazardous waste management unit shutdown occurs sooner than six (6) months after the first hazardous waste management unit shutdown.

4454 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES

4454.1 Owners and operators of closed-vent systems and control devices subject to §§4445 through 4459 shall comply with the provisions of §§4428.10 through 4428.25(b). Compliance dates are given in §§4454.2 through 4454.5.

4454.2 The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of §§4445 through 4459 on the effective date that the facility becomes subject to the provisions of §§4445 through 4459 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 thirty (30) months after the effective date that the facility becomes subject to §§4445 through 4459 for installation and startup.

4454.3 Any unit that begins operation after December 21, 1990, and is subject to the provisions of §§4445 through 4459 when operation begins, shall comply with the rules immediately (that is, shall have control devices installed and operating on startup of the affected unit); and the thirty (30) month implementation schedule does not apply.

4454.4 The owner or operator of any facility in existence on the effective date of a statutory or an EPA or District regulatory amendment that renders the facility subject to §§4445 through

4457 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: TEST METHODS AND PROCEDURES

4457.1 Each owner or operator subject to the provisions of §§4445 through 4449 shall comply with the test methods and procedures requirements provided in this section.

4457.2 Leak detection monitoring, as required in §§4446 through 4456, shall comply with the following requirements:

(a) Monitoring shall comply with Reference Method 21 in 40 CFR part 60;

(b) The detection instrument shall meet the performance criteria of Reference Method 21;

(c) The instrument shall be calibrated before use on each day of its use by the procedures specified in Reference Method 21;

(d) Calibration gases shall be:

(1) Zero air (less than ten (10) ppm of hydrocarbon in air);

(2) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten thousand (10,000) ppm methane or n-hexane; and

(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.

4457.3 When equipment is tested for compliance with no detectable emissions, as required in §§4446.8, 4447.9, 4448, and 4451.6, the test shall comply with the following requirements:

(a) The requirements of §4457.2 shall apply;

(b) The background level shall be determined as set forth in Reference Method 21; and

(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; and

(d) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with five hundred (500) ppm for determining compliance.

4457.4 In accordance with the waste analysis plan required by §4403.5, an owner or operator of a facility shall determine, for each piece of equipment, whether the equipment contains or contacts a hazardous waste with organic concentration that equals or exceeds ten percent (10%) by weight using the following:

(a) Methods described in ASTM Methods D 2267-88, E 169-87, E 168-88, E 260-85 (incorporated by reference under §4017.1(h));

(b) Method 9060 or 8260 of SW-846 (incorporated by reference under §5300.1 through 5300.3); or

(c) Application of 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 ten percent (10%), 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.

4457.5 If an owner or operator determines that a piece of equipment contains or contacts a hazardous waste with organic concentrations at least ten percent (10%) by weight, the determination can be revised only after following the procedures in §4457.4(a) or (b).

4457.6 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 ten percent (10%) by weight, the procedures in §4457.4(a) or (b) can be used to resolve the dispute.

4457.7 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.

4457.8 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-2879-92 (incorporated by reference under §4017.1(j)).

4457.9 Performance tests to determine if a control device achieves 95 weight percent organic emission reduction shall comply with the procedures of §4429.3.

4458 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: RECORDKEEPING REQUIREMENTS

4458.1 Each owner or operator subject to the provisions of §§4445 through 4459 shall comply with the recordkeeping requirements of this section.

4458.2 An owner or operator of more than one hazardous waste management unit subject to the provisions of §§4445 through 4459 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.

4458.3 Owners and operators shall record the following information in the facility operating record:

(a) For each piece of equipment to which §§4445 through 4459 applies:

(1) Equipment identification number and hazardous waste management unit identification;

(2) Approximate locations within the facility (for example, identify the hazardous waste management unit on a facility plot plan);

(3) Type of equipment (for example. a pump or pipeline valve);

(4) Percent-by-weight total organics in the hazardous waste stream at the equipment;

(5) Hazardous waste state at the equipment (for example, gas/vapor or liquid);

(6) Method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals"); and

(b) For facilities that comply with the provisions of §4428.11, an implementation schedule as specified in §4428.11;

(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 §4430.3(c); and

(d) Documentation of compliance with §4454.1, including the detailed design documentation or performance test results specified in §4430.3(d).

4458.4 When each leak is detected as specified in §§4446, 4447, 4451, and 4452, the following requirements apply:

(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 §4452.1, and the date the leak was detected, shall be attached to the leaking equipment;

(b) The identification on equipment, except on a valve, may be removed after it has been repaired; and

(c) The identification on a valve may be removed after it has been monitored for two (2) successive months as specified in §§4451.3 and 4451.4 and no leak has been detected during those two (2) months.

4458.5 When each leak is detected as specified in §§4446, 4447, 4451, and 4452, the following information shall be recorded in an inspection log and shall be kept in the facility operating record:

(a) The instrument and operator identification numbers and the equipment identification number;

(b) The date evidence of a potential leak was found in accordance with §4452.1;

(c) The date the leak was detected and the dates of each attempt to repair the leak;

(d) Repair methods applied in each attempt to repair the leak;

(e) "Above 10,000" if the maximum instrument reading measured by the methods specified in §4457.2 after each repair attempt is equal to or greater than ten thousand (10,000) ppm;

(f) "Repair delayed" and the reason for the delay if a leak is not repaired within fifteen (15) calendar days after discovery of the leak;

(g) Documentation supporting the delay of repair of a valve in compliance with §4453.3;

(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;

(i) The expected date of successful repair of the leak if a leak is not repaired within fifteen (15) calendar days; and

(j) The date of successful repair of the leak.

4458.6 Design documentation and monitoring, operating, and inspection information for each closed-vent system and control device required to comply with the provisions of §4454.1 shall be recorded and kept up-to-date in the facility operating record as specified in §4430.4. Design documentation is specified in §§4430.4(a) and 4430.4(b) and monitoring, operating, and inspection information in §§4430.4(c) through 4430.4(h).

4458.7 For a control device other than a thermal vapor incinerator, catalytic vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system, the Director shall specify the appropriate recordkeeping requirements.

4458.8 The following information pertaining to all equipment subject to the requirements in §§4446.1 through 4454.1 shall be recorded in a log that is kept in the facility operating record:

(a) A list of identification numbers for equipment (except welded fittings) subject to the requirements of §§4445 through 4459;

(b) 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 five hundred (500) ppm above background, under the provisions of §§4446.8, 4447.9, and 4451.6. The designation of this equipment as subject to the requirements of §§4446.8, 4447.9, and 4451.6 shall be signed by the owner or operator;

(c) A list of equipment identification numbers for pressure relief devices required to comply with §4448.1;

(d) The dates of each compliance test required in §§4446.8, 4447.9, 4448, and 4451.6;

(e) The background level measured during each compliance test;

(f) The maximum instrument reading measured at the equipment during each compliance test;

(g) A list of identification numbers for equipment in vacuum service; and

(h) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least ten percent (10%) by weight for less than three hundred (300) hours per calendar year.

4458.9 The following information pertaining to all valves subject to the requirements of §§4451.7 and 4451.8 shall be recorded in a log that is kept in the facility operating record:

(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; and

(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.

4458.10 The following information shall be recorded in the facility operating record for valves complying with §4456:

(a) A schedule of monitoring; and

(b) The percent of valves found leaking during each monitoring period.

4458.11 The following information shall be recorded in a log that is kept in the facility operating record:

(a) Criteria required in §§4446.7(f) and 4447.6 and an explanation of the design criteria; and

(b) Any changes to these criteria and the reasons for the changes.

4458.12 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 of §§4445 through 4459 and other specific sections:

(a) An analysis determining the design capacity of the hazardous waste management unit;

(b) A statement listing the hazardous waste influent to and effluent from each hazardous waste management unit subject to the requirements in §§4446.1 through 4454.1 and an analysis determining whether these hazardous wastes are heavy liquids; and

(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 §§4446.1 through 4454.1. The record shall include supporting documentation as required by §4457.4(c) 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 (for example, 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 §§4446.1 through 4454.1, then a new determination is required.

4458.13 Records of the equipment leak information required by §4458.5 and the operating information required by §4458.6 need be kept only three (3) years.

4458.14 The owner or operator of a facility with equipment that is subject to §§4445 through 4459 and to regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with §§4445 through 4459 either by documentation pursuant to §4458, 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 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.

4459 AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS: REPORTING REQUIREMENTS

4459.1 Owners and operators subject to the requirements of §§4445 through 4459 shall submit a semiannual report to the Director by dates the Director specifies. The report shall include the following information:

(a) The Environmental Protection Agency identification number, name, and address of the facility;

(b) For each month during the semiannual reporting period:

(1) The equipment identification number of each valve for which a leak was not repaired as required in §4451.4;

(2) The equipment identification number of each pump for which a leak was not repaired as required in §§4446.5, 4446.6, and 4446.7(f); and

(3) The equipment identification number of each compressor for which a leak was not repaired as required in §4447.7; and

(c) Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period; and

(d) For each month during the semiannual reporting period, dates when the control device installed as required by §§4446, 4447, 4448, or 4449 exceeded or operated outside of the design specifications as defined in §4458.6 and as indicated by the control device monitoring required by §4454.1 and was not corrected within twenty-four (24) hours, the duration and cause of each exceedance, and any corrective measures taken.

4459.2 If, during the semiannual reporting period, leaks from valves, pumps, and compressors are repaired as required in §§4451.4, 4446.5, 4446.6, 4446.7(f), and 4447.7, respectively, and the control device does not exceed or operate outside of the design specifications as defined in §4458.6 for more than twenty-four (24) hours, a report to the Director is not required.

4460-4473 [RESERVED]

4474 AIR EMISSION STANDARDS FOR TANKS AND CONTAINERS

4474.1 The requirements of §§4474 through 4483 apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks or containers subject to either §§4415, 4416, or 4400.3 and 4018 except as §§4400.1 through 4400.12 and 4474.2 provide otherwise.

4474.2 The requirements of §§4474 through 4483 do not apply to the following waste management units at the facility:

(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;

(b) A container that has a design capacity less than or equal to one-tenths (0.1) cubic meter (m^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;

(d) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under the corrective action authorities of RCRA §3008(h), or §§4 and 6(a)(9), 11, and 12, of HWMA (D.C. Code §§6-703 and 6-705(a)(9), 6-710 and 6-711), CERCLA authorities, or similar Federal, or District authorities;

(e) 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;

(f) 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 §4474.2(f), a tank for which the air emission control includes an enclosure, as opposed to a cover, shall be in compliance with the enclosure and control device requirements of §4477.9; and

(g) A tank that has a process vent as defined in §5400.1.

4474.3 For the owner and operator of a facility subject to §§4474 through 4483 who received a final permit under Chapter 46 and §4 of HWMA (D.C. Code 6-703) before December 6, 1996, the requirements of §§4474 through 4483 shall be incorporated into the permit when the permit is reissued in accordance with the requirements of §4705 or reviewed in accordance with the requirements of §4618.4. Until the permit is reissued in accordance with the requirements of §4705 or reviewed in accordance with the requirements of §4618.4, the owner and operator is subject to the requirements of 40 CFR part 265, subpart CC as restricted by §4401.2.

4474.4 The requirements of §§4474 through 4483, except for the recordkeeping requirements specified in §4481.8, 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:

(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;

(b) The owner or operator prepares documentation, in accordance with the requirements of §4481.8, explaining why an undue safety hazard would be created if air emission controls specified in §§4477 through 4479.3 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 §4474.4(a); and

(c) The owner or operator notifies the Director in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of §4474.4(a) are managed at the facility in tanks or containers meeting the conditions of §4474.4(b). 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.

4475 AIR EMISSION STANDARDS FOR TANKS AND CONTAINERS: GENERAL

4475.1 Section 4475 applies to the management of hazardous waste in tanks and containers subject to §§4474 through 4483.

4475.2 The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in §§4477 through 4479.3, as applicable to the hazardous waste management unit, except as provided for in §4475.3.

4475.3 A tank or container is exempt from standards specified in §§4477 through 4479.3, as applicable, provided that the waste management unit is one of the following:

(a) A tank or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than five hundred (500) parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in §4476.1. The owner or operator shall review and update, as necessary, this determination at least once every twelve (12) months following the date of the initial determination for the hazardous waste streams entering the unit;

(b) A tank 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:

(1) 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 §4476.2;

(2) 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 ninety-five percent (95%), and the average VO concentration of the hazardous waste at the point of waste treatment is less than one hundred (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 §4476.2;

(3) 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 §4476.2;

(4) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

(A) The organic reduction efficiency (R) for the process is equal to or greater than ninety-five percent (95%), and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than ninety-five percent (95%). The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in §4476.2; or

(B) 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 §4476.2;

(5) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

(A) 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 that use air emission controls in accordance with the standards specified in §§4477 through 4479.3, as applicable to the waste management unit;

(B) 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; and

(C) 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 five hundred (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 §4476.1. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in §4476.2;

(6) 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 ninety-five percent (95%) 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 ten thousand (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 §4476.2 and §4476.1, respectively; and

(7) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of §4475(b), 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:

(A) 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 twenty-five (25) ppmw, whichever is less; and

(B) 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 at least one-tenths (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/m^3] at twenty-five degrees Celsius (25°C);

(c) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements §4475.3(b)(4); and

(d) A tank or container for which all hazardous waste placed in the unit either:

(1) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in 40 CFR part 268--Land Disposal

Restrictions under Table "Treatment Standards for Hazardous Waste" in 40 CFR 268.40, as incorporated by reference at §5003.9; or

(2) The organic hazardous constituents in the waste have been treated by the treatment technology established by the Department for the waste in §5003.10(a), or have been removed or destroyed by an equivalent method of treatment approved by the Department pursuant to §5003.10(c).

4475.4 The Director may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank or container exempted from using air emission controls under the provisions of §4475 as follows:

(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 §4476.1. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of §4476.2;

(b) In performing a waste determination pursuant to §4475.4(a), the sample preparation and analysis shall be conducted as follows:

(1) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in §4475.4(b)(2); and

(2) If the Director determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank or container, then the Director may choose an appropriate method;

(c) In a case when the owner or operator is requested to perform the waste determination, the Director may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis;

(d) In a case when the results of the waste determination performed or requested by the Director 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 §4475.4(a) shall be used to establish compliance with the requirements of §§4474 through 4483; and

(e) In a case when the owner or operator has used an averaging period greater than one (1) hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Director may elect to establish compliance with §§4474 through 4483 by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a one (1) hour period as follows:

(1) 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 §4476.1;

(2) Results of the waste determination performed or requested by the Director showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than five hundred (500) ppmw shall constitute noncompliance with §§4474 through 4483 except in a case as provided for in §4475.4(e)(3); and

(3) 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 one (1) hour to be less than five hundred (500) ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given one (1) hour period may be equal to or greater than five hundred (500) ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (for example, test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of §§4476.1 and 4481 shall be considered by the Director together with the results of the waste determination performed or requested by the Director in establishing compliance with §§4474 through 4483.

4476 AIR EMISSION STANDARDS FOR TANKS AND CONTAINERS: WASTE DETERMINATION PROCEDURES

4476.1 Waste determination procedures to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination, shall be as follows:

(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 §4475.3(a) from using air emission controls in accordance with standards specified in §§4477 through 4479.3, as applicable to the waste management unit; and

(b) For a waste determination that is required by §4476.1(a), the average VO concentration of a hazardous waste at the point of waste origination shall be determined in accordance with the procedures specified in 40 CFR 265.1084(a)(2) through (a)(4), subject to the restrictions of §4401.2.

4476.2 Waste determination procedures for treated hazardous waste shall include the following:

(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 §§4475.3(b)(1) through 4475.3(b)(6) from using air emission controls in accordance with standards specified in §§4477 through 4479.3, as applicable to the waste management unit; and

(b) The waste determination for a treated hazardous waste shall be performed in accordance with the procedures specified in 40 CFR 265.1084(b)(2) through (b)(9) subject to the restrictions of §4401.2, as applicable to the treated hazardous waste.

4476.3 Procedures to determine the maximum organic vapor pressure of a hazardous waste in a tank, shall be as follows:

(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 §4477.3; and

(b) The maximum organic vapor pressure of the hazardous waste may be determined in accordance with the procedures specified in 40 CFR 265.1084 (c)(2) through (c)(4), subject to the restrictions of §4401.2.

4476.4 The procedure for determining no detectable organic emissions for the purpose of complying with §§4474 through 4483 shall be conducted in accordance with the procedures specified in 40 CFR 265.1084(d), subject to the restrictions of §4401.2.

4477 AIR EMISSION STANDARDS: TANKS

4477.1 The provisions of this section apply to the control of air pollutant emissions from tanks for which §4475.2 references the use of §4477 for air emission control.

4477.2 The owner or operator shall control air pollutant emissions from each tank subject to this section in accordance with the following requirements as applicable:

(a) For a tank that manages hazardous waste that meets all of the conditions specified in §4477.2(a), the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in §4477.3 or the Tank Level 2 controls specified in §4477.4. Specific requirements are as follows:

(1) The hazardous waste in the tank has a maximum organic vapor pressure that is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

(A) For a tank design capacity equal to or greater than one hundred fifty-one (151) cubic meters (m^3), the maximum organic vapor pressure limit for the tank is five and two-tenths (5.2) kiloPascal (kPa);

(B) For a tank design capacity equal to or greater than seventy-five (75) cubic meters (m^3) but less than one hundred fifty-one (151) cubic meters (m^3), the maximum organic vapor pressure limit for the tank is twenty-seven and six-tenths (27.6) kPa; and

(C) For a tank design capacity less than seventy-five (75) cubic meters (m^3), the maximum organic vapor pressure limit for the tank is seventy-six and six-tenths (76.6) kPa; and

(2) 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 §4477.2(a); and

(3) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in 40 CFR 265.1081 subject to the restrictions of §4401.2; and

(b) For a tank that manages hazardous waste that does not meet all of the conditions specified in §4477.2(a), the owner or operator shall control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of §4477.4. 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 §4477.2(a)(1).

4477.3 Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in §4477.3:

(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 §4476.3. 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 §4477.2(a)(1), as applicable to the tank;

(b) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(1) 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 (for example, a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (for example, a horizontal cylindrical tank equipped with a hatch);

(2) 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;

(3) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:

(A) 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

(B) 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 to provide access to the tank for routine inspection, maintenance, or other activities needed for normal operations, removal of accumulated sludge or other residues from the bottom of the tank, or when 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.

(4) 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; and

(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:

(1) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of these 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; and

(B) To remove accumulated sludge or other residues from the bottom of tank;

(2) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that 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's 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; and

(3) Opening of a safety device, as defined in 40 CFR 265.1081 subject to the restrictions of §4401.2, is allowed at any time conditions require doing so to avoid an unsafe condition.

(d) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements:

(1) The owner or operator shall visually inspect the fixed roof and its closure devices 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;

(2) 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 §4477. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in §4477.12;

(3) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of §4477.11; and

(4) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §4481.2.

4477.4 Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(a) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in §4477.5;

(b) A tank equipped with an external floating roof in accordance with the requirements specified in §4477.6;

(c) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in §4477.7;

(d) A pressure tank designed and operated in accordance with the requirements specified in §4477.8; or

(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 §4477.9.

4477.5 The owner or operator who controls air pollutant emissions from a tank using a fixed roof with an internal floating roof shall meet the following requirements:

(a) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(1) The internal floating roof shall be designed to float on the liquid surface except when the floating roof will be supported by the leg supports.

(2) 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:

(A) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in 40 CFR 265.1081 subject to the restrictions of §4401.2; or

(B) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(3) The internal floating roof shall meet the following specifications:

(A) 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;

(B) 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;

(C) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least ninety percent (90%) of the opening;

(D) Each automatic bleeder vent and rim space vent shall be gasketed;

(E) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover; and

(F) 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;

(b) The owner or operator shall operate the tank in accordance with the following requirements:

(1) 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;

(2) 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; and

(3) Before 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 that is, 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.

(c) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

(1) The owner or operator shall visually inspect the floating roof and its closure devices 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 ten percent (10%) open area;

(2) The owner or operator shall inspect the internal floating roof components as follows except as provided in §4477.5(c)(3):

(A) Visually inspect the internal floating roof components through openings on the fixed-roof (for example, manholes and roof hatches) at least once every twelve (12) months after initial fill, and

(B) 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 ten (10) years;

(3) As an alternative to performing the inspections specified in §4477.5(c)(2) for an internal floating roof equipped with two (2) 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 five (5) years;

(4) Before each inspection required by §4477.5(c)(2) or (c)(3), the owner or operator shall notify the Director in advance of each inspection to provide the Director with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Director of the date and location of the inspection as follows:

(A) Before 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 at least thirty (30) calendar days before refilling the tank except when an inspection is not planned as provided for in §4477.5(c)(4)(B); and

(B) When a visual inspection is not planned and the owner or operator could not have known about the inspection thirty (30) calendar days before

refilling the tank, the owner or operator shall notify the Director as soon as possible, but no later than seven (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 at least seven (7) calendar days before refilling the tank;

(5) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of §4477.11; and

(6) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §4481.2.

(d) Safety devices, as defined in 40 CFR 265.1081 subject to the restrictions of §4401.2, may be installed and operated as necessary on any tank complying with the requirements of §4477.5.

4477.6 The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the following requirements:

(a) The owner or operator shall design the external floating roof in accordance with the following requirements:

(1) The external floating roof shall be designed to float on the liquid surface except when the floating roof will be supported by the leg supports;

(2) The floating roof shall be equipped with two (2) 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. The seals shall meet the following specifications:

(A) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in 40 CFR 265.1081 subject to the restrictions of §4401.2. The total area of the gaps between the tank wall and the primary seal shall not exceed two hundred twelve (212) square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed three and eight-tenths (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 sixty-one (61) centimeters above the liquid surface; and

(B) 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 twenty-one and two-tenths (21.2) square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm); and

(3) The external floating roof shall meet the following specifications:

(A) 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;

(B) 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;

(C) 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;

(D) Each automatic bleeder vent and each rim space vent shall be equipped with a gasket;

(E) 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 ninety percent (90%) of the area of the opening;

(F) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal;

(G) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole;

(H) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere; and

(I) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(b) The owner or operator shall operate the tank in accordance with the following requirements:

(1) 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;

(2) 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 shall be open for access;

(3) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position;

(4) 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;

(5) 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;

(6) 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;

(7) 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 shall be opened for access; and

(8) 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.

(c) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

(1) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(A) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within sixty (60) calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every five (5) years;

(B) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within sixty (60) calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year;

(C) If a tank ceases to hold hazardous waste for a period of one (1) year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of §§4477.6(c)(1)(A) and 4477.6(c)(1)(B);

(D) 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:

(i) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports;

(ii) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a thirty-two hundredths (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 location;

(iii) For a seal gap measured under §4477.6(c), 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 width by its respective circumferential distance;

(iv) 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 §4477.6(a)(2);

(E) In the event that the seal gap measurements do not conform to the specifications in §4477.6(a)(2), the owner or operator shall repair the defect in accordance with the requirements of §4477.11; and

(F) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §4481.2.

(2) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(A) The owner or operator shall visually inspect the floating roof and its closure devices 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;

(B) 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 §4477. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in §4477.12;

(C) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of §4477.11; and

(D) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §4481.2.

(3) Before each inspection required by §4477.6(c)(1) or (c)(2), the owner or operator shall notify the Director in advance of each inspection to provide the Director with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Director of the date and location of the inspection as follows:

(A) Before each inspection to measure external floating roof seal gaps as required under §4477.6(c)(1), written notification shall be prepared and sent by the owner or operator so that it is received by the Director at least thirty (30) calendar days before the date the measurements are scheduled to be performed;

(B) Before 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 at least thirty (30) calendar days before refilling the tank except when an inspection is not planned as provided for in §4477.6(c)(3)(C); and

(C) When a visual inspection is not planned and the owner or operator could not have known about the inspection thirty (30) calendar days before refilling the tank, the owner or operator shall notify the Director as soon as possible, but no later than seven (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 at least seven (7) calendar days before refilling the tank.

(d) Safety devices, as defined in 40 CFR 265.1081 as restricted by §4401.2, may be installed and operated as necessary on any tank complying with the requirements of §4477.6.

4477.7 The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the following requirements:

(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:

(1) 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;

(2) 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;

(3) 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; and

(4) The closed-vent system and control device shall be designed and operated in accordance with the requirements of §4479.

(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:

(1) 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:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of these 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; and

(B) To remove accumulated sludge or other residues from the bottom of a tank; and

(2) Opening of a safety device, as defined in 40 CFR 265.1081 as restricted by §4401.2, is allowed at any time conditions require doing so to avoid an unsafe condition.

(c) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(1) The owner or operator shall visually inspect the fixed roof and its closure devices 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;

(2) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in §4479;

(3) 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 §4477. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in §4477.12;

(4) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of §4477.11; and

(5) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in §4481.2.

4477.8 The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements:

(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;

(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 §4476.4; and

(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 40 CFR 265.1081 as restricted by §4401.2, is required to open to avoid an unsafe condition.

4477.9 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 following requirements:

(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;

(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 §4479;

(c) Safety devices, as defined in 40 CFR 265.1081 as restricted by §4401.2, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of §§4477.9(a) and (b); and

(d) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in §4479.

4477.10 The owner or operator shall transfer hazardous waste to a tank subject to §4477 in accordance with the following requirements:

(a) Transfer of hazardous waste, except as provided in §4477.10(b), to the tank from another tank subject to §4477 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; and

(b) The requirements of §4477.10(a) do not apply when transferring a hazardous waste to the tank under any of the following conditions:

(1) The hazardous waste meets the average VO concentration conditions specified in §4475.3(a) at the point of waste origination;

(2) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in §4475.3(b); and

(3) The hazardous waste meets the requirements of §4475.3(d).

4477.11 The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of §§4477.3(d), 4477.5(c), 4477.6(c), or 4477.7(c) as follows:

(a) The owner or operator shall make first efforts at repair of the defect no later than five (5) calendar days after detection, and repair shall be completed as soon as possible but no later than forty-five (45) calendar days after detection except as provided in §4477.11(b); and

(b) Repair of a defect may be delayed beyond forty-five (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.

4477.12 Following the initial inspection and monitoring of the cover as required by the applicable provisions of §§4474 through 4483, subsequent inspection and monitoring may be performed at intervals longer than one (1) year under the following special conditions:

(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:

(1) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required; and

(2) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable section of §§4474 through

4483, as frequently as practicable during those times when a worker can safely access the cover; and

(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 §4477, only those portions of the tank cover and those connections to the tank (for example, fill ports, access hatches, and gauge wells) that are located on or above the ground surface.

4478 AIR EMISSION STANDARDS: CONTAINERS

4478.1 The provisions of this section apply to the control of air pollutant emissions from containers for which §4475.2 references the use of §4478 for air emission control.

4478.2 General requirements are as follows:

(a) The owner or operator shall control air pollutant emissions from each container subject to §4478 in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in §4478.2(b) apply to the container;

(1) For a container having a design capacity greater than one tenth (0.1) cubic meter (m^3) and less than or equal to forty-six hundredths (0.46) cubic meter (m^3), the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in §4478.3;

(2) For a container having a design capacity greater than forty-six hundredths (0.46) cubic meter (m^3) 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 §4478.3; and

(3) For a container having a design capacity greater than forty-six hundredth (0.46) cubic meter (m^3) 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 §4478.4; and

(b) When a container having a design capacity greater than one tenth (0.1) cubic meter (m^3) 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 §4478.5 at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

4478.3 Container Level 1 standards are as follows:

(a) A container using Container Level 1 controls is one of the following:

(1) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in §4478.6;

(2) 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 (for example, 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 (for example, a "portable tank" or bulk cargo container equipped with a screw-type cap); and

(3) 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;

(b) A container used to meet the requirements of §4478.3(a)(2) or (a)(3) 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;

(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:

(1) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) 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; and

(B) 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 fifteen (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.

(2) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of §4478, an empty container as defined in §§4104.3 through 4104.5 may be open to the atmosphere at any time (that is, covers and closure devices are not required to be secured in the closed position on an empty container); and

(B) 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 §§4104.3 through 4104.5, 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 fifteen (15) minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(3) 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 these 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;

(4) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that 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; and

(5) Opening of a safety device, as defined in 40 CFR 265.1081 as restricted by §4401.2, is allowed at any time conditions require doing so to avoid an unsafe condition;

(d) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:

(1) 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 twenty-four (24) hours after the container is accepted at the facility (that is, it does not meet the conditions for an empty container as specified in §§4104.3 through 4104.5), 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 (that is, the date the container becomes subject to the §§4474 through 4483 container standards). For purposes of 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 the appendix to 40 CFR part 262 (EPA Forms 8700-22 and 8700-22A) incorporated by reference at §4209.1, as required under §4411, at §§4411.4 through 4411.7. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of §4478.3(d)(3);

(2) In the case when a container used for managing hazardous waste remains at the facility for a period of one (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 twelve (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 §4478.3(d)(3); and

(3) 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 twenty-four (24) hours after detection and repair shall be completed as soon as possible but no later than five (5) calendar days after detection. If repair of a defect cannot be completed within five (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; and

(e) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of forty-six hundredths (0.46) cubic meter (m^3) or greater, that do not meet applicable DOT regulations as specified in §4478.6, are not managing hazardous waste in light material service.

4478.4 Container Level 2 standards are as follows:

(a) A container using Container Level 2 controls is one of the following:

(1) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in §4478.6;

(2) A container that operates with no detectable organic emissions as defined in 40 CFR 265.1081 as restricted by §4401.2, and determined in accordance with the procedure specified in §4478.7; and

(3) A container that has been demonstrated within the preceding twelve (12) months to be vapor-tight by using 40 CFR part 60, appendix A, Method 27 in accordance with the procedure specified in §4478.8; and

(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 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;

(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:

(1) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) 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; and

(B) 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 fifteen (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;

(2) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of §4478, an empty container as defined in §§4104.3 through 4104.5 may be open to the atmosphere a any time (that is, covers and closure devices are not required to be secur in the closed position on an empty container); and

(B) 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 §§4104.3 through 4104.5, 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 fifteen (15) minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first;

(3) 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 those 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;

(4) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device that 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; and

(5) Opening of a safety device, as defined in 40 CFR 265.1081 as restricted by §4401.2, is allowed at any time conditions require doing so to avoid an unsafe condition; and

(d) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

(1) 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 twenty-four (24) hours after the container is accepted at the facility (that is, does not meet the conditions for an empty container as specified in §§4104.3 through 4104.5), 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 (that is, the date the container becomes subject to the §§4474 through 4483 container standards). For purposes of 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 the appendix to 40 CFR part 262 (EPA Forms 8700-22 and 8700-22A), incorporated by reference at §4209.1, as required under §4411, at §§4411.4 through 4411.7. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of §4478.4(d)(3);

(2) In the case when a container used for managing hazardous waste remains at the facility for a period of one (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 twelve (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 §4478.4(d)(3); and

(3) 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 twenty-four (24) hours after detection, and repair shall be completed as soon as possible but no later than five (5) calendar days after detection. If repair of a defect cannot be completed within five (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.

4478.5 Container Level 3 standards are as follows:

(a) A container using Container Level 3 controls is one of the following:

(1) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of §4478.5(b)(2); and

(2) A container that is vented inside an enclosure that is exhausted through a closed-vent system to a control device in accordance with the requirements of §4478.5(b); and

(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:

(1) 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; and

(2) The closed-vent system and control device shall be designed and operated in accordance with the requirements of §4479; and

(c) Safety devices, as defined in 40 CFR 265.1081 as restricted by §4401.5, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of §4478.5(a);

(d) Owners and operators using Container Level 3 controls in accordance with the provisions of §§4474 through 4483 shall inspect and monitor the closed-vent systems and control devices as specified in §4479; and

(e) Owners and operators that use Container Level 3 controls in accordance with the provisions of §§4474 through 4483 shall prepare and maintain the records specified in §4481.3.

4478.6 For the purpose of compliance with §4478.3(a)(1) or §4478.4(a)(1), containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

(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;

(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;

(c) For the purpose of complying with §§4474 through 4483, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in §4478.6(d); and

(d) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with §§4474 through 4483, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

4478.7 To determine compliance with the no detectable organic emissions requirement of §4478.4(a)(2), the procedure specified in §4476.4 shall be used.

(a) Each potential leak interface (that is, 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.

(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.

4478.8 The 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 §4478.4(a)(3) is as follows:

(a) A pressure measurement device shall be used that has a precision of ±two and one-half (2.5) mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness; and

(b) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to seven hundred fifty (750) Pascals within five (5) minutes after it is pressurized to a minimum of four thousand five hundred (4,500) Pascals, then the container is determined to be vapor-tight.

4479 AIR EMISSION STANDARDS FOR TANKS AND CONTAINERS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES

4479.1 This section 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 §§4474 through 4483.

4479.2 The closed-vent system shall meet the following requirements:

(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 §4479.3;

(b) The closed-vent system shall be designed and operated in accordance with the requirements specified in §4428.21;

(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 §4479.2(c)(1) or a seal or locking device as specified in §4479.2(c)(2). For the purpose of complying with §4479.2(c), 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;

(1) If a flow indicator is used to comply with §4479.2(c), 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 §4479.2(c)(1), a flow indicator means a device that indicates the presence of either gas or vapor flow in the bypass line; and

(2) If a seal or locking device is used to comply with §4479.2(c), the device shall be placed on the mechanism that controls the bypass device position (for example,

valve handle or 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 these 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; and

(d) The owner or operator shall inspect and monitor the closed-vent system in accordance with the procedure specified in §4428.22.

4479.3 The control device shall meet the following requirements:

(a) The control device shall be one of the following devices:

(1) 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 ninety-five percent (95%) by weight;

(2) An enclosed combustion device designed and operated in accordance with the requirements of §4428.13; or

(3) A flare designed and operated in accordance with the requirements of §4428.14.

(b) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this section shall comply with the following requirements:

(1) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of §4479.3(a), as applicable, shall not exceed two hundred forty (240) hours per year;

(2) The specifications and requirements in §4479.3(a) for control devices do not apply during periods of planned routine maintenance;

(3) The specifications and requirements in §4479.3(a) for control devices do not apply during a control device system malfunction;

(4) The owner or operator shall demonstrate compliance with the requirements of §4479.3(b)(1) (that is, planned routine maintenance of a control device, during which the control device does not meet the specifications of §4479.3(a), as applicable, shall not exceed two hundred forty (240) hours per year) by recording the information specified in §4481.4(a)(5);

(5) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence to minimize excess emissions of air pollutants; and

(6) 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 (that is, 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;

(c) The owner or operator using a carbon adsorption system to comply with §4479.3(a) shall operate and maintain the control device in accordance with the following requirements:

(1) 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 §4428.17 or §4428.18; and

(2) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of §4428.24, regardless of the average volatile organic concentration of the carbon;

(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 §4479.3(a) shall operate and maintain the control device in accordance with the requirements of §4428.20;

(e) The owner or operator shall demonstrate that a control device achieves the performance requirements of §4479.3(a) as follows:

(1) An owner or operator shall demonstrate using either a performance test as specified in §4479.3(e)(3) or a design analysis as specified in §4479.3(e)(4) the performance of each control device except for the following:

(A) A flare;

(B) A boiler or process heater with a design heat input capacity of forty-four (44) megawatts or greater;

(C) A boiler or process heater into which the vent stream is introduced with the primary fuel;

(D) A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under chapter 46 and has designed and operates the unit in accordance with the requirements of §4507; or

(E) 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 §4507.

(2) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in §4428.15;

(3) For a performance test conducted to meet the requirements of §4479.3(e)(1), the owner or operator shall use the test methods and procedures specified in §4429.3;

(4) For a design analysis conducted to meet the requirements of §4479.3(e)(1), the design analysis shall meet the requirements specified in §4430.3(d)(3); and

(5) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of §4479.3(a) 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;

(f) If the owner or operator and the Director 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 §4479.3(e)(3). The Director may choose to have an authorized representative observe the performance test; and

(g) The owner or operator shall inspect and monitor the closed-vent system and control device in accordance with the procedures specified in §§4428.16(b) and 4428.22. The readings from each monitoring device required by §4428.16(b) 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 §4479.

4480 AIR EMISSION STANDARDS FOR TANKS AND CONTAINERS: INSPECTION AND MONITORING REQUIREMENTS

4480.1 The owner or operator shall inspect and monitor air emission control equipment used to comply with §§4474 through 4483 in accordance with the applicable requirements specified in §§4477 through 4479.

4480.2 The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by §4480.1. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under §4404.

4481 AIR EMISSION STANDARDS FOR TANKS AND CONTAINERS: RECORDKEEPING REQUIREMENTS

4481.1 Each owner or operator of a facility subject to requirements of §§4474 through 4483 shall record and maintain the information specified in this section, as applicable to the facility. Except for air emission control equipment design documentation and information required by §4481.8, records required by this section shall be maintained in the operating record for a minimum of three (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 §§4481.8 and 4481.9 shall be maintained in the operating record for as long as the waste management unit is not using air

emission controls specified in §§4477 through 4479 in accordance with the conditions specified in §§4474.4 or 4474.2(f), respectively.

4481.2 The owner or operator of a tank using air emission controls in accordance with the requirements of §4477 shall prepare and maintain records for the tank that include the following information:

(a) For each tank using air emission controls in accordance with the requirements of §4477, the owner or operator shall record:

(1) A tank identification number (or other unique identification description as selected by the owner or operator);

(2) A record for each inspection required by §4477 that includes the following information:

(A) Date inspection was conducted; and

(B) 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 §4477, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected;

(b) In addition to the information required by §4481.2(a), the owner or operator shall record the following information, as applicable to the tank:

(1) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in §4477.3 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 §4477.3. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results;

(2) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in §4477.5 shall prepare and maintain documentation describing the floating roof design;

(3) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in §4477.6 shall prepare and maintain the following records:

(A) Documentation describing the floating roof design and the dimensions of the tank; and

(B) Records for each seal gap inspection required by §4477.6(c) 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 §4477.6(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; and

(4) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in §4477.9 shall prepare and maintain the following records:

(A) Records for the most recent set of calculations and measurements the owner or operator performed 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; and

(B) Records required for the closed-vent system and control device in accordance with the requirements of §4481.4.

4481.3 The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of §4478 shall prepare and maintain records that include the following information:

(a) Records for the most recent set of calculations and measurements the owner or operator performed 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; and

(b) Records required for the closed-vent system and control device in accordance with the requirements of §4481.4

4481.4 The owner or operator using a closed-vent system and control device in accordance with the requirements of §4479 shall prepare and maintain records that include the following information:

(a) Documentation for the closed-vent system and control device that includes:

(1) 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 §4481.4(a)(2) or by performance tests as specified in §4481.4(a)(3) when the tank, or container is or would be operating at capacity or the highest level reasonably expected to occur;

(2) If a design analysis is used, then design documentation as specified in §4430.3(d). 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 §4430.3(d)(3) and certification by the owner or operator that the control equipment meets the applicable specifications;

(3) If performance tests are used, then a performance test plan as specified in §4430.3(c) and all test results;

(4) Information as required by §§4430.4(a) and 4430.4(b), as applicable;

(5) An owner or operator shall record, on a semiannual basis, the information specified in §4481.4(a)(5) for those planned routine maintenance operations that would require the control device not to meet the requirements of §4479.3(a), as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next six (6) month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous six (6) month period. This description shall include the type of maintenance performed and the total number of hours during those six (6) months that the control device did not meet the requirements of §4479.3(a), as applicable, due to planned routine maintenance.

(6) An owner or operator shall record the information specified in §4481.4(a)(6) for those unexpected control device system malfunctions that would require the control device not to meet the requirements of §4479.3(a), as applicable.

(A) The occurrence and duration of each malfunction of the control device system.

(B) 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; and

(C) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation; and

(7) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with §4479.3(c)(2).

4481.5 For tanks and containers exempted under the hazardous waste organic concentration conditions specified in §4475.3(a) or §§4475.3(b)(1) through 4475.3(b)(6), the owner or operator shall record the information used for each waste determination (for example, 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 §4476.

4481.6 An owner or operator designating a cover as "unsafe to inspect and monitor" pursuant to §4477.12, §4400.3, or §4018 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.

4481.7 The owner or operator of a facility that is subject to §§4474 through 4483 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 sections of §§4474 through 4483 by documentation either pursuant to §§4474 through 4483, 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 §4481.

4481.8 For each tank or container not using air emission controls specified in §§4477 through 4479 in accordance with the conditions specified in §4474.4, the owner or operator shall record and maintain the following information:

(a) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in §4474.4(a).

(b) A description of how the hazardous waste containing the organic peroxide compounds identified in §4481.8(a) are managed at the facility in tanks and containers. This description shall include:

(1) 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; and

(2) 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; and

(c) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in §4481.8(a) in the tanks and containers as described in §4481.8(b) would create an undue safety hazard if the air emission controls, as required under §§4477 through 4479.3, are installed and operated on these waste management units. This explanation shall include the following information:

(1) 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 §§4474 through 4483, shall 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; and

(2) 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 §§4474 through 4483, shall 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.

4481.9 For each hazardous waste management unit not using air emission controls specified in §§4477 through 4479 in accordance with the requirements of §4474.2(f), the owner and operator shall record and maintain the following information:

(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; and

(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.

4482 AIR EMISSION STANDARDS FOR TANKS AND CONTAINERS: REPORTING REQUIREMENTS

4482.1 Each owner or operator managing hazardous waste in a tank or container exempted from using air emission controls under the provisions of §4475.3 shall report to the Director each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the conditions specified in §4475.3(a) or (b), as applicable. Examples of these occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than five hundred (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 §§4475.3(b)(1) through 4475.3(b)(6). The owner or operator shall submit a written report within fifteen (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.

4482.2 Each owner or operator using air emission controls on a tank in accordance with the requirements of §4477.3 shall report to the Director each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions specified in §4477.2. The owner or operator shall submit a written report within fifteen (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.

4482.3 Each owner or operator using a control device in accordance with the requirements of §4479 shall submit a semiannual written report to the Director except as provided for in §4482.5. The report shall describe each occurrence during the previous six (6) month period when either:

(a) A control device is operated continuously for twenty-four (24) hours or longer in noncompliance with the applicable operating values defined in §4430.4(d); or

(b) A flare is operated with visible emissions for five (5) minutes or longer in a two (2) hour period, as defined in §4428.14.

4482.4 The written report shall include the EPA identification number, facility name and address, an explanation why the control device could not be returned to compliance within twenty-four (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.

4482.5 A report to the Director in accordance with the requirements of §4482.3 is not required for a six (6) month period during which all control devices subject to §§4474 through 4483 are operated by the owner or operator such that:

(a) During no period of twenty-four (24) hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in §4430.4(d); and

(b) No flare was operated with visible emissions for five (5) minutes or longer in a two (2) hour period, as defined in §4428.14.

4483 [RESERVED]

4484 CONTAINMENT BUILDINGS

4484.1 The requirements of §§4484 through 4486 apply to owners or operators who store or treat hazardous waste in units designed and operated under §4485. The owner or operator is not subject to the definition of land disposal in §5400.1 provided that the unit:

(a) 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 the equipment with containment walls;

(b) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling equipment within the unit;

(c) If the unit is used to manage liquids, has:

(1) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

(2) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier;

(3) 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 §4485.2(d);

(d) Has controls sufficient to prevent fugitive dust emissions to meet the no visible emission standard in §4485.3(a)(4); and

(e) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

4485 CONTAINMENT BUILDINGS: DESIGN AND OPERATING STANDARDS

4485.1 All containment buildings shall comply with the following design standards:

(a) The containment building shall be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (for example, precipitation, wind, run-on), and to assure containment of managed wastes;

(b) The floor and containment walls of the unit, including the secondary containment system if required under §4485.2, shall 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 the equipment with containment walls. The unit shall be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes shall be chemically compatible with those wastes. The Department shall 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 §4485.1(b). 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:

(1) They provide an effective barrier against fugitive dust emissions under §4485.3(a)(4); and

(2) The unit is designed and operated in a fashion that assures that wastes shall not actually come in contact with these openings;

(c) Incompatible hazardous wastes or treatment reagents shall 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; and

(d) A containment building shall 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.

4485.2 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 shall include:

(a) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (for example, a geomembrane covered by a concrete wear surface);

(b) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building:

(1) The primary barrier shall be sloped to drain liquids to the associated collection system; and

(2) Liquids and waste shall be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time;

(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. Specific secondary containment requirements are as follows:

(1) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:

(A) Constructed with a bottom slope of one percent (1%) or more; and

(B) Constructed of a granular drainage material with a hydraulic conductivity of on hundredth (1×10^{-2}) cm/sec or more and a thickness of twelve (12) inches (thirty and one-half (30.5) cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of three hundred thousandth (3×10^{-5}) square meter per second(m^2/sec) or more;

(2) If treatment is to be conducted in the building, an area in which treatment will be conducted will be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building; and

(3) The secondary containment system shall 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 §4416.19(a). In addition, the containment building shall meet the requirements of §§4416.17 and 4416.18(a) and (b) to be considered an acceptable secondary containment system for a tank.); and

(d) For existing units other than ninety (90) day generator units, the Director may delay the secondary containment requirement for up to two (2) years, based on a demonstration by the owner or operator that the unit substantially meets the standards of §§4484 through 4486. In making this demonstration, the owner or operator shall:

(1) Provide written notice to the Director of his or her request. This notification shall 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;

(2) Respond to any comments from the Director on these plans within thirty (30) days; and

(3) Fulfill the terms of the revised plans, if the Director approves the plans.

4485.3 Owners or operators of all containment buildings shall:

(a) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(1) 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;

(2) 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;

(3) 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 shall be designated to decontaminate equipment, and any rinsate shall be collected and properly managed; and

(4) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, or cracks) 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 (for example, fabric filter or electrostatic precipitator) shall be operated and maintained with sound air pollution control practices (see 40 CFR part 60 subpart 292 for guidance). This state of no visible emissions shall be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit;

(b) Obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of §§4485.1 through 4485.3. This certification shall be required before operation of the unit and shall be placed in the facility's operating record (on-site files for generators who are not formally required to have operating records);

(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, he or she shall repair the condition promptly, in accordance with the following procedures:

(1) Upon detection of a condition that led to a release of hazardous waste (for example, upon detection of leakage from the primary barrier) the owner or operator shall:

(A) Enter a record of the discovery in the facility operating record;

(B) Immediately remove the portion of the containment building affected by the condition from service;

(C) Determine what steps will 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

(D) Within seven (7) days after the discovery of the condition, notify the Director of the condition, and within fourteen (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;

(2) The Director shall review the information submitted, make a determination regarding whether the containment building will 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; and

(3) Upon completing all repairs and cleanup the owner or operator shall 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 §4485.3(c)(1)(D); and

(d) Inspect and record in the facility's operating record, at least once every seven (7) 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.

4485.4 For containment buildings that contain areas both with and without secondary containment, the owner or operator shall:

(a) Design and operate each area in accordance with the requirements enumerated in §§4485.1 through 4485.3;

(b) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

(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.

4485.5 Notwithstanding any other provision of §§4484 through 4486 the Director may waive requirements for secondary containment for a permitted containment building where the owner or 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.

4486 CONTAINMENT BUILDINGS: CLOSURE AND POST-CLOSURE CARE

4486.1 At closure of a containment building, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (such as liners) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless §4100.16 applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings shall meet all of the requirements specified in §§4413 and 4414.

4486.2 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 §4486.1, 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 at §4413.30. In addition, for the purposes of closure, post-closure, and financial responsibility, the owner or operator shall meet all of the requirements in §§4413 and 4414.

4487-4494 [RESERVED]

4495 HAZARDOUS WASTE MUNITIONS AND EXPLOSIVES STORAGE

4495.1 The requirements of this section apply to owners or operators who store munitions and explosive hazardous wastes, except as §§4400.1 through 4400.12 provide otherwise. (NOTE: Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (§§4484 through 4486), tanks (§4416), or containers (§4415); See §4512.9 for storage of waste military munitions).

4495.2 Hazardous waste munitions and explosives storage units shall be designed and operated with containment systems, controls, and monitoring, that:

(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;

(b) Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;

(c) For wastes stored outdoors, provide that the waste and containers shall not be in standing precipitation;

(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 (for example, additional containment, such as overpacking, or removal from the waste area); and

(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.

4495.3 Hazardous waste munitions and explosives stored under this section may be stored in one of the following:

(a) Earth-covered magazines. Earth-covered magazines shall be:

(1) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;

(2) Designed and constructed:

(A) To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

(B) To provide working space for personnel and equipment in the unit; and

(C) To withstand movement activities that occur in the unit; and

(3) 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;

(b) Above-ground magazines. Above-ground magazines shall be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion; and

(c) Outdoor or open storage areas. Outdoor or open storage areas shall be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

4495.4 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 §§4403.7 through 4403.9, the preparedness and prevention procedures of

§4409, and the contingency plan and emergency procedures requirements of §4410, then these procedures shall be used to fulfill those requirements.

4495.5 Hazardous waste munitions and explosives shall be packaged to ensure safety in handling and storage.

4495.6 Hazardous waste munitions and explosives shall be inventoried at least annually.

4495.7 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.

4495.8 At closure of a magazine or unit that 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 §4100.16 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 §§4413 and 4414, 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.

4495.9 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 §4495.8, 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 at §4413.30.

4496 INCORPORATED BY REFERENCE

4496.1 When used in Chapters 40 through 54, the following Appendices from Title 40 of the *Code of Federal Regulations* are incorporated by reference:

(a) Appendix I of 40 CFR Part 264 - Recordkeeping Instructions

(b) Appendix IV of 40 CFR Part 264 - "Cochran's Approximation to the Behrens-Fisher Students' T-Test";

(c) Appendix V of 40 CFR Part 264 - Examples of Potentially Incompatible Waste";

(d) Appendix VI of 40 CFR Part 264- Political Jurisdictions in which compliance with 40 CFR 264.18(a) must be demonstrated"; and

(e) Appendix IX of 40 CFR Part 264 - "Ground Monitoring List".

4497 [RESERVED]

Appendix I to Chapter 44 --
Crosswalk for 40 CFR Part 265 Internal References

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.1(c)(9)	260.10	5400.1
265.1(c)(10)	260.10	5400.1
265.1(c)(11)(i)(D)	260.10	5400.1
265.1(c)(13)	260.10	5400.1
265.1(c)(14)	260.10	5400.1
265.1(f)	Parts 260-270	Chpts. 40-46, 50 & 54
265.13(b)(3)(ii) Comment	260.20(c)	4001.3
265.13(b)(7)(iii)	260.22	4001.10
265.190(a)	260.11	4017
265.190(b)	260.10	5400.1
265.190(c)	260.10	5400.1
265.198(b)	260.11	4017
265.201(e)(2)	260.11	4017
265.221(a)	260.10	5400.1
265.254	260.10	5400.1
265.301(a)	260.10	5400.1
265.314(d)	260.11	4017
265.314(f)	Part 260	Chpt. 40
265.316(d)	260.10(a)	5400.1
265.340(a)	260.10	5400.1
265.370	260.10	5400.1
265.1031	Parts 260-266	Chpts. 40-45
265.1033(e)(2)	260.11	4017
265.1034(d)(1)(iii)	260.11	4017
265.1034(f)	260.11	4017
265.1035(b)(4)(iii)	260.11	4017
265.1051	Parts 260-266	Chpts. 40-45
265.1063(d)(1)	260.11	4017
265.1063(d)(2)	260.11	4017
265.1063(h)	260.11	4017

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.1081	Parts 260-266	Chpts.40-45
265.1081 waste stabilization process	260.11	4017
265.1084(a)(3)(ii)(C)	260.11(a)	4017.1
265.1084(a)(3)(iii)	260.11(a)	4017.1
265.1084(a)(3)(iii)(F) & (G)	260.11(a)	4017.1
265.1084(b)(3)(ii)(C)	260.11(a)	4017.1
265.1084(b)(3)(iii)	260.11(a)	4017.1
265.1084(b)(3)(iii)(F) & (G)	260.11(a)	4017.1
265.1084(c)(3)(i)	260.11(a)	4017.1
265.1084(c)(3)(ii)(B) & (D)	260.11	4017.1
Appendix I (2) Table 2 T93	260.10	5400.1
265.1(b)	Part 261	Chpt. 41
265.1(c)(5)	261.5	4102
265.1(c)(6)	261.6(a)(2)(3)& (4)	4103.2, 4103.3 & 4103.3(h)
265.13(a)(2)	Part 261	Chpt. 41
265.13(b)(3)(i)	Appendix I to Part 261	4112.1(a)
265.56(g) Comment	261.3(c),(d)	4100.15, 4100.16
265.76	261.5	4102
265.90(e)	261.22 Part 261, subpart D	4108.6, 4108.7 4109, 4110,4112.1(a)-(c) App. I & II to Chpt. 41
265.193(c)(4) Note	Part 261	Chpt. 41
265.197(a)	261.3(d)	4100.16
265.198(a)(1)(i)	261.21 261.23	4108.4, 4108.5 4108.8, 4108.9
265.201(d) Note	261.3(c),(d)	4100.15, 4100.16
265.201(e)(1)(i)	261.21 261.23	4108.4, 4108.5 4108.8, 4108.9
265.221(d)(1)	261.24	4108.10, 4108.11
265.228(a)(1)	261.3(d)	4100.16

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.229(a)(1)	261.21 261.23	4108.4, 4108.5 4108.8, 4108.9
265.256(a)(1)	261.21 261.23	4108.4, 4108.5 4108.8, 4108.9
265.258(a)	261.3(d)	4100.16
265.273(a)	261.24, Table 1	4108.11, Table 3
265.273(b)	Part 261, subpart D	4109, 4110,4112.1(a)-(c) App. I & II to Chpt. 41
265.273 (c) Comment	Part 261	Chpt. 41
265.281(a)(1)	261.23	4108.8, 4108.9
265.301(d)(1)	261.4	4101.1-4101.9
265.312(a)(1)	261.21 261.23	4108.4, 4108.5 4108.8, 4108.9
265.316(e)	261.23(a)(5)	4108.8(e)
265.340(b)	Part 261, App. VIII	App. II to Chpt. 41
265.340(b)(1)	Part 261, subpart D	4109, 4110,4112.1(a)-(c) App. I & II to Chpt. 41
265.340(b)(2)	Part 261, subpart D 261.23(a)(4) & (5)	4109, 4110,4112.1(a)-(c) App. I & II to Chpt. 41, 4108.8(d), 4108.8(e)
265.340(b)(3)	Part 261, subpart C	4108.1-4108.11, Table 3
265.340(b)(4)	261.23(a)(1), (2),(3),(6),(7), (8)	4108.8(a)-(c),4108.8(f)-(h)
265.351 Comment	261.3(d)	4100.16
265.381 Comment	261.3(c),(d)	4100.15, 4100.16
265.404 Comment	261.3(c),(d)	4100.15, 4100.16
265.405(a)(1)	261.21, 261.23	4108.4, 4108.5 4108.8, 4108.9
265.1030(b)(3) Note	261.6(c)(1) 261.4	4103.5 4101.1-4101.9
265.1050(e) Note	261.6(c)(1) 261.4	4103.5 4101.1-4101.9
265.1081 "point of waste origination" (1)	Part 261	Chpt. 41
265.1087(c)(3)(ii)(A)	261.7(b)	4104.3-4104.5
265.1087(c)(3)(ii)(B)	261.7(b)	4104.3-4104.5

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.1087(c)(4)(i)	261.7(b)	4104.3-4104.5
265.1087(d)(3)(ii)(A)	261.7(b)	4104.3-4104.5
265.1087(d)(3)(ii)(B)	261.7(b)	4104.3-4104.5
265.1087(d)(4)(i)	261.7(b)	4104.3-4104.5
265.1102(a)	261.3(d)	4100.16
265.1202(a)	261.3(d)	4100.16
Appendix I to Part 265 (1)	Part 261 Part 261, subpart D Part 261, subpart C	Chpt. 41 4109, 4110, 4112.1, App. I & II 4108.1-4108.11, Table 3
265.1(c)(7)	262.34	4202.6-4202.8
265.1(c)(8)	262.70	4206.1
265.1(c)(12)	262.30	4202.1
265.12(a)(2)	Part 262, subpart H	4207.1-4207.6, 4207.8-4207.33, 5400.1, 4208, 4209.1
265.56(g) Comment	Part 262	Chpt. 42
265.71(b)(4) Comment	262.23(c)	4201.13
265.71(c)	Part 262	Chpt. 42
265.71(c) Comment	262.34	4202.6-4202.8
265.71(d)	Part 262, subpart H	4207.1-4207.6, 4207.8-4207.33, 5400.1, 4208, 4209.1
265.114	Part 262	Chpt. 42
265.193(c)(4) Note	Parts 262-265	Chpts. 42-44
265.193(e)(2)(v)(A)	262.21	4201.6-4201.7
265.193(e)(2)(v)(B)	262.21	4201.6 - 4201.7
265.201(d) Note	Part 262	Chpt. 42
265.351 Comment	Parts 262-266	Chpts. 42-44
265.381 Comment	Part 262	Chpt. 42
265.404 Comment	Part 262	Chpt. 42
265.1030(b)(2)	262.34(a)	4202.6-4202.7
265.1030(b)(3)	262.34(a)	4202.6-4202.7
265.1050(b)(2) & (3)	262.34(a)	4202.6-4202.7
265.56(g) Comment	Part 263	Chpt. 43
265.201(d) Note	Part 263	Chpt. 43

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.76	263.20(e)(2)	4301.5(b)
265.381 Comment	Part 263	Chpt. 43
265.404 Comment	Part 263	Chpt. 43
265.1(b)	264.553 264.552	4421.10-4421.16 4421.1-4421.9
265.1(c)(3) Comment	Part 264	Chpt. 44
265.1(d)(1)(iii)	264.250(c)	4417.3
265.19(c)(1)(iii)	264.221 264.251 264.301	4400.3, 4018 4417.4-4417.20 4400.3, 4018
265.19(c)(2)	264.221(c)(1) 264.251(c)(1) 264.301(c)(1) 264.254(c)(1)	4400.3, 4018 4417.7-4417.8 4400.3, 4018 4417.29
265.111(c)	264.1102	4486.1, 4486.2
265.112(d)(4)	264.1102	4486.1, 4486.2
265.140(b)(2)	264.197	4416.33-4416.35
265.143(a)(2)	264.151(a)(1) 264.151(a)(2)	4414.20(a) 4414.20(a)
265.143(b)(2)	264.151(b)	4414.20(b)
265.143(b)(3)(ii)(B)	264.151(a)	4414.20(a)
265.143(c)(2)	264.151(d)	4414.20(d)
265.143(c)(3)(ii)(B)	264.151(a)	4414.20(a)
265.143(d)(2)	264.151(e)	4414.20(e)
265.143(e)(2)	264.151(f)	4414.20(f)
265.143(e)(3)(i)	264.151(f)	4414.20(f)
265.143(e)(10)	264.151(h)	4414.21 & 4414.22
265.145(a)(2)	264.151(a)(1) & (a)(2)	4414.20(a)
265.145(b)(2)	264.151(b)	4414.20(b)
265.145(b)(3)(ii)(B)	264.151(a)	4414.20(a)
265.145(c)(2)	264.151(d)	4414.20(d)
265.145(c)(3)(ii)(B)	264.151(a)	4414.20(a)
265.145(d)(2)	264.151(e)	4414.20(e)
265.145(e)(2)	264.151(f)	4414.20(f)
265.145(e)(3)(i)	264.151(f)	4414.20(f)
265.145(e)(11)	264.151(h)	4414.21, 4414.22

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.147(a)(1)(i)	264.151(i) & (j)	4414.23, 4414.24
265.147(f)(3)(i)	264.151(g) 264.143(f) 264.145(f) 264.151(f)	4414.20(g) 4414.10(f) 4414.15(f) 4414.20(f)
265.147(g)(1)	264.151(h)(2)	4414.22
265.147(g)(2)(i)	264.151(h)(2)	4414.22
265.147(g)(2)(ii)	264.151(h)(2)	4414.22
265.147(h)(3)	264.151(k)	4414.25
265.147(h)(5)	264.151(n)	4414.29, 4414.30
265.147(h)(5)(i)(3)	264.151(l)	4414.26
265.147(h)(5)(i)(4)	264.151(l)	4414.26
265.147(j)(4)	264.151(m)	4414.27, 4414.28
265.148(a)	264.151(h)	4414.21, 4414.22
265.221(a)	264.221(c), (d), (e), (f)	4400.3, 4018
265.254	264.251(c), (d), (e), (f)	4417.6, 4417.13, 4417.14, 4417.15
265.281(a)(2)	264.17(b)	4406.2
265.301(a)	264.301(d), (e), (f)	4400.3, 4018
265.310(b)(2)	264.301(c)(3)(iv) & (4)	4400.3, 4018
265.314(a)(1)	264.301(a)	4400.3, 4018
265.352(a)	Part 264, subpart O	4400.3, 4018
265.352(b)(1)	Part 264, subpart O	4400.3, 4018
265.352(b)(2)	Part 264, subpart O	4400.3, 4018
265.383(a)	Part 264, subpart O	4400.3, 4018
265.383(b)(1)	Part 264, subpart O	4400.3, 4018
265.383(b)(2)	Part 264, subpart O	4400.3, 4018
265.1031	264.1031	4428.5, 5400.1
265.1033(m)(1)(i)	Part 264, subpart X,	4425.1-4425.4

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.1033(m)(1)(ii)	Part 264	Chpt. 44
265.1033(m)(2)(i)	Part 264, subpart O	4400.3, 4018
265.1051	264.1031	4428.5, 5400.1
265.1080(b)(8)	264.1031	4428.5, 5400.1
265.1080(c)(1)	Part 264, subpart CC	4474-4483, 4400.3, 4018, 5400.1
265.1083(c)(2)(vii)(A)	Part 264, subpart O,	4400.3, 4018
265.1090(a)	264.1084-264.1087 264.1084(d)	4477-4479, 4400.3, 4018 4477.4
265.1202(b)	264.310	4400.3, 4018
265.1(c)(6)	Part 266, subpart C subpart D subpart F subpart G	4502, removed & reserved 4505 4506
265.1(f)	266.205 266.202	4512.9 4512.3-4512.6
265.70	266.203(a)	4512.7(a)
265.370	Part 266, subpart H	4507.1-4507.6
265.1033(m)(3)(i)	Part 266, subpart H	4507.1-4507.6
265.1033(m)(3)(ii)	Part 266, subpart H	4507.1 - 4507.6
265.1051	Parts 260-266	Chpts. 40-45
265.1083(c)(2)(viii)(A)	Part 266, subpart H	4507.1-4507.6
265.1083(c)(2)(viii)(B)	Part 266, subpart H	4507.1-4507.6
265.1088(c)(5)(i)(D)	Part 266, subpart H	4507.1-4507.6
265.1088(c)(5)(i)(E)	Part 266, subpart H	4507.1-4507.6
265.1200	266.205	4512.9
265.1(c)(10)	268.40	5003.1-5003.9
265.1(e)	Part 268	Chpt. 50
265.13(a)(1)	Part 268	Chpt. 50
265.13(a)(2) Comment	268.7(b) & (c)	5000.15(a), 5000.16

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.13(b)(6)	268.7	5000.14-5000.17
265.13(b)(7)	268.4(a)	5000.11
265.13(b)(7)(iii)(A)	part 268, subpart D	5003.1-5003.7, 5003.9-5003.13
265.13(b)(7)(iii)(B)(1)	268.32	Removed & Reserved
265.13(b)(7)(iii)(B)(2)	268.33(f)	Removed & Reserved
265.73(b)(3)	268.4(a) 268.7	5000.11 5000.14-5000.17
265.73(b)(8)	268.5 268.6 268.8 268.7(a)	5000.12 5000.13 No analog 5000.14(a)
265.73(b)(9)	268.7 268.8	5000.14-5000.17 No analog
265.73(b)(10)	268.7 268.8	5000.14-5000.17 No analog
265.73(b)(11)	268.7 268.8	5000.14-5000.17 No analog
265.73(b)(12)	268.7 268.8	5000.14-5000.17 No analog
265.73(b)(13)	268.7 268.8	5000.14-5000.17 No analog
265.73(b)(14)	268.8 268.7	No analog 5000.14-5000.17
265.221(h)	Part 268 268.5	Chpt. 50 5000.12
265.229	Part 268	Chpt. 50
265.256(a)	Part 268	Chpt. 50
265.281	Part 268	Chpt. 50
265.312(a)	Part 268	Chpt. 50
265.312(b)	Part 268, subpart D	5003.1-5003.7, 5003.9-5003.13
265.316(f)	Part 268 268.42(c)(1)	Chpt. 50 5003.10(d)(1)
265.1083(c)(4)(i)	Part 268 268.40	Chpt. 50 5003.1-5003.9
265.1083(c)(4)(ii)	268.42(a) 268.42(b)	5003.10(a) 5003.10(c)
265.1(b)	270.10 270.10(e) & (g)	4601.1-4601.18 4601.5-4601.9 & 4601.12-4601.13

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.1(b) Comment	Part 270	Chpt. 46
265.12(b)	270.72 Part 270	4620.6-4620.7 Chpt. 46
265.112(c)(3)	270.42	4617.7-4617.15, App. I
265.112(c)(4)	270.42	4617.7-4617.15, App. I
265.118(d)(3)	270.42	4617.7-4617.15, App. I
265.118(d)(4)	270.42	4617.7-4617.15, App. I
265.147(c)	270.41(a)(5)	4617.4(e)
265.147(d)	270.41(a)(5)	4617.4(e)
265.191(a)	270.11(d)	4601.22
265.191(b)(5)(ii)	270.11(d)	4601.22
265.192(a)	270.11(d)	4601.22
265.192(g)	270.11(d)	4601.22
265.196(f)	270.11(d)	4601.22
265.352(b)(1)	270.19 270.62	4018, 4400.3
265.383(b)(1)	270.19 270.62	4018, 4400.3
265.1030(b)(1)	Part 270	Chpt. 46
265.1030(b)(2)	Part 270	Chpt. 46
265.1033(m)(1)(i)	Part 270	Chpt. 46
265.1033(m)(2)(i)	Part 270	Chpt. 46
265.1033(m)(3)(i)	Part 270	Chpt. 46
265.1050(b)(1)	Part 270	Chpt. 46
265.1050(b)(2)	Part 270	Chpt. 46
265.1080(c)(1)	270.50(d)	4618.4
265.1080(c)(2)	270.50(d)	4618.4
265.1083(c)(2)(vii)(A)	Part 270	Chpt. 46
265.1083(c)(2)(viii)(A)	Part 270	Chpt. 46
265.1088(c)(5)(i)(D)	Part 270	Chpt. 46
265.1(c)(14)	Part 273	Chpt. 48
265.1(c)(14)(i)	273.2	4800.3-4800.7
265.1(c)(14)(ii)	273.3	4800.8-4800.12
265.1(c)(14)(iii)	273.4	4800.13-4800.16

40 CFR 265 Provision Containing Reference	40 CFR Provision Referenced	District of Columbia Analog to the Referenced 40 CFR Provision
265.1(c)(6)	Part 279	Chpts. 54 & 49
265.1(b) Comment	Part 124	Chpt. 47
265.1(c)(11)(iii)	Part 124	Chpt. 47
265.147(c)	124.5	4702.1(a)
265.147(d)	124.5	4702.1(a)
265.1080(c)(1)	124.15	4705
265.1080(c)(2)	124.15	4705