Delaware Regulations Governing Hazardous Waste, July 28, 1983

Part 2 of 3

Part 264 – Standards for Owners and Operators of
Hazardous Waste Treatment, Storage and Disposal Facilities

PART 264-STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

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Subpart A - General

§264.1 Purpose, scope and applicability.

(a) The purpose of this part is to establish minimum standards which define the acceptable management of hazardous waste.

(b) The standards in this part apply to owners and operators of all facilities which treat, store, or dispose of hazardous waste, except as specifically provided otherwise in this part or Part 261 of these Regulations.

(c) The requirements of this part 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 permit by rule granted to such a person under §122.60(a) of these regulations.

(d) The underground injection of hazardous waste is banned in the State of Delaware.

(e) The requirements of this part apply to the owner or operator of a POTW which treats, stores, or disposes of hazardous waste only to the extent they are included in a permit by rule granted to such a person under §122.60(c) of these regulations.

(f) The requirements of this part do not apply to:

(1) The owner or operator of a facility permitted, licensed, or registered by the State 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 part by §261.5 of these Regulations;

(2) The owner or operator of a facility which treats or stores hazardous waste, which treatment or storage meets the criteria in §261.6(a) of these Regulations, except to the extent that §261.6(b) of these Regulations provides otherwise;

(3) A generator accumulating waste on-site in compliance with §262.34 of these Regulations.

(4) A farmer disposing of waste pesticides from his own use in compliance with §262.51 of these Regulations; or

(5) The owner or operator of a totally enclosed treatment facility as defined in §260.10.

(6) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in §260.10 of these regulations.

(7) [Reserved]

(8)(i) Except as provided in paragraph (g)(8)(ii) of this Section, a person engaged in treatment or containment activities during immediate response to any of the following situations:

(A) A discharge of a hazardous waste;

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

(C) A discharge of a material which, when discharged, becomes a hazardous waste.

(ii) An owner or operator of a facility otherwise regulated by this Part must comply with all applicable requirements of Subparts C and D

(iii) Any person who is covered by paragraph (g)(8)(i) of this Section 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 Part and Parts 122-124 of these Regulations for those activities.

(9) A transporter storing manifested shipments of hazardous waste in containers meeting the requirements of §262.30 at a transfer facility for a period of ten days or less.

(10) The addition of absorbent material to waste in a container (as defined in §260.10 of this chapter) 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 §§264.17(b), 264.171, and 264.172 are complied with.

§264.2 [Reserved]

§264.3 Relationship to interim status standards.

A facility owner or operator who has fully complied with the requirements for interim status - as defined in 7 Del C. Section 6307(g) - must comply with the regulations specified in Part 265 of these Regulations in lieu of the regulations in this Part, until final administrative disposition of his permit application is made.

[Comment: As stated in 7 Del C. §6307(g), after the effective date of regulations under that section, i.e., Parts 122 and 124 of these Regulations, the treatment, storage, or disposal of hazardous waste is prohibited except in accordance with a permit. 7 Del C. §6307(g) provides for the continued operation of an existing facility which meets certain conditions until final administrative disposition of the owner's or operator's permit application is made.]

§264.4 Imminent hazard action.

Notwithstanding any other provisions of these regulations, enforcement actions may be brought pursuant to Section 7 Del. C. §6308.

Subpart B - General Facility Standards

§264.10 Applicability.

(a) The regulations in this Subpart apply to owners and operators of all hazardous waste facilities, except as provided in §264.1 and in paragraph (b) of this Section.

(b) Section 264.18(b) applies only to facilities subject to regulation under Subjects I through O of this part.

§264.11 Identification number.

Every facility owner or operator must apply to the state for an EPA identification number in accordance with the State notification procedures.

§264.12 Required notices.

(a) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source must notify the Secretary in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.

(b) The owner or operator of a facility that receives hazardous waste from an off-site source (except where the owner or operator is also the generator) must inform the generator in writing that he has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator must keep a copy of this written notice as part of the operating record.

(c) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of this part and Part 122 of these Regulations.

[Comment: An owner's or operator's failure to notify the new owner or operator of the requirements of this part in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.]

§264.13 General waste analysis.

(a)(1) Before an owner or operator treats, stores, or disposes of any hazardous waste, he must obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of this part or with the conditions of a permit issued under Part 122, Subparts A and B, and Part 124 of these Regulations.

(2) The analysis may include data developed under Part 261 of these Regulations, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

[Comment: For example, the facility's records of analyses performed on the waste before the effective date of these regulations, or studies conducted on hazardous waste generated from processes similar to that which generated the waste to be managed at the facility, may be included in the data base required to comply with paragraph (a)(1) of this section. The owner or operator of an off-site facility may arrange for the generator of the hazardous waste to supply part or all of the information required by paragraph (a)(1) of this section. If the generator does not supply the information, and the owner or operator chooses to accept a hazardous waste, the owner or operator is responsible for obtaining the information required to comply with this section.]

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

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

(ii) For off-site facilities, when the results of the inspection required in paragraph (a)(4) of this section indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

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

(b) The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with paragraph (a) of this section. He must keep this plan at the facility. At a minimum, the plan must specify:

(1) The parameters for which each hazardous waste will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with paragraph (a) of this section);

(2) The test methods which will be used to test for these parameters;

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

(i) One of the sampling methods described in Appendix I of Part 261 of these Regulations; or

(ii) An equivalent sampling method.

[Comment: See §260.21 of these Regulations for related discussion.]

(4) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date; and

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

(6) Where applicable, the methods which will be used to meet the additional waste analysis requirements for specific waste management methods as specified in §§264.17 and 264.341.

(c) For off-site facilities, the waste analysis plan required in paragraph (b) of this Section must also specify the procedures which will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe:

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

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

[Comment: Part 122, Subpart B, of these Regulations requires that the waste analysis plan be submitted with Part B of the permit application.]

§264.14 Security.

(a) The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of his facility, unless he can demonstrate to the Secretary that:

(1) Physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility; and

(2) 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 part.

[Comment: Part 122, Subpart B, of these Regulations requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

(b) Unless the owner or operator has made a successful demonstration under paragraphs (a)(1) and (a)(2) of this section, facility must have:

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

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

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

[Comment: The requirements of paragraph (b) of this section are satisfied if the facility or plant within which the active portion is located itself has a surveillance system, or a barrier and a means to control entry, which complies with the requirements of paragraph (b)(1) or (b)(2) of this section.]

(c) Unless the owner or operator has made a successful demonstration under paragraphs (a)(1) and (a)(2) of this section, a sign with legend, "Danger - Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend must be written in English and in any other language predominant in the area surrounding the facility (e.g., facilities in counties bordering the Canadian province of Quebec must post signs in French; facilities in counties bordering Mexico must post signs in Spanish), and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger - Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

[Comment: See §264.117(b) for discussion of security requirements at disposal facilities during the post-closure care period.]

§264.15 General inspection requirements.

(a) The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing - or may lead to - (1) release of hazardous waste constituents to the environment or (2) a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

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

(2) He must keep this schedule at the facility.

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

(4) The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration or malfunction of any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies called for in §§264.174, 264,194, 264.226, 264.253, 264.254, 264.303, and 264.347, where applicable.

[Comment: Part 122, Subpart B, of these Regulations requires the inspection schedule to be submitted with Part B of the permit application. DNREC will evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, DNREC may modify or amend the schedule as may be necessary.]

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

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

§264.16 Personnel training.

(a)(1) Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part. The owner or operator must ensure that this program includes all the elements described in the document required under paragraph (d)(3) of this section.

[Comment: Part 122, Subpart B, of these Regulations requires that owners and operators submit with Part B of the permit application, an outline of the training program used (or to be used) at the facility and a brief description of how the training program is designed to meet actual job tasks.]

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

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

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

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

(iii) Communications or alarm systems;

(iv) Response to fires or explosions;

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

(vi) Shutdown of operations.

(b) Facility personnel must success fully complete the program required in paragraph (a) of this section within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of paragraph (a) of this section.

(c) Facility personnel must take part in an annual review of the initial training required in paragraph (a) of this section.

(d) The owner or operator must main tain the following documents and records at the facility:

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

(2) A written job description for each position listed under paragraph (d)(1) of this section. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;

(3) 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 paragraph (d)(1) of this section;

(4) Records that document that the training or job experience required under paragraphs (a), (b), and (c) of this section has been given to, and completed by, facility personnel.

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

§264.17 General requirements for ignitable, reactive, or incompatible wastes

(a) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(b) Where specifically required by other Sections of the Part, the owner or operator of a facility that treats, stores, or disposes ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, must take precautions to prevent reactions which:

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

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

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

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

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

(c) When required to comply with paragraph (a) or (b) of this section, the owner or operator must document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in §264.13), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

§264.18 Location standards.

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

(2) As used in paragraph (a)(1) of this section:

(i) "Fault" means a fracture along which rocks on one side have been displaced with respect to those on the other side.

Note: The definition of a wetland can be found in the DNREC Wetland Regulations of 1976 which were adopted under Title 7, Del Code, Chapter 66, Section 6607.

Subpart C - Preparedness and Prevention

§264.30 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as §264.1 provides otherwise.

§264.31 Design and operation of facility.

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

§264.32 Required equipment.

All facilities must be equipped with the following, unless it can be demonstrated to the Secretary 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 State 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 auto matic sprinklers, or water spray systems.

[Comment: Part 122, Subpart B, of these Regulations requires that an owner or operator who wishes to make the demon stration referred to above must do so with Part B of the permit application.]

§264.33 Testing and maintenance of equipment.

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

§264.34 Access to communications or alarm system.

(a) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless the Secretary has ruled that such a device is not required under §264.32.

(b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless the Secretary has ruled that such a device is not required under §264.32.

(ii) "Displacement" means the relative movement of any two sides of a fault measured in any direction.

(iii) "Holocene" means the most recent epoch of the Quarternary period, extending from the end of the Pleistocene to the present.

[Comment: Procedures for demonstrating compliance with this standard in Part B of the permit application are specified in §122.25(a)(11). Facilities which are located in political jurisdictions other than those listed in Appendix VI of this Part, are assumed to be in compliance with this requirement.]

(b) Floodplains. (1) A facility located in a 100-year floodplain must be designed, constructed, operated, and maintained to prevent washout or any hazardous waste by a 100-year flood, unless the owner or operator can demonstrate to the Secretary's satisfaction that:

(i) Procedures are in effect which will cause the waste to be removed safely, before flood waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters; or

(ii) For existing surface impoundments, waste piles, land treatment units, and landfills, 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 such 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 100-year floodplain that could result from washout.

[Comment: The location where wastes are moved must be a facility which is either permitted byDNREC under Part 122 of these Regulations, authorized to manage hazardous waste by a State with a hazardous waste management program authorized under Part 123 of these Regulations, or in interim status under Parts 122 and 265 of these Regulations.]

(2) As used in paragraph (b)(1) of this Section:

(i) "100-year floodplain" means any land area which is subject to a one percent or greater chance of flooding in any given year from any source.

(ii) "Washout" means movement of hazardous waste from active portion of the facility as a result of flooding.

(iii) "100-year flood" means a flood that has a one percent chance of being equalled or exeeded in any given year.

[Comment: (1) Requirements pertaining to other Federal laws which affect the location and permitting of facilities are found in §122.12 of these Regulations. For details relative to these laws, see DNREC's manual for SEA (special environmental area) requirements for hazardous waste facility permits. Through DNREC is responsible for complying with these requirements, applicants are advised to consider them in planning the location of a facility to help prevent subsequent project delays.]

(c) A new facility is prohibited from locating within a 100-year floodplain or 100 feet from a wetland which ever distance is greater.

incorporated into the soil surface; such facilities are disposal facilities if the waste will remain after closure.

"Leachate" means any liquid, including any suspended components in the liquid, that has percolated through or drained from hazardous waste.

"Liner" means a continuous layer of natural or man-made materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, which restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

"Management" or "hazardous waste management" means the systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste.

"Manifest"-means the shipping document DNREC form 8700-22, and if necessary, DNREC form 8700-22A, originated and signed by the generator in accordance with the instructions included in Part 262, Subpart B, Appendix II of these Regulations.

"Manifest document number"-means the EPA identification number assigned to the generator plus a 5 digit sequentially increasing number assigned to the manifest by the generator for recording and reporting purposes.

"Mining overburden returned to the mine site" means any material overlying an economic mineral deposit which is removed to gain access to that deposit and is then used for reclamation of a surface mine.

"Movement" means that hazardous waste transported to a facility in an individual vehicle.

"New hazardous waste management facility" or "new facility" means a facility which began operation, or for which construction commenced after November 19, 1980. (See also "Existing hazardous waste management facility.)

"On-site" means the same or geographically contiguous property which may be divided by public or private right-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing as opposed to going along, the right-of-way. Non-contiguous properties owned by the same person but connected by a right-of-way which he controls and to which the public does not have access, is also considered on-site property.

"Open burning" means the combus tion of any material without the following characteristics:

(1) Control of combustion air to maintain adequate temperature for efficient combustion.

(2) Containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and

(3) Control of emission of the gaseous combustion products. (See also "incineration" and "thermal treatment".)

"Operator" means the person responsible for the overall operation of a facility.

"Owner" means the person who owns a facility or part of a facility.

"Partial closure" means the closure of a discrete part of a facility in accordance with the applicable closure requirements of Parts 264 or 265 of these Regulations. For example, partial closure may include the closure of a trench, a unit operation, a landfill cell, or a pit, while other parts of the same facility continue in operation or will be placed in operation in the future.

"Person" means an individual, trust, firm, joint stock company, Federal Agency, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body.

"Personnel" or "facility personnel" means all persons who work

at or oversee the operations of a hazardous waste facility, and whose actions or failure to act may result in noncompliance with the requirements of Parts 264 or 265 of these Regulations.

"Pile" means any noncontainerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage.

"Point source" means any discernible, confined, and discrete conveyance, including, but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture.

"Publicly owned treatment works" or "POTW" means any device or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality" (as defined by Section 502(4) of the CWA). This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

"Qualified Engineer" or "Qualified Geologist" shall mean that the responsible professional geologist or engineer is qualified by training and experience to gather and evaluate the data required by these regulations.

"Regional Administrator" means the Regional Administrator for the EPA Region in which the facility is located, or his designee.

"Representative sample" means a sample of a universe or whole (e.g., waste pile, lagoon, ground water) which can be expected to exhibit the average properties of the universe or whole.

"Run-off" means any rainwater leachate, or other liquid that drains over land from any part of a facility.

"Run-on" means any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

"Saturated zone" or "zone of saturation" means that part of the earth's crust in which all voids are filled with water.

"Secretary" means the Secretary of the Department of Natural Resources and Environmental Control, or his duly authorized designee.

"Sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

"Solid waste" means a solid waste as defined in §261.2 of these Regulations.

"State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

"Storage" means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

"Surface impoundment" or "impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

"Tank" means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

"Thermal treatment" means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical, or

§264.35 Required aisle space.

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

[Comment: Part 122, Subpart B, of these Regulations requires that an owner or operator who wishes to make the demonstration referred to above must do so with Part B of the permit application.]

§264.36 [Reserved]

§264.37 Arrangements with local authorities.

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

(1) 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;

(2) 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 other to provide support to the primary emergency authority;

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

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

(b) Where State or local authorities decline to enter into such arrangements, the owner or operator must document the refusal in the operating record.

Subpart D - Contingency Plan and Emergency Procedures

§264.50 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities, except as §264.1 provides otherwise.

§264.51 Purpose and implementation of contingency plan.

(a) Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(b) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste contituents which could threaten human health or the environment.

§264.52 Content of contingency plan.

(a) The contingency plan must describe the actions facility personnel must take to comply with §§264.51 and 264.56 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.

(b) The plan must describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency services, pursuant to §264.37.

(c) The plan must list names, addresses, and telephone numbers (office and home) of all persons qualified to act as emergency coordinator (see §264.55), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the Secretary at the time of certification, rather than at the time of permit application.

(d) The plan must include a list of all emergency equipment at the facility such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment, where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(e) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

§264.53 Copies of contingency plan.

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

(a) Maintained at the facility; and

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

[Comment: The contingency plan must be submitted to the Secretary with Part B of the permit application under Part 122, Subparts A and B, of these Regulations and, after modification or approval, will become a condition of any permit issued.]

§264.54 Amendment of contingency plan.

The contingency plan must 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 - in its design, construction, operation, maintenance, or other circumstances - in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

[Comment: A change in the lists of facility emergency coordinators or equipment in the contingency plan constitutes a minor modification to the facility permit to which the plan is a condition.]

§264.55 Emergency coordinator.

At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

[Comment: The emergency coordinator's responsibilities are more fully spelled out in §264.56. Applicable responsibilities for the emergency coordinator vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.]

§264.56 Emergency procedures.

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

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

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

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

(c) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which would threaten human health, or the environment, outside the facility, he must report his findings as follows:

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

(2) He must immediately notify the government official designated as the on-scene coordinator, in the contingency plan and the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:

(i) Name and telephone number of notifier;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

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

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

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

(e) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

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

(g) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

[Comment: Unless the owner or operator can demonstrate, in accordance with §261.3(c) or (d) of these Regulations, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262, 263, and 264 of these Regulations.]

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

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

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

(i) The owner or operator must notify the Secretary, and appropriate State and local authorities, that the facility is in compliance with paragraph (h) of this section before operations are resumed in the affected area(s) of the facility.

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

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

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

(3) Date, time, and type of incident (e.g., fire, explosion);

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

(5) The extent of injuries, if any;

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

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

Subpart E - Manifest System, Recordkeeping, and Reporting

§264.70 Applicability.

The regulations in this subpart apply to owners and operators of both on-site and off-site facilities, except as §264.1 provides otherwise. Sections 264.71, 264.72, and 264.76 do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

§264.71 Use of manifest system.

(a) If a facility receives hazardous waste accomplanied by a manifest, the owner or operator, or his agent, must:

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

(2) Note any significant discrepancies in the manifest [as defined in §264.72(a)] on each copy of the manifest;

[Comment: The Department does not intend that the owner or operator of a facility whose procedures under §264.13(c) include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Section 264.72(b), however, requires reporting an unreconciled discrepancy discovered during later analysis.]

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

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

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

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

(1) 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;

(2) Note any significant discrepancies (as defined in §264.72(a) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper.

[Comment: The Department does not intend that the owner or operator of a facility whose procedures under §264.13(c) include waste analysis must perform that analysis before signing the manifest and giving it to the transporter. Section 264.72(b), however, requires reporting an unreconciled discrepancy discovered during later analysis.]

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

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

[Comment: Section 262.23(c) of these regulations requires the generator to send three copies of the manifest to the facility when hazardous waste is sent by rail or water (bulk shipment).]

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

(c) Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the require ments of Part 262 of these Regulations.

[Comment: The provisions of §262.34 are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of 262.34 only apply to owners or operators who are shipping hazardous waste which they generated at that facility.]

§264.72 Manifest discrepancies.

(a) 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: (1) For bulk waste, variations greater than 10 percent in weight, and (2) 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 which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constitutents not reported on the manifest or shipping paper.

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

§264.73 Operating record.

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

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

(1) 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;

(2) The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this informatin must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest;

[Comment: See §264.119 for related requirements.]

(3) Records and results of waste analyses performed as specified in §§264.13, 264.17, and 264.341;

(4) Summary reports and details of all incidents that require implementing the contingency plan as specified in §264.56(j);

(5) Records and results of inspections as required by §264.15(d) (expect these data need be kept only three years);

(6) Monitoring, testing, or analytical data where required by Subpart F and §§264.226, 264.253, 264.254, 264.276, 264.278, 264.280, 264.303, 264.309 and 264.347.

(7) For off-site facilities, notices to generators as specified in §264.12(b); and

(8) All closure cost estimates under §264.142, and for disposal facilities, all post-closure cost estimates under §264.144.

§264.74 Availability, retention, and disposition of records.

(a) All records, including plans, required under this part must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of DNREC who is duly designated by the Secretary.

(b) The retention period for all records required under this Part is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Secretary.

(c) A copy of records of waste disposal locations and quantities under §264.73(b)(2) must be submitted to the Secretary and local land authority upon closure of the facility.

§264.75 Annual report.

The owner or operator must prepare and submit a single copy of an annual report to the Secretary by March 1 of each year. The report form in Appendix II must be used for this report. The annual report must cover facility activities during the previous calendar year and must 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 must 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 must 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 §264.142, and for disposal facilities, the most recent post-closure cost estimate under §264.144; and

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

§264.76 Unmanifested waste report.

If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described in §263.20(e)(2) of these Regulations, and if the waste is not excluded from the manifest requirement by §261.5 of these Regulations, then the owner or operator must prepare and submit a single copy of a report to the Secretary within 15 days after receiving the waste. The report form and instructions in Appendix II must be used for this report. The report must 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 authorized representative; and

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

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

§264.77 Additional reports.

In addition to submitting the annual report and unmanifested waste reports described in §264.75 and 264.76, the owner or operator must also report to the Secretary:

(a) Releases, fires, and explosions as specified in §264.56(j);

(b) Facility closure as specified in §264.115.

(c) As otherwise required by Subparts F and K-N.

(d) Ground water contamination and monitoring data as specified in §265.93 and §265.94.

Subpart F - Ground-water Protection

Note: In this Subpart, "at least the uppermost aquifer" means any aquifer which the facility has the potential to affect.

§264.90 Applicability.

(a) Except as provided in paragraph (b) of this section, the regulations in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land treatment units, or landfills. The owner or operator must satisfy the requirements of this subpart for all wastes (or constituents thereof) contained in any such waste management unit at the facility that receives hazardous waste after the effective date of this subpart (hereinafter referred to as a "regulated unit"). Any waste or waste constituent migrating beyond the waste management area under §264.95(b) is assumed to originate from a regulated unit unless the Secretary finds that such waste or waste constituent originated from another source.

(b) The owner or operator is not subject to regulation under this subpart if:

(1) He is exempted under §264.1:

(2) He designs and operates a pile in compliance with §264.250(c) or a landfill in compliance with §264.302.

(3) The Secretary finds, pursuant to §264.280(d), that the treatment zone of a land treatment unit does not contain levels of hazardous constituents that are above background levels of those constituents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of §264.278 has not shown a statistically significant increase in hazardous constituents below the treatment zone during the operating life of the unit. An exemption under this paragraph can only relieve an owner or operator of responsibility to meet the requirements of this subpart during the post-closure care period; or

(4) The Secretary finds that there is no potential for migration of liquid from a regulated unit to at least the uppermost aquifer during the active life of the regulated unit (including the closure period) and the post-closure care period specified under §264.117. This demonstration must be certified by a qualified geologist or qualified geotechnical engineer. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator must base any predictions made under this paragraph on assumptions that maximize the rate of liquid migration.

(c) The regulations under this subpart apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in this subpart:

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

(2) Apply during the post-closure care period under §264.117 if the owner or operator is conducting a detection monitoring program under §264.98; or

(3) Apply during the compliance period under §264.96 if the owner or operator is conducting a compliance monitoring program under §264.99 or a corrective action program under §264.100.

§264.91 Required programs.

(a) Owners and operators subject to this subpart must conduct a ground-water monitoring and response program as follows:

(1) Whenever hazardous constituents under §264.93 from a regulated unit are detected at the compliance point under §264.95, the owner or operator must institute a compliance monitoring program under §264.99;

(2) Whenever the ground-water protection standard under §264.92 is exceeded, the owner or operator must institute a corrective action program under §264.100;

(3) Whenever hazardous constituents under §264.93 from a regulated unit exceed concentration limits under §264.94 in ground water between the compliance point under §264.95 and the downgradient facility property boundary, the owner or operator must institute a corrective action program under §264.100;

(4) In all other cases, the owner or operator must institute a detection monitoring program under §264.98.

(b) The Secretary will specify in the facility permit the specific elements of the monitoring and response program. The Secretary may include one or more of the programs identified in paragraph (a) of this section in the facility permit as may be necessary to protect human health and the environment and will specify the circumstances under which each of the programs will be required. In deciding whether to require the owner or operator to be prepared to institute a particular program, the Secretary will consider the potential adverse effects on human health and the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.

(c) The owner or operator of a facility which is used to manage hazardous waste must submit to the Department,

a hydrogeologic report, except as paragraph (d) of this section provides otherwise. This report must be certified by a "qualified engineer" or "qualified geologist" except for (c)(1) of this section which must be certified by a "qualified geologist". (See Section 260.10 for definitions of

"qualified engineer" and "qualified geologist"). This report shall include at a minimum the following:

(1) A definition of the geology of the site and the surrounding areas. This shall include:

(i) A description of the various lithologic units including grain size distribution, shape and color to a depth which includes at least the uppermost confined aquifer underlying the site; and

(ii) isopach and structure contour maps and cross-sections showing these various lithostratigraphic units.

(2) A description of the groundwater movement in at least the water table and uppermost confined aquifers underlying the site and the surrounding area including:

(i) the rate and direction of flow, both horizontally and vertically; and

(ii) a potentiometric surface map and cross-section of each aquifer.

(iii) a map showing the difference in hydraulic head between the water table and uppermost confined aquifers.

(3) A description of the hydrologic characteristics of the lithostratigraphic units to a depth which includes at least the uppermost confined aquifers underlying the site and the surrounding area such as, but not limited to, hydraulic conductivity, porosity, aquifer thickness, transmissivity, and storage coefficient.

(4) A description of the chemical quality of the groundwater of the water table and at least the uppermost confined aquifer underlying the site and surrounding area to include the parameters specified in Section 265.92 and any other parameters specified by the Department depending on the composition of the waste; a description of the chemical quality of nearby surface water may be required if deemed necessary by the Department.

(5) A prediction of the potential movement of any contaminants that may enter the groundwater underlying the site and the surrounding area including the rate, extent and direction, both horizontal and vertical migration and the potential impact on groundwater and if applicable on surface water.

(6) An estimate of the amount of leachate which may be generated at the site. This shall be done by using methods described in the following publications: "Hydrologic Simulation on Solid Waste Disposal Sites", U.S. Environmental Protection Agency, Office of Water and Waste Management, SW-868, September 1980; or the "Use of the Water Balance Method for Predicting Leachate Generation from Solid Waste Disposal Sites", U.S. Environmental Protection Agency, Office of Solid Waste Management Program, SW-168, October, 1975; or an equivalent method approved by the Department.

(7) A description of the existing groundwater and, if applicable, surface water monitoring program used to detect and determine any contaminant migration at the site and the surrounding area.

(8) A proposal for future monitoring including additional monitoring wells and if applicable surface water monitoring stations, parameters for analysis and monitoring schedule.

(d) All or part of the groundwater monitoring requirements of this section may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells (domestic,

industrial or agricultural) or to surface water. This demonstration must be in writing, and must be kept at the facility at all times and also must be submitted to and approved by the Department. This demonstration must be certified by a "qualified engineer" or "qualified geologist" except in defining the geology and geologic materials in (d)(1)(ii) and (2)(i) which must be certified by a "qualified geologist".

This demonstration must establish the following:

(1) The potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of:

(i) A water balance of precipitation, evaptranspiration, runoff, and infiltration; and

(ii) Unsaturated zone characteristics (i.e., geology and geologic materials, physical properties, and depth to ground water); and

(2) The potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an evaluation of:

(i) Saturated zone charateristics (i.e., geology and geologic materials, physical properties, and rate of groundwater flow); and

(ii) The proximity of the facility to water supply wells or surface water.

§264.92 Ground-water protection standard.

The owner or operator must comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents under §264.93 entering the ground water from a regulated unit do not exceed the concentration limits under §264.94 in at least the uppermost aquifer underlying the waste management area beyond the point of compliance under §264.95 during the compliance period under §264.96. The Secretary will establish this ground-water protection standard in the facility permit when hazardous constituents have entered the ground water from a regulated unit.

§264.93 Hazardous constituents.

(a) The Secretary will specify in the facility permit the hazardous constituents to which the ground-water protection standard of §264.92 applies. Hazardous constituents are constituents identified in Appendix VIII of Part 261 of these regulations that have been detected in ground water in at least 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 Secretary has excluded them under paragraph (b) of this section.

(b) The Secretary will exclude an Appendix VIII constituent from the list of hazardous constituents specified in the facility permit if he 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 Secretary will consider the following:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(iv) The patterns of rainfall in the region;

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

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

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

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

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

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

(c) In making any determination under paragraph (b) of this section about the use of ground water in the area around the facility, the Secretary will consider any identification of underground sources of drinking water and exempted aquifers made under Part 122 of these regulations.

§264.94 Concentration limits.

(a) The Secretary will specify in the facility permit concentration limits in the ground water for hazardous constituents established under §264.93. The concentration of a hazardous constituent:

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

(2) For any of the constituents listed in Table 1, must not exceed the respective value given in that Table if the background level of the constituent is below the value given in Table 1; or

(3) Must not exceed an alternate limit established by the Secretary under paragraph (b) of this section.

(b) The Secretary will establish an alternate concentration limit for a hazardous constituent if he 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 Secretary will consider the following factors:

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

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(—H/—Cl$, 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

[1] Milligrams per liter.

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

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

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

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

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

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

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

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

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

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

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

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

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

(iv) The patterns of rainfall in the region;

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

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

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

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

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

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

(c) In making any determination under paragraph (b) of this section about the use of ground water in the area around the facility the Secretary will consider any identification of underground sources of drinking water and exempted aquifers made under 122.35 of these regulations.

§264.95 Point of compliance.

(a) The Secretary will specify in the facility permit the point of compliance at which the groundwater protection standard of §264.92 applies and at which monitoring must be conducted. The point of compliance is a vertical zone located at the hydraulically downgradient limit of the waste management area that extends down into at least the uppermost aquifer underlying the regulated units.

(b) The waste management area is the limit projected in the horizontal plane of the area on which waste will be placed during the active life of a regulated unit.

(1) The waste management area includes horizontal space taken up by any liner, dike, or other barrier designed to contain waste in a regulated unit.

(2) If the facility contains more than one active regulated unit, the waste management area is described by an imaginary line circumscribing the several regulated units.

§264.96 Compliance period.

(a) The Secretary will specify in the facility permit the compliance period during which the ground-water protection standard of §264.92 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.)

(b) The compliance period begins when the owner or operator initiates a compliance monitoring program meeting the requirements of §264.99.

(c) If the owner or operator is engaged in a corrective action program at the end of the compliance period specified in paragraph (a) of this section, the compliance period is extended until the owner or operator can demonstrate that the ground-water protection standard of 264.92 has not been exceeded for a period of at least three consecutive years.

§264.97 General ground-water monitoring requirements.

The owner or operator must comply with the following requirements for any ground-water monitoring program developed to satisfy §264.98, 264.99, or 264.100;

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

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

(2) Represent the quality of ground water passing the point of compliance.

(b) 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 at least the uppermost aquifer will enable detection and measurement at the compliance point of hazardous constituents from the regulated units that have entered the ground water in at least the uppermost aquifer.

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

(d) The ground-water monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide a reliable indication of ground-water quality below the waste management area. At a minimum the program must include procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures, lower detection limit of the parameter, and quality control procedure;

(4) Chain of custody control.

(e) The ground-water monitoring program must include sampling and analytical methods that are appropriate for ground-water sampling and that accurately measure hazardous constituents in ground-water samples.

(f) The ground-water monitoring program must include a determination of the ground-water surface elevation prior to each time ground water is sampled.

(g) Where appropriate, the ground-water monitoring program must establish background ground-water quality for each of the hazardous constituents or monitoring parameters or constituents specified in the permit.

(1) In the detection monitoring program under §264.98, background ground-water quality for a monitoring parameter or constituent must be based on data from quarterly sampling of wells upgradient from the waste management area for one year.

(2) In the compliance monitoring program under §264.99, background ground-water quality for a hazardous constituent must be based on data from upgradient wells that:

(i) Is available before the permit is issued;

(ii) Accounts for measurement errors in sampling and analysis; and

(iii) Accounts, to the extent feasible, for seasonal fluctuations in background ground-water quality if such fluctuations are expected to affect the concentration of the hazardous constituent.

(3) Background quality may be based on sampling of wells that are not upgradient from the waste management area where:

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

(ii) Sampling at other wells will provide an indication of background ground-water quality that is as representative or more representative than that provided by the upgradient wells.

(4) In developing the data base used to determine a background value for each parameter or constituent, the owner or operator must take a minimum of one sample from each well and a minimum of four samples from the entire system used to determine background ground-water quality, each time the system is sampled.

(h) The owner or operator must use the following statistical procedure in determing whether background values or concentration limits have been exceeded:

(1) If, in a detection monitoring program, the level of a constituent at the compliance point is to be compared to the constituent's background value and that background value has a sample coefficient of variation less than 1.00,

(i) The owner or operator must take at least four portions from a sample at each well at the compliance point and determine whether the difference between the mean of the constituent at each well (using all portions taken) and the background value for the constituent is significant at the 0.05 level using the Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Appendix IV of this part. If the test indicates that the difference is significant, the owner or operator must repeat the same procedure (with at least the same number of portions as used in the first test) with a fresh sample from the monitoring well. If this second round of analyses indicates that the difference is significant, the owner or operator must conclude that a statistically significant change has occurred; or

(ii) The owner or operator may use an equivalent statistical procedure for determining whether a statistically significant change has occurred. The Secretary will specify such a procedure in the facility permit if he finds that the alternative procedure reasonable balances the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit in a manner that is comparable to that of the statistical procedure described in paragraph (h)(1)(i) of this section.

(2) In all other situations in a detection monitoring program and in a compliance monitoring program, the owner or operator must use a statistical procedure providing reasonable confidence that the migration of hazardous constituents from a regulated unit into and through the aquifer will be indicated. The Secretary will specify a statistical procedure in the facility permit that he finds:

(i) Is appropriate for the distribution of the data used to establish background values or concentration limits; and

(ii) Provides a reasonable balance between the probability of falsely identifying a non-contaminating regulated unit and the probability of failing to identify a contaminating regulated unit.

§264.98 Detection monitoring program.

An owner or operator required to establish a detection monitoring program under this subpart must, at a minimum, discharge the following responsibilities:

(a) The owner or operator must monitor for indicator parameters (e.g., specific conductance, total organic carbon, total organic halogen chloride, iron, manganese, phenols, sodium, sulfate, pH, and those specified in Appendix III in Part 265), waste constituents, or reaction products that provide a reliable indication of the presence of hazardous constituents in ground water. The Secretary will specify the parameters or constituents to be monitored in the facility permit, after considering the following factors:

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

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

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

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

(b) The owner or operator must install a ground-water monitoring system at the compliance point as specified under §264.95. The ground-water monitoring system must comply with §264.97(a)(2), (b), and (c).

(c) The owner or operator must establish a background value for each monitoring parameter or constituent specified in the permit pursuant to paragraph (a) of this section. The permit will specify the background values for each parameter or specify the procedures to be used to calculate the background values.

(1) The owner or operator must comply with §264.97(g) in developing the data base used to determine background values.

(2) The owner or operator must express background values in a form necessary for the determination of statistically significant increases under §264.97(h).

(3) In taking samples used in the determination of background values, the owner or operator must use a ground-water monitoring system that complies with §264.97(a)(1), (b), and (c).

(d) The owner or operator must determine ground-water quality at each monitoring well at the compliance point at least semi-annually during the active life of a regulated unit (including the closure period) and the post-closure care period. The owner or operator must express the ground-water quality at each monitoring well in a form necessary for the determination of statistically significant increases under §264.97(h).

(e) Elevation of the ground water surface at each monitoring well must be determined each time a sample is obtained. The owner or operator must determine the ground-water flow rate and direction in at least the uppermost aquifer at least annually.

(f) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of §264.97(d) and (e).

(g) The owner or operator must determine whether there is a statistically significant increase over background values for any parameter or constituent specified in the permit pursuant to paragraph (a) of this section each time he determines ground-water quality at the compliance point under paragraph (d) of this section.

(1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the ground-water quality at each monitoring well at the compliance point for each parameter or constituent to the background value for that parameter or constituent, according to the statistical procedure specified in the permit under §264.97(h).

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

(h) If the owner or operator determines, pursuant to paragraph (g) of this section, that there is a statistically significant increase for parameters or constituents specified pursuant to paragraph (a) of this section at any monitoring well at this compliance point, he must:

(1) Notify the Secretary of this finding in writing within seven days. The notification must indicate what parameters or constituents have shown statistically significant increases;

(2) Immediately sample the ground water in all monitoring wells and determine the concentration of all constituents identified in Appendix VIII of Part 261 of these regulations that are present in ground water;

(3) Establish a background value for each Appendix VIII constituents that has been found at the compliance point under paragraph (h)(2) of this section, as follows:

(i) The owner or operator must comply with §264.97(g) in developing the data base used to determine background values;

(ii) The owner or operator must express background values in a form necessary for the determination of statistically significant increases under §264.97(h); and

(iii) In taking samples used in the determination of background values, the owner or operator must use a ground-water monitoring system that complies with §264.97(a)(1), (b), and (c);

(4) Within 90 days, submit to the Secretary an application for a permit modification to establish a compliance monitoring program meeting the requirements of §264.99. The application must include the following information:

(i) An identification of the concentration of any Appendix VIII constituents found in the ground-water at each monitoring well at the compliance point;

(ii) Any proposed changes to the ground-water monitoring system at the facility necessary to meet the requirements of §264.99;

(iii) Any proposed changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical procedures used at the facility necessary to meet the requirements of §264.99;

(iv) For each hazardous constituent found at the compliance point, a proposed concentration limit under §264.94(a)(1) or (2), or a notice of intent to seek a variance under §264.94(b); and

(5) Within 180 days, submit to the Secretary:

(i) All data necessary to justify any variance sought under §264.94(b); and

(ii) An engineering feasibility plan for a corrective action program necessary to meet the requirements of §264.100, unless:

(A) All hazardous constituents identified under paragraph (h)(2) of this section are listed in Table 1 of §264.94 and their concentrations do not exceed the respective values given in that Table; or

(B) The owner or operator has sought a variance under §264.94(b) for every hazardous constituent identified under paragraph (h)(2) of this section.

(i) If the owner or operator determines, pursuant to paragraph (g) of this section, that there is a statistically significant increase of parameters or constituents specified pursuant to paragraph (a) of this section at any monitoring well at the compliance point, he may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under paragraph (h)(4) of this section, he is not relieved of the requirement to submit a permit modification application within the time specified in paragraph (h)(4) of this section unless the demonstration made under this paragraph 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 paragragh, the owner or operator must:

(1) Notify the Secretary in writing within seven days of determining a statistically significant increase at the compliance point that he intends to make a demonstration under this paragraph;

(2) Within 90 days, submit a report to the Secretary which demonstrates that a source other than a regulated unit caused the increase, or that the increase resulted from error in sampling, analysis, or evaluation;

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

(4) Continue to monitor in accordance with the detection monitoring program established under this section.

(j) If the owner or operator determines that the detection monitoring program no longer satisfies the requirements of this section, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(k) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the ground-water protection standard under §264.92 are taken during the term of the permit.

§264.99 Compliance monitoring program.

An owner or operator required to establish a compliance monitoring program under this subpart must, at a minimum, discharge the following responsibilities:

(a) The owner or operator must monitor the ground water to determine whether regulated units are in compliance with the ground-water protection standard under §264.92. The Secretary will specify the ground-water protection standard in the facility permit, including:

(1) A list of the hazardous constituents identified under §264.93;

(2) Concentration limits under §264.94 for each of those hazardous constituents;

(3) The compliance point under §264.95; and

(4) The compliance period under §264.96.

(b) The owner or operator must install a ground-water monitoring system at the compliance point as specified under §264.95. The ground-water monitoring system must comply with §264.97(a)(2), (b), and (c).

(c) Where a concentration limit established under paragraph (a)(2) of this section is based on background ground-water quality, the Secretary will specify the concentration limit in the permit as follows:

(1) If there is a high temporal correlation between upgradient and compliance point concentrations of the hazardous constituents, the owner or operator may establish the concentration limit through sampling at upgradient wells each time ground water is sampled at the compliance point. The Secretary will specify the procedures used for determining the concentration limit in this manner in the permit. In all other cases, the concentration limit will be the mean of the pooled data on the concentration of the hazardous constituent.

(2) If a hazardous constituent is identified on Table 1 under §264.94 and the difference between the respective concentration limit in Table 1 and the background value of that constituent under §264.97(g) is not statistically significant, the owner or operator must use the background value of the constituent as the concentration limit. In determining whether this difference is statistically significant, the owner or operator must use a statistical procedure providing reasonable confidence that a real difference will be indicated. The statistical procedure must:

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

(ii) Provide a reasonable balance between the probability of falsely identifying a significant difference and the probability of failing to identify a significant difference.

(3) The owner or operator must:

(i) Comply with §264.97(g) in developing the data base used to determine background values;

(ii) Express background values in a form necessary for the determination of statistically significant increases under §264.97(h); and

(iii) Use a ground-water monitoring system that complies with §264.97(a)(1), (b), and (c).

(d) The owner or operator must determine the concentration of hazardous constituents in ground water at each monitoring well at the compliance point at least quarterly during the compliance period. The ground-water quality and water elevation data shall be submitted to the Department within thirty (30) days of completing the sampling. The owner or operator must express the concentration at each monitoring well in a form necessary for the determination of statistically significant increases under §264.97(h).

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

(f) The owner or operator must analyze samples from all monitoring wells at the compliance point for all constituents contained in Appendix VIII of Part 261 of these regulations at least annually to determine whether additional hazardous constituents are present in at least the uppermost aquifer. If the owner or operator finds Appendix VIII constituents in the ground water that are not identified in the permit as hazardous constituents, the owner or operator must report the concentrations of these additional constituents to the Secretary within seven days after completion of the analysis.

(g) The owner or operator must use procedures and methods for sampling and analysis that meet the requirements of §264.97(d) and (e).

(h) The owner or operator must determine whether there is a statistically significant increase over the concentration limits for any hazardous constituents specified in the permit pursuant to paragraph (a) of this section each time he determines the concentration of hazardous constituents in ground water at the compliance point.

(1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the ground-water quality at each monitoring well at the compliance point for each hazardous constituent to the concentration limit for that constituent according to the statistical procedures specified in the permit under §264.97(h).

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

(i) If the owner or operator determines, pursuant to paragraph (h) of this section, that the ground-water protection standard is being exceeded at any monitoring well at the point of compliance, he must:

(1) Notify the Secretary of this finding in writing within seven days. The notification must indicate what concentration limits have been exceeded.

(2) Submit to the Secretary an application for a permit modification to establish a corrective action program meeting the requirements of §264.100 within 180 days, or within 90 days if an engineering feasibility study has been previously submitted to the Secretary under §264.98(h)(5). The application must at a minimum include the following information:

(i) A detailed description of corrective actions that will achieve compliance with the ground-water protection standard specified in the permit under paragraph (a) of this section; and

(ii) A plan for a ground-water monitoring program that will demonstrate the effectiveness of the corrective action. Such a ground-water monitoring program may be based on a compliance monitoring program developed to meet the requirements of this section.

(j) If the owner or operator determines, pursuant to paragraph (h) of this section, that the ground-water protection standard is being exceeded at any monitoring well at the point of compliance, he may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under paragraph (i)(2) of this section, he is not relieved of the requirement to submit a permit modification application within the time specified in paragraph (i)(2) of this section unless the demonstration made under this paragraph 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 paragraph, the owner or operator must:

(1) Notify the Secretary in writing within seven days that he intends to make a demonstration under this paragraph;

(2) Within 90 days, submit a report to the Secretary which demonstrates that a source other than a regulated unit caused the standard to be exceeded or that the apparent noncompliance with the standard resulted from error in sampling, analysis, or evaluation;

(3) Within 90 days, submit to the Secretary an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility; and

(4) Continue to monitor in accord with the compliance monitoring program established under this section.

(k) If the owner or operator determines that the compliance monitoring program no longer satisfies the requirements of this section, he must, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(1) The owner or operator must assure that monitoring and corrective action measures necessary to achieve compliance with the ground-water protection standard under §264.92 are taken during the term of the permit.

§264.100 Corrective action program.

An owner or operator required to establish a corrective action program under this subpart must, at a minimum, discharge the following responsibilities:

(a) The owner or operator must take corrective action to ensure that regulated units are in compliance with the ground-water protection standard under §264.92. The Secretary will specify the ground-water protection standard in the facility permit, including:

(1) A list of the hazardous constituents identified under §264.93;

(2) Concentration limits under §264.94 for each of those hazardous constituents;

(3) The compliance point under §264.95; and

(4) The compliance period under §264.96.

(b) The owner or operator must implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place. The permit will specify the specific measures that will be taken.

(c) The owner or operator must begin corrective action within a reasonable time period after the ground-water protection standard is exceeded. The Secretary will specify that time period in the facility permit. If a facility permit includes a corrective action program in addition to a compliance monitoring program, the permit will specify when the corrective action will begin and such a requirement will operate in lieu of §264.99(i)(2).

(d) In conjunction with a corrective action program, the owner or operator must establish and implement a ground-water monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under §264.99 and must be as effective as that program in determining compliance with the ground-water protection standard under §264.92 and in determining the success of a corrective action program under paragraph (e) of this section, where appropriate.

(e) In addition to the other requirements of this section, the owner or operator must conduct a corrective action program to remove or treat in place any hazardous constituents under §264.93 that exceed concentration limits under §264.94 in ground water between the compliance point under §264.95 and the downgradient facility property boundary. The permit will specify the measures to be taken.

(1) Corrective action measures under this paragraph must be initiated and completed within a reasonable period of time considering the extent of contamination.

(2) Corrective action measures under this paragraph may be terminated once the concentration of hazardous constituents under §264.93 is reduced to levels below their respective concentration limits under §264.94.

(f) The owner or operator must continue corrective action measures during the compliance period to the extent necessary to ensure that the ground water protection standard is not exceeded. If the owner or operator is conducting corrective action at the end of the compliance period, he must continue that corrective action for as long as necessary to achieve compliance with the ground-water protection standard. The owner or operator may terminate corrective action measures taken beyond the period equal to the active life of the waste management area (including the closure period) if he can demonstrate, based on data from the ground-water monitoring program under paragraph (d) of this section, that the ground-water protection standard of §264.92 has not been exceeded for a period of three consecutive years.

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

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

§264.101-264.109 (Reserved)

Subpart G-Closure and Post-Closure

§264.110 Applicability.

Except as §264.1 provides otherwise:

(a) Sections §264.111-264.115 (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

(b) Sections §264.117-264.120 (which concern post-closure care) apply to the owners and operators of all hazardous waste disposal facilities and piles, and surface impoundments from which the owner or operator intends to remove the waste at closure, to the extent that these sections are made applicable to such facilities in §§264.228 and 264.258.

§264.111 Closure performance standard.

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

(a) Minimizes the need for further maintenance, and

(b) Controls, minimizes or eliminates, to the extent necessary to prevent threats to human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters or to the atmosphere.

§264.112 Closure plan; amendment of plan.

(a) The owner or operator of a hazardous waste management facility must have a written closure plan. The plan must be submitted with the permit application, in accordance with §122.25(a)(13) of these Regulations, the approved by the Secretary as part of the permit issuance proceeding under part 124 of these Regulations. In accordance with §122.32 of this Chapter, the approved closure plan will become a condition of any RCRA/State permit. The Secretary's decision must assure that that approved closure plan is consistent with §§264.111, 264.113, 264.114, 264.115, and the applicable requirements of §§264.178, 264.197, 264.228, 264.258, 264.280, 264.310, and 264.351. A copy of the approved plan and all revisions to the plan must be kept at the facility until closure is completed and certified in accordance with §264.115. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end

of its intended operating life. The closure plan must include, at least:

(1) A description of how and when the facility will be partially closed, if applicable, and finally closed. The description must identify the maximum extent of the operation which will be unclosed during the life of the facility, and how the requirements of §§264.111, 264.113, 264.114, 264.115, and the applicable closure requirements of §§264.178, 264.197, 264.228, 264.258, 264.280, 264.310, and 264.351 will be met;

(2) An estimate of the maximum inventory of wastes in storage and in treatment at any time during the life of the facility. (Any change in this estimate is a minor modification under §122.42);

(3) A description of the steps needed to decontaminate facility equipment during closure; and

(4) An estimate of the expected year of closure and a schedule for final closure. The schedule must include, at a minimum, the total time required to close the facility and the time required for intervening closure activities which will allow tracking of the progress of closure. (For example, in the case of a landfill, estimates of the time required to treat and dispose of all the waste inventory and of the time required to place a final cover must be included.)

(b) The owner or operator may amend his closure plan at any time during the active life of the facility. (The active life of the facility is that period during which wastes are periodically received.) The owner or operator must amend the plan whenever changes in operating plans or facility design affect the closure plan, or whenever there is a change in the expected year of closure. When the owner or operator requests a permit modification to authorize a change in operating plans or facility design, he must request a modification of the closure plan at the same time (see §124.5(a)). If a permit modification is not needed to authorize the change in operating plans or facility design, the request for modification of the closure plan must be make within 60 days after the change in plans or design occurs.

[Comment: Changes in estimates of maximum inventory and of the estimated year of closure under §264.112(a) (2) and (4) may be made as minor permit modifications under §122.42]

(c) The owner or operator must notify the Secretary at least 180 days prior to the date he expects to begin closure.

[Comment: The date when he "expects to begin closure" should be within 30 days after the date on which he expects to receive the final volume of wastes. If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or compliance order under §6305 of 7.DelC. Chapter 63 to cease receiving wastes or to close, then the requirement of this paragraph does not apply. However, the owner or operator must close the facility in accordance with the deadlines established in §264.113]

§264.113 Closure; time allowed for closure.

(a) Within 90 days after receiving the final volume of hazardous wastes, the owner or operator must treat, remove from the site, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Secretary may approve a longer period if the owner or operator demonstrates that:

(1)(i) The activities required to comply with this paragraph will, of necessity, take longer than 90 days to complete; or

(ii)(A) The facility has the capacity to receive additional wastes;

(B) There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the site; and

(C) Closure of the facility would be incompatible with continued operation of the site; and

(2) He has taken and will continue to take all steps to prevent threats to human health and the environment.

(b) The owner or operator must complete closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of wastes. The Secretary may approve a longer closure period if the owner or operator demonstrates that:

(1)(i) The closure activities will, of necessity, take longer than 180 days to complete; or

(ii)(A) The facility has the capacity to receive additional wastes;

(B) There is reasonable likelihood that a person other than the owner or operator will recommence operation of the site; and

(C) Closure of the facility would be incompatible with continued operation of the site; and

(2) He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but inactive facility.

[Comment: Any extension of the 90 or 180 day period in this Section may be made as a minor modification under §122.42. Under paragraphs (a)(1)(ii)&(b)(1)(ii) of this Section, if operation of the site is recommenced, the Secretary may defer completion of closure activities until the new operation is terminated.]

§264.114 Disposal or decontamination of equipment.

When closure is completed, all facility equipment and structures must have been properly disposed of, or decontaminated by removing all hazardous waste and residues.

§264.115 Certification of closure.

When closure is completed, the owner or operator must submit to the Secretary certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan.

§264.116 [Reserved]

§264.117 Post-closure care and use of property.

(a)(1) Post-closure care must continue for 30 years after the date of completing closure and must consist of at least the following:

(i) Monitoring and reporting in accordance with the requirements of Subpart F, K, L, M, & N of this part; and

(ii) Maintenance and monitoring of waste containment systems in accordance with the requirements of Parts F, K, L, M, & N of this part.

(2)(i) During the 180-day period preceding closure (see §264.112(c)) or at any time thereafter, the Secretary may reduce the post-closure care period to less than 30 years if he finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or groundwater monitoring results, characteristics of the waste, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the facility is secure).

(ii) Prior to the time that the post-closure care period is due to expire, the Secretary may extend the post-closure care period if he finds that the extended period is necessary to protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of waste at levels which may be harmful to human health and the environment).

(b) The Secretary may require, at closure, continuation of any of the security requirements of §264.14 during part or all of the post-closure period after the date of completing closure when:

(1) Wastes may remain exposed after completion of closure; or

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

(c) Post-closure use of property on or in which hazardous wastes remain after closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of any containment system, or the function of the facility's monitoring systems, unless the Secretary finds that the disturbance:

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

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

(d) All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in §264.118.

§264.118 Post-closure plan; amendment of plan.

(a) The owner or operator of a disposal facility must have a written post-closure plan. In addition, certain piles and certain surface impoundments from which the owner or operator intends to remove the wastes at closure are required by §§264.228 and 264.258 to have post-closure plans. The plan must be submitted with the permit application, in accordance with §122.25(a)(13) of these Regulations and approved by the Secretary as part of the permit issuance proceeding under Part 124 of these Regulations. In accordance with §122.32(b) of these Regulations, the approved post-closure plan will become a condition of any permit issued. A copy of the approved plan and all revisions to the plan must be kept at the facility until the post-closure care period begins. This plan must identify the activities which will be carried on after closure and the frequency of these activities, and include at least:

(1) A description of the planned ground-water monitoring activities and frequencies at which they will be performed to comply with Subparts F, K, L, M, & N of this part during the post-closure period;

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

(i) The integrity of the cap and final cover or other containment systems in accordance with the requirements of Subparts K, L, M, & N of this part; and

(ii) The function of the facility monitoring equipment in accordance with the requirements of Subparts K, L, M, & N of this part; and

(3) The name, address, and phone number of the person or office to contact about the disposal facility during the post-closure period. This person or office must keep an updated post-closure plan during the post-closure period.

(b) The owner or operator may amend his post-closure plan at any time during the active life of the disposal facility or during the post-closure care period. The owner or operator must amend his plan whenever changes in operating plans or facility design, or events which occur during the post-closure period, affect his post-closure plan. He must also amend his plan whenever there is a change in the expected year of closure.

(c) When a permit modification is requested during the active life of the facility to authorize a change in operating plans or facility design, modification of the post-closure plan must be requested at the same time (see §124.5(a)). In all other cases, the request for modification of the post-closure plan must be made within 60 days after the change in operating plans or facility design or the events which affect his post-closure plan occur.

§264.119 Notice to local land authority.

Within 90 days after closure is completed, the owner or operator of a disposal facility must submit to the local zoning authority or the authority with jurisdiction over local land use and to the Secretary a survey plat indicating the location and dimensions of landfill cells or other disposal areas with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. This plat filed with the local zoning authority or the

authority with jurisdiction over local land use must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the site as specified in §264.117(c). In addition, the owner or operator must submit to the local zoning authority or the authority with jurisdiction over local land use and to the Secretary a record of the type, location, and quantity of hazardous wastes disposed of within each cell or area of the facility. For wastes disposed of before these regulations were promulgated, the owner or operator must identify the type, location and quantity of the wastes to the best of his knowledge and in accordance with any records he has kept. Any changes in the type, location, or quantity of hazardous wastes disposed of within each cell or area of the facility that occur after the survey plat and record of wastes have been filed must be reported to the local zoning authority or the authority with jurisdiction over local land use and to the Secretary.

§264.120 Notice in deed to property.

(a) The owner of the property on which a disposal facility is located must record, in accordance with State law, a notation on the deed to the facility property--or on some other instrument which is normally examined during title search--that will in perpetuity notify any potential purchaser of the property that:

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

(2) Its use is restricted under §264.117(c); and

(3) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or area of the facility required in §265.119 have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Secretary of DNREC.

(b) If at any time the owner or operator or any subsequent owner of the land upon which a hazardous waste facility was located removes the waste and waste residues, the liner, if any, and all contaminated underlying and surrounding soil, he may remove the notation on the deed to the facility property or other instrument normally examined during title search, or he may add a notation to the deed or instrument indicating the removal of the waste.

[Comment: On removing the waste and waste residues, the liner, if any, and the contaminated soil, the owner or operator, unless he can demonstrate in accordance with §261.3(d) of these Regulations that any solid waste removed is not a hazardous waste, becomes a generator of hazardous waste and must manage it in accordance with all applicable requirement of Parts 262-265 of these Regulations.]

Subpart H-Financial Requirements

§264.140 Applicability.

(a) The requirements of §§264.142, 264.143, and 264.147-151 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this section or in §264.1.

(b) The requirements of §§264.144 and 264.145 apply only to owners and operators of disposal facilities and piles and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that these sections are made applicable to such facilities in §§264.228 and 264.258.

(c) States and the Federal government are exempt from the requirements of this subpart.

§264.141 Definitions of terms as used in this subpart.

(a) "Closure plan" means the plan for closure prepared in accordance with the requirements of §264.112.

(b) "Current closure cost estimate" means the most recent of the estimates prepared in accordance with §264.142 (a), (b), and (c).

(c) "Current post-closure cost estimate" means the most recent of the estimates prepared in accordance with §264.144(a), (b), and (c).

(d) "Parent corporation" means a corporation which directly owns at least 50 percent of the voting stock of the corporation which is the facility owner or operator; the latter corporation is deemed a "subsidiary" of the parent corporation.

(e) "Post-closure plan" means the plan for post-closure care prepared in accordance with the requirements of §§264.117-264.120.

(f) The following terms are used in the specifications for the financial tests for closure, post-closure care, and liability coverage. The definitions are intended to assist in the understanding of these regulations and are not intended to limit the meanings of terms in a way that conflicts with generally accepted accounting practices.

"Assets" means all existing and all probable future economic benefits obtained or controlled by a particular entity.

"Current assets" means cash or other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business.

"Current liabilities" means obligations whose liquidation is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities.

"Independently audited" refers to an audit performed by an independent certified public accountant in accordance with generally accepted auditing standards.

"Liabilities" means probable future sacrifices of economic benefits arising from present obligations to transfer assets or provide services to other entities in the future as a result of past transactions or events.

"Net working capital" means current assets minus current liabilities.

"Net worth" means total assets minus total liabilities and is equivalent to owner's equity.

"Tangible net worth" means the tangible assets that remain after deducting liabilities; such assets would not include intangibles such as goodwill and rights to patents or royalties.

(g) In the liability insurance requirements the terms "bodily injury" and "property damage" shall have the meanings given these terms by applicable State law. However, these terms do not include those liabilities which, consistent with standard industry practices, are excluded from coverage in liability policies for bodily injury and property damage. The Department intends the meanings of other terms used in the liability insurance requirements to be consistent with their common meanings within the insurance industry. The definitions given below of several of the terms are intended to assist in the understanding of these regulations and are not intended to limit their meanings in a way that conflicts with general insurance industry usage.

"Accidental occurrence" means an accident, including continuous or repeated exposure to conditions, which results in bodily injury or property damage neither expected nor intended from the standpoint of the insured.

"Legal defense costs" means any expenses that an insurer incurs in defending against claims of third parties brought under the terms and conditions of an insurance policy.

"Nonsudden accidental occurrence" means an occurrence which takes place over time and involves continuous or repeated exposure.

"Sudden accidental occurrence" means an occurrence which is not continuous or repeated in nature.

§264.142 Cost estimate for closure.

(a) The owner or operator must have a written extimate, in current dollars, of the cost of closing the facility in accordance with the requirements in §§264.111-264.115 and applicable closure requirements in §§264.178, 264.197, 264.228, 264.258, 264.280, 264.310, and 264.351. . The closure cost estimate must equal the cost of

closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. (See §264.112(a)).

(b) The owner or operator must adjust the closure cost estimate for inflation within 30 days after each anniversary of the date on which the first closure cost estimate was prepared. The adjustment must be made as specified in paragraphs (b)(1) and (b)(2) of this section, using an inflation factor derived from the annual implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

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

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

(c) The owner or operator must revise the closure cost estimate whenever a change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in §264.142(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with §264.142 (a) and (c) and, when this estimate has been adjusted in accordance with §264.142(b), the latest adjusted closure cost estimate.

§264.143 Financial assurance for closure.

An owner or operator of each facility must establish financial assurance for closure of the facility. He must choose from the options as specified in paragraphs (a) through (f) of this section.

(a) Closure trust fund. (1) An owner or operator may satisfy the requirements of this section by establishing a closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Secretary. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in §264.151(a)(1), and the trust agreement must be accompanied by a formal certification of acknowledgement (for example, see §264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial RCRA/State 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 must be made as follows:

(i) For a new facility, the first payment must be made before the initial receipt of hazardous waste for treatment, storage, or disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Secretary before this initial receipt of hazardous waste. The first payment must be at least equal to the current closure cost estimate, except as provided in §264.143(g), divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment.

The amount of each subsequent payment must be determined by this formula:

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

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.

(ii) If an owner or operator establishes a trust fund as specified in §265.143(a) of these regulations, 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 must be paid in over the pay-in period as defined in paragraph (a)(3) of this section. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Part 265 of these regulations. The amount of each payment must be determined by this formula:

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

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.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he must 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 paragraph (a)(3) of this section.

(5) If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in this section or in §265.143 of these regulations, his first payment must 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 this paragraph and §265.143(a) of these regulations, as applicable.

(6) After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator must 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 60 days after the change in the cost estimate, must 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 this section to cover the difference.

(7) 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 Secretary for release of the amount in excess of the current closure cost estimate.

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

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraphs (a) (7) or (8) of this section, the Secretary will instruct the trustee to release to the owner or operator such funds as the Secretary specifies in writing.

(10) After beginning final closure, an owner or operator or any other person authorized to perform closure may request reimbursement for closure expenditures by submitting itemized bills to the Secretary. Within 60 days after receiving bills for closure activities, the Secretary will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, he will instruct the trustee to make

reimbursement in such amounts as the Secretary specifies in writing. If the Secretary has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with §264.143(i), that the owner or operator is no longer required to maintain financial assurance for closure.

(11) The Secretary will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.143(i).

(b) Surety bond guaranteeing payment into a closure trust fund. (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Secretary. An owner or operator of a new facility must submit the bond to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in §264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Secretary. This standby trust fund must meet the requirements specified in §264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Secretary with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in §264.143(a);

(B) Updating of Schedule A of the trust agreement (see §264.151(a)) to show current closure cost estimates;

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

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

(4) The bond must guarantee that the owner or operator will:

(i) 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

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

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

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

(6) The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in §264.143(g).

(7) Whenever the current closure cost estimate increases to an amount greater then the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Secretary, or obtain other financial assurance as specified in this section 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 Secretary.

(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 Secretary. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Secretary, as evidence by the return receipts.

(9) The owner or operator may cancel the bond if the Secretary has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) Surety bond guaranteeing performance of closure. (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Secretary. An owner or operator of a new facility must submit the bond to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in §264.151(c).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Secretary. This standby trust must meet the requirements specified in §264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Secretary with the surety bond; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in §264.143(a);

(B) Updating of Schedule A of the trust agreement (see §264.151(a)) to show current closure cost estimates;

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

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

(4) The bond must guarantee that the owner or operator will:

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

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

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination pursuant to Section 6305 of 7 Del.C. Chapter 63 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, under the terms of the bond the surety will perform final closure as guaranteed by the bond or will deposit the amount of the penal sum into the standby trust fund.

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

(7) Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Secretary, or

obtain other financial assurance as specified in this section. 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 Secretary.

(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 Secretary. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Secretary, as evidenced by the return receipts.

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

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.143(i).

(10) The surety will not be liable for deficiencies in the performance of closure by the owner or operator after the Secretary releases the owner or operator from the requirements of this section in accordance with §264.143(i).

(d) Closure letter of credit. (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Secretary. An owner or operator of a new facility must submit the letter of credit to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which 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 must be identical to the wording specified in §264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Secretary will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Secretary. This standby trust fund must meet the requirements of the trust fund specified in §264.143(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Secretary with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in §264.143(a);

(B) Updating of Schedule A of the trust agreement (see §264.151(a)) to show current closure cost estimates;

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

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

(4) The letter of credit must 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.

(5) The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing

institution notifies both the owner or operator and the Secretary by certified mail of a decision not to extend the expiration date. Under the terms of the letter credit, the 120 days will begin on the date when both the owner or operator and the Secretary have received the notice, as evidenced by the return receipts.

(6) The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in §264.143(g).

(7) Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increases must 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 such increase to the Secretary, or obtain other financial assurance as specified in this section 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 Secretary.

(8) Following a determination pursuant to Section 6305 of 7 Del. C. Chaptor 63 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 Secretary may draw on the letter of credit.

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

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

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.143(i)

(e) Closure insurance. (1) An owner or operator may satisfy the requirements of this section by obtaining closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Secretary. An owner or operator of a new facility must submit the certificate of insurance to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insureer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insureer, in one or more States.

(2) The wording of the certificate of insurance must be identical to the wording specified in §264.151(e).

(3) The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimated, except as provided in §264.143(g). The term "face amount" means the total amount the insureer is obligated to pay under the policy. Actual payments by the insureer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

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

(5) After beginning final closure, an owner or operator or any other person authorized to perfom closure may request reimbursement for closure expenditures by submitting itemized bills to the Secretary. Within 60 days after receiving bills for closure activities, the Secretary will determine whether the closure expenditures are in accordance with the closure plan or otherwise justified, and if so, he will instruct the insurer to make reimbursement in such amounts as as the Secretary specifies in writing. If the Secretary has reason to believe that the cost of closure will be significantly greater than the face amount of the policy, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with §264.143(i), that the owner or operator is no longer required to maintain financial assurance for closure of the facility.

(6) The owner of operator must maintain the policy in full force effect until the Secretary consents to termination of the policy by the owner or operator as specified in paragraph (e)(10) of this section. Failure to pay the permium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of these regulations, warranting such remedy as the Secretary deems necessary. Such violation will be deemed to begin upon receipt by the Secretary of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

(7) Each policy must contain a provision allowing assignments of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

(8) The policy must provide that the insurer may not cancel, terminate, or fail to renew the polciy except for failure to pay the premium. The automatic renewal of the policy, must 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 insureer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Secretary. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Secretary and the owner or operator, as evidenced by the return receipts. Cancellation termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Secretary deems the facility abandoned; or

(ii) Ther permit is terminated or revoked or a new permit is denied; or

(iii) Closure is ordered by the Secretary or a U.S. district court or other court of competant jurisdiction; or

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

(v) The premium due is paid.

(9) Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Secretary, or obtain other financial assurance as specified in

this section to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amoutn of the current closure cost estimate following written approval by the Secretary.

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

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.143(i).

(f) Financial test and corporate guarantee for closure. (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either paragraph (f)(1)(i) or (f)(1)(ii) of this section:

(i) The owner or operator must have:

(A) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 1.5; and

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

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

(D) Assets in the Unites States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post closure cost estimates.

(ii) The owner or operator must have:

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

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

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

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

(2) The phrase "current closure and post-closure cost estimates" as used in paragraph (f)(1) of this section refers to the cost estimated required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer (§264.151(f)).

(3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Secretary:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in §264.151(f); and

(ii) 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

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

(A) He 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

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

(4) An owner or operator of a new facility must submit the items spcified in paragraph (f)(3) of this section to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Secretary within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must send notice to the Secretary of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 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 must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Secretary may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (f)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (f)(3) of this section. If the Secretary finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Secretary may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Secretary will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) The owner or operator is no longer required to submit the items specified in paragraph (f)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.143(i).

(10) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (f)(8) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in §264.151(h). The corporate guarantee must accompany the items sent to the Secretary as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) 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 will do so or establish a trust fund as specified in §264.143(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Secretary.

Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Secretary, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternatice financial sassurance as specified in this section and obtain the written approval of such alternate assurance from the Secretary within 90 days after receipt by both the owner or operator and the Secretary of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternative financial assurance in the name of the owner or operator.

(g) Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this section 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 paragraphs (a), (b), (d), and (e), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must 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 may use the trust fund as the standby trust fund for the other mechanisms. The Secretary may use any or all of the mechanisms to provide for closure of the facility.

(h) Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechnism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the Secretary must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for closure assured by the mechanism. If the facilities covered by the mechanism are outside of Delaware a list of facilities and their closure/or post-closure costs must be included. The amount of funds available through the mechanism must 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 Secretary 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) Release of the owner or operator from the requirements of this section. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that closure has been accomplished in accordance with the closure plan, the Secretary will notify the owner or operator in writing that he is no longer required by this section to maintain financial assurance for closure of the particular facility, unless the Secretary has reason to believe that closure has not been in accordance with the closure plan.

§264.144 Cost estimate for post-closure care.

(a) The owner or operator of a disposal facility must subject to post-closure monitoring or maintenance requirements must have a 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 §§264.117-264.120, 264.228, 264.258, 264.280, and 264.310. 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 Subpart G or Part 264.

(b) During the operating life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 30 days after each anniversary of the date on which the first post-closure cost estimate was prepared. The adjustment must be made as specified in paragraphs (nb)(1) and (b)(2) of this section, using an inflation factor derived from the annual Implicit Price Deflator for gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

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

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

(c) The owner or operator must revise the post-closure cost estimate during the operating life of the facility whenever a change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in §264.144(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest post-closure cost estimate prepared in accordance with §264.144(a) and (c) and, when this estimate has been adjusted in accordance with §264.144(b), the latest adjusted post-closure cost estimate.

§264.145 Financial assurance for post-closure care.

The owner or operator of a facility subject to post-closure monitoring or maintenance requirements must establish financial assurance for post-closure care in accordance with the approved post-closure plan for the facility. He must choose from the following options:

(a) Post-closure trust fund. (1) An owner or operator may satisfy the requirements of this section by establishing a post-closure trust fund which conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Secretary. An owner or operator of a new facility must submit the originally signed duplicate of the trust agreement to the Secretary at least 60 days before the date on which hazardous waste is first received for disposal. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(2) The wording of the trust agreement must be identical to the wording specified in §264.151(a)(1), and the trust agreement must be accompanied by a formal certification of acknowledgement (for example, see §264.151(a)(2)). Schedule A of the trust agreement must be updated within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

(3) Payments into the trust fund must be made annually by the owner or operator over the term of the initial RCRA/State 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 must be made as follows:

(i) For a new facility, the first payment must be made before the initial receipt of hazardous waste for disposal. A receipt from the trustee for this payment must be submitted by the owner or operator to the Secretary before this initial receipt of hazardous waste. The first payment must be at least equal to the current post-closure cost estimate, except as provided in §264.145(g), divided by the number of years in the pay-in

period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment must be determined by this formula:

$$\text{Next Payment} = \frac{CE - CV}{Y}$$

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.

(ii) If an owner of operator establishes a trust fund as specified in §265.145(a) of these regulations, 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 must be paid in over the pay-in period as defined in paragraph (a)(3) of this section. Payments must continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Part 265 of these regulations. The amount of each payment must be determined by this formula:

$$\text{Next Payment} = \frac{CE - CV}{Y}$$

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.

(4) The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must 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 paragraph (a)(3) of this section.

(5) If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in this section or in §265.145 of these regulations, his first payment must 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 this paragraph and §265.145(a) of these regulations, as applicable.

(6) 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 must 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 60 days after the change in the cost estimate, must 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 this section to cover the difference.

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

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

(9) Within 60 days after receiving a request from the owner or operator for release of funds as specified in paragraph (a)(7) or (8) of this section, the Secretary will instruct the trustee to release to the owner or operator such funds as the Secretary specifies in writing.

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

(11) An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the Secretary. Within 60 days after receiving bills for post-closure activities, the Secretary will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, he will instruct the trustee to make reimbursement in such amounts as the Secretary specifies in writing.

(12) The Secretary will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with 264.145(i).

(b) Surety bond guaranteeing payment into a post-closure trust fund. (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Secretary. An owner or operator of a new facility must submit the bond to the Secretary at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in 264.151(b).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Secretary. This standby trust fund must meet the requirements specified in §264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Secretary with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in §264.145(a);

(B) Updating of Schedule A of the trust agreement (see §264.151(a)) to show current post-closure cost estimates;

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

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

(4) The bond must guarantee that the owner or operator will:

(i) 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

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

(iii) Provide alternative financial assurance as specified in this section, and obtain the Secretary's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Secretary's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Secretary of a notice of cancellation of the bond from the surety.

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

(6) The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in §264.145(g).

(7) Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must 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 such increase to the Secretary, or obtain other financial assurance as specified in this section 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 Secretary.

(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 Secretary Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Secretary, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond if the Secretary has given prior written consent based on his receipt of evidence of alternate financial assurance as specified in this section.

(c) Surety bond guaranteeing performance of post-closure care. (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this paragraph and submitting the bond to the Secretary. An owner or operator of a new facility must submit the bond to the Secretary at least 60 days before the date on which hazardous waste is first received for disposal. The bond must be effective before this initial receipt of hazardous waste. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The wording of the surety bond must be identical to the wording specified in §264.151(c).

(3) The owner or operator who uses a surety bond to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Secretary. This standby trust fund must meet the requirements specified in §264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Secretary with the surety bond; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations:

(A) Payments into the trust fund as specified in §264.145(a);

(B) Updating of Schedule A of the trust agreement (see §264.151(a)) to show current post-closure cost estimates;

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

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

(4) The bond must guarantee that the owner or operator will:

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

(ii) Provide alternate financial assurance as specified in this section, and obtain the Secretary's written approval of the assurance provided, within 90 days of receipt by both the owner or operator and the Secretary of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination pursuant to Section 6305 of 7 Del. C. Chapter 63 that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, under the terms of the bond the surety will perform post-closure care in accordance with the post-closure plan and other permit requirements or will deposit the amount of the penal sum into the standby trust fund.

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

(7) 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 60 days after the increase, must 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 such increase to the Secretary, or obtain other financial assurance as specified in this section. 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 Secretary.

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

(9) 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 Secretary. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of the notice of cancellation by both the owner or operator and the Secretary, as evidenced by the return receipts.

(10) The owner or operator may cancel the bond if the Secretary has given prior written consent. The Secretary will provide such written consent when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.145(i).

(11) The surety will not be liable for deficiencies in the performance of post-closure care by the owner or operator after the Secretary releases the owner or operator from the requirements of this section in accordance with §264.145(i).

(d) Post-closure letter of credit. (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit which conforms to the requirements of this paragraph and submitting the letter to the Secretary. An owner or operator of a new facility must submit the letter of credit to the Secretary at least 60 days before the date on which hazardous waste is first received for disposal. The letter of credit must be effective before this initial receipt of hazardous waste. The issuing institution must be an entity which 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 must be identical to the wording specified in §264.151(d).

(3) An owner or operator who uses a letter of credit to satisfy the requirements of this section must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Secretary will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Secretary. This standby trust fund must meet the requirements of the trust fund specified in §264.145(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Secretary with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of this section, the following are not required by these regulations.

(A) Payments into the trust fund as specified in §264.145(a);

(B) Updating of Schedule A of the trust agreement (see §264.15(a)) to show current post-closure cost estimates;

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

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

(4) The letter of credit must 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.

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

(6) The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in §264.145(g).

(7) 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 60 days after the increase, must 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 such increase to the Secretary, or obtain other financial assurance as specified in this section 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 Secretary.

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

(9) Following a determination pursuant to Section 6305 of 7 Del. C. Chapter 63 that the owner or operator has failed to perform post-closure care in accordance with the post-closure plan and other permit requirements, the Secretary may draw on the letter of credit.

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

(11) The Secretary will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.145(i).

(e) Post-closure insurance. (1) An owner or operator may satisfy the requirements of this section by obtaining post-closure insurance which conforms to the requirements of this paragraph and submitting a certificate of such insurance to the Secretary. An owner or operator of a new facility must submit the certificate of insurance to the Secretary at least 60 days before the date on which hazard ous waste is first received for disposal. The insurance must be effective before this initial receipt of hazardous waste. At a minimum, the insurer must 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.

(2) The wording of the certificate of insurance must be identical to the wording specified in §264.151(e).

(3) The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in §264.145(g). The term "face amount" means the total amount the insurer is obligated to pay under the

policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

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

(5) An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure expenditures by submitting itemized bills to the Secretary. Within 60 days after receiving bills for post-closure activities, the Secretary will determine whether the post-closure expenditures are in accordance with the post-closure plan or otherwise justified, and if so, he will instruct the insurer to make reimbursement in such amounts as the Secretary specifies in writing.

(6) The owner or operator must maintain the policy in full force and effect until the Secretary consents to termination of the policy by the owner or operator as specified in paragraph (e)(11) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this section, will constitute a significant violation of these regulations, warranting such remedy as the Secretary deems necessary. Such violation will be deemed to begin upon receipt by the Secretary of a notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

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

(8) The policy must 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 must, 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 Secretary. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Secretary and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Secretary deems the facility abandoned; or

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

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

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

(v) The premium due is paid.

(9) 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 60 days after the increase, must 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 such increase to the Secretary, or obtain other financial assurance as specified in this section 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 Secretary.

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

(11) The Secretary will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.145(i)

(f) Financial test and corporate guarantee for post-closure care. (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of either paragraph (f)(1)(i) or (f)(1)(ii) of this section:

(i) The owner or operator must have:

(A) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreci ation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

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

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

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

(ii) The owner or operator must have;

(A) A current rating for his 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; and

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

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

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

(2) The phrase "current closure and post-closure cost estimates" as used in paragraph (f)(1) of this section 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 (§264.151(f)).

(3) To demonstrate that he meets this test, the owner or operator must submit the following items to the Secretary:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in 264.151(f); and

(ii) 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

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

(A) He 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

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

(4) An owner or operator of a new facility must submit the items specified in paragraph (f)(3) of this section to the Secretary at least 60 days before the date on which hazardous waste is first received for disposal.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Secretary within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must send notice to the Secretary of intent to establish alternate financial assurance as specified in this section. The notice must be sent by certified mail within 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 must provide the alternate financial assurance within 120 days after the end of such fiscal year.

(7) The Secretary may, based on a reasonable belief that the owner or operator may no longer meet the requirements of paragraph (f)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in paragraph (f)(3) of this section. If the Secretary finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, the owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of such a finding.

(8) The Secretary may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Secretary will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in this section within 30 days after notification of the disallowance.

(9) During the period of post-closure care, the Secretary my 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 Secretary that the amount of the cost estimate exceeds the remaining cost of post-closure care.

(10) The owner or operator is no longer required to submit the items specified in paragraph (f)(3) of this section when:

(i) An owner or operator substitutes alternate financial assurance as specified in this section; or

(ii) The Secretary releases the owner or operator from the requirements of this section in accordance with §264.145(i).

(11) An owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (9) of this section and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in §264.151(h). The corporate guarantee must accompany the items sent to the Secretary as specified in paragraph (f)(3) of this section. The terms of the corporate guarantee must provide that:

(i) 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 will do so or establish a trust fund as specified in §264.145(a) in the name of the owner or operator.

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

(iii) If the owner or operator fails to provide alternate financial assurance as specified in this section and obtain the written approval of such alternate assurance from the Secretary within 90 days after receipt by both the owner or operator and the Secretary of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(g) Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of this section 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 paragraphs (a), (b), (d), and (e), respectively, of this section, except that it is the combination of mechanisms, rather than the single mechanism, which must 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 may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Secretary may use any or all of the mechanisms to provide for post-closure care of the facility.

(h) Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in this section to meet the requirements of this section for more than one facility. Evidence of financial assurance submitted to the Secretary 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 mechan ism. If the facilities covered by the mechanism are outside of Delaware, a list of facilities and their closure and/or post closure costs must be included. The amount of funds avail able through the mechanism must 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 Secretary 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) Release of the owner or operator from the requirements of this section. When an owner or operator has completed, to the satisfaction of the Secretary, all post-closure care requirements in accordance with the post-closure plan, the Secretary will, at the request of the owner or operator, notify him in writing that he is no longer required by this section to maintain financial assur ance for post-closure care of the particular facility.

§264.146 Use of a mechanism for financial assurance of both closure and post-closure care.

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 §§264.143 and 264.145. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been establish ed and maintained for financial assur ance of closure and of post-closure care.

§264.147 Liability requirements.

(a) Coverage for sudden acciden tal occurrences. An owner or operator of a hazardous waste treatment, stor age, or disposal facility, or a group of such facilities, must 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 must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in paragraphs (a)(1), (a)(2), and (a)(3) of this section:

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liabil ity Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in §264.151(i). The wording of the certi ficate of insurance must be identical to the wording specified in §264.151 (j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of

insurance to the Secretary, or EPA Regional Administrators if the facilities are located in more than one EPA Region. If requested by the Secretary, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(ii) Each insurance policy must be issued by an insurer which, 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.

(2) An owner or operator may meet the requirements of this section by passing a financial test for liability coverage as specified in paragraph (f) of this section.

(3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this section. The amounts of coverage demonstrated must total at least the minimum amounts required by this paragraph.

(b) Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operation of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence per site with an annual aggregate of at least $6 million per site, exclusive of legal defense costs. This liability coverage may be demonstrated in one of three ways, as specified in paragraphs (b)(1), (b)(2), and (b)(3) of this section:

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in this paragraph.

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in §264.151(i). The wording of the certificate of insurance must be identical to the wording specified in §264.151(j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Secretary, or EPA Regional Administrator if the facilities are located in more than one EPA Region. If requested by the Secretary, the owner or operator must provide a signed duplicate original of the insurance policy. An owner or operator of a new facility must submit the signed duplicate original of the Hazardous Waste Facility Liability Endorsement or the Certificate of Liability Insurance to the Secretary at least 60 days before the date on which hazardous waste is first received for treatment, storage, or disposal. The insurance must be effective before this initial receipt of hazardous waste.

(ii) Each insurance policy must be issued by an insurer which, 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.

(2) An owner or operator may meet the requirements of this section by passing a financial test for liabil ity coverage as specified in paragraph (f) of this section.

(3) An owner or operator may demonstrate the required liability coverage through use of both the financial test and insurance as these mechanisms are specified in this sec tion. The amounts of coverage must total at least the minimum amounts required by this paragraph.

(4) For existing facilities, the required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates listed below. The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding the effective date of these regula tions, will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues will determine the date by which the coverage must be demonstrated. The dates are as follows:

(i) For an owner or operator with sales or revenues totaling $5 million or more, 6 months after the effective date of these regulations.

(ii) All other owners or operators, by January 15, 1985.

(c) Adjustments by the Secretary. If the Secretary deter mines that the levels of financial responsibility required by paragraph (a) or (b) of this section are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Secretary may adjust the level of financial responsibility required under paragraph (a) or (b) of this section as may be necessary to protect human health and the environment. This adjusted level will be based on the Secretary'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 Secretary 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 may require that an owner or operator of the facility comply with paragraph (b) of this section. An owner or operator must furnish to the Secretary, within a reasonable time, any information which the Secretary requests to determine whether cause exists for such adjustments of level or type of coverage. Any adjustment of the level or type of coverage for a facility that has a permit will be treated as a permit modification under §§122.15(a)(7)(iii) and 124.5 of these Regula tions.

(d) Period of coverage. An owner or operator must continuously provide liability coverage for a facility as required by this section until certifications of closure of the facility, as specified in §264.115, are received by the Secretary.

(e) Financial test for liability coverage. (1) An owner or operator may satisfy the requirements of this section by demonstrating that he passes a financial test as specified in this paragraph. To pass this test the owner or operator must meet the criteria of paragraph (f)(1)(i) or (f)(1)(ii):

(i) The owner or operator must have:

(A) Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

(B) Tangible net worth of at least $10 million; and

(C) Assets in the United States amounting to either: (1) at least 90 percent of his total assets; or (2) at least six times the amount of liabil ity coverage to be demonstrated by this test.

(ii) The owner or operator must have:

(A) A current rating for his 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; and

(B) Tangible net worth of at least $10 million; and

(C) Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

(D) Assets in the United States amounting to either: (1) at least 90 percent of his total assets; or (2) at least six times the amount of liabil ity coverage to be demonstrated by this test.

(2) The phrase "amount of liability coverage" as used in para graph (f)(1) of this section refers to the annual aggregate amounts for which coverage is required under paragraphs (a) and (b) of this section.

(3) To demonstrate that he meets this test, the owner or operator must submit the following three items to the Secretary:

(i) A letter signed by the owner's or operator's chief finan cial officer and worded as specified in §264.151(g). If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by §§264.143 (f), 264.145 (f), 265.143 (e), and 265.145 (e), and liability coverage, he must submit the letter specified in §264.151(g) to cover both forms of financial responsi bility; a separate letter as specified in §264.151(f) is not required.

(ii) A copy of the independent certified public accoun tant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year.

(iii) A special report from the owner's or operator's inde pendent certified public accountant to the owner or operator stating that:

(A) He 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

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

(4) An owner or operator of a new facility must submit the items specified in paragraph (f)(3) of this section to the Secretary at least 60 days before the date on which hazard ous waste is first received for treatment, storage, or disposal.

(5) After the initial submission of items specified in paragraph (f)(3) of this section, the owner or operator must send updated information to the Secretary within 90 days after the close of each succeed ing fiscal year. This information must consist of all three items specified in paragraph (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must obtain insurance for the entire amount of required liability coverage as specified in this section. Evidence of insurance must be submitted to the Secretary within 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.

(7) The Secretary may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see paragraph (f)(3)(ii) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Secretary will evaluate other qualifications on an individual basis. The owner or operator must provide evidence of insurance for the entire amount of required liability coverage as specified in this section within 30 days after notification of disallowance.

§264.148 Incapacity of owners or operators, guarantors, or financial institutions.

(a) An owner or operator must notify the Secretary by certified mail of the commencement of a voluntary or involuntary proceedings under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in §§264.143(f) and 264.145(f) must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (§264.151(h)).

(b) An owner or operator who fulfills the requirements of §§264.143, 264.145, or 264.147 by obtaining a trust fund, surety bond, letter of credit, or insurance policy will 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 issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

§§264.149 - 264.150 [Reserved]

§264.151 Wording of the instruments.

(a)(1) A trust agreement for a trust fund, as specified in §264.143(a) or §264.145(a) or §265.143(a) or §265.145(a) of these regulations, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator], a [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 DNREC, an agency of the State of Delaware, 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 will 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 such 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, Therefore, the Grantor and the Trustee agree as follow:

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 the Grantor.

(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 DNREC. 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. Such property and any other property subsequently transferred 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 adequancy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by DNREC.

Section 4. Payment for Closure and Post-Closure Care. The Trustee shall make payments from the Fund as the DNREC Secretary 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 DNREC Secretary from the Fund for closure and post-closure expenditures in such amounts as the DNREC Secretary shall direct in writing. In addition, the Trustee shall refund to the Grantor such amounts as the DNREC Secretary specifies in writing. Upon refund, such 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 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 duties with repect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such 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 or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of Trustee, to the extent insured by an agency of the Federal or 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 thereto, 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 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 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 grated;

(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 such secrities in a qualified central depositary even through, when so deposited, such securities may be merged and held in buld in the name of the nominee of such 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 such 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 or State 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 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the appropriate DNREC Secretary a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 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 90 days after the statement has been furnished to the Grantor and the DNREC Secretary 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 such 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 DNREC Secretary, and the present Trustee by certified mail 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 such persons as are designated in the attached Exhibit A or such other designees as 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 DNREC Secretary to the Trustee shall be in writing, signed by the DNREC Secretary and/or EPA Regional Administrators if the facilities are located outside the State, or their designees and the Trustee shall act and shall be fully protected in acting in accordance with such 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 DNREC hereunder has occurred. The Trustee shall have to no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or DNREC, except as provided for herein.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the Secretary or appropriate EPA Regional Administrator, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment or insufficient 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, the Secretary and the appropriate EPA Regional Administrator, or by the Trustee, the Secretary and the appropriate EPA Regional Administrator 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 DNREC Secretary, or by the Trustee and the DNREC Secretary, 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.

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 DNREC Secretary 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 State of Delaware.

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 Section 264.151(a)(1) as such regulations were constituted on the date first above written.

[Signature of Grantor]
[Title]

Attest:
[Title]
[Seal]
[Signature of Trustee]
Attest:
[Title]
[Seal]

(2) The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in §§264.143(a) and 264.145(a) or §265.143(a) or §265.145(a) of these Regulations. State requirements may differ on the proper content of this acknowledgement.

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 such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said 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 §264.143(b) or §264.145(b) or §265.143 or §265.145(b) of these Regulations, must be worded as follows, except that instructions in brackets are to be replaced with

the relevant information and the brackets deleted:

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 DNREC, 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 such 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 such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the State Statute, to have a permit or interim status in order to own or operate each hazardous waste management facility identified above, and

Whereas said 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 said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, 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 15 days after an order to begin closure is issued by the DNREC Secretary or a U.S. district court or other court competent jurisdiction,

Or, if the Principal shall provide alternate financial assurance, as specified in Subpart H of 40 CFR Parts 264 or 265, as applicable, and obtain the DNREC Secretary's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the DNREC Secretary from the Surety(ies), then this obligation shall be null and 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 DNREC Secretary 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 DNREC Secretary.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such 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 said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the DNREC Secretary provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the DNREC Secretary, as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies) provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the DNREC Secretary.

[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 20 percent in any one year, and no decrease in the penal sum, takes place without the written permission of the DNREC Secretary(s).

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 Part 264.151(b) as such 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 signatures, 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 §264.143(c) or §264.145(c), must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

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 DNREC, 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 such 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 such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required, under the State Statute, to have a permit in order to own or operate each hazardous waste management facility identified above, and

Whereas said Principal is required to provide financial assurance for closure, or closure and post-closure care as a condition of the permit, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide such financial assurance;

Now, Therefore, 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 such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations as such laws, statutes, rules, and regulations may be amended.

And, if the Principal shall faith fully 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 such plan and permit may be amended, pursuant to all applicable laws, statutes, rules, and regulations as such laws, statutes, rules, and regulations may be amended.

Or, if the Principal shall provide alternate financial assurance as specified in Subpart H of Part 264, and obtain the DNREC Secretary's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the DNREC Secretary from the Surety(ies), then this obligation shall be null and 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 DNREC Secretary that the Principal has been found in violation of the closure requirements of Part 264, 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 DNREC Secretary.

Upon notification by the DNREC Secretary that the Principal has been found in violation of the post-closure requirements of Part 264 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 in post-closure amount guaranteed for the facility into the standby trust fund as directed by the DNREC Secretary.

Upon notification by an DNREC Secretary that the Principal has failed to provide alternate financial assurance as specified in Subpart H of Part 264, and obtain written approval of such assurance from the DNREC Secretary during the 90 days following receipt by both the Principal and the DNREC Secretary 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 DNREC Secretary.

The surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no such amendment shall in any way alleviate its (their) obliga tion on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such 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 said 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 DNREC Secretary provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the DNREC Secretary as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the DNREC Secretary.

[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 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the DNREC Secretary.

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) that the wording of this surety bond is identical to the wording specified in Section 264.151(c) as such 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 signa ture(s), corporate seal, and other information in the same manner as for Surety above.]

Bond premium: $ ----------

(d) A letter of credit as specified in §264.143(d) or §264.145(d) or §265.143(c) or §265.145(c) of these Regulations, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

Regional Administrator(s)/Secretary
State of Delaware and/or Region(s)

U. S. Environmental Protection Agency

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 [insert, if other than the Secretary is a beneficiary, "by any one of you"] 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 [State Statute]."

This letter of credit is effective as of [date] and shall expire on [date at least 1 year later], but such expiration date shall be automatically extended for a period of [at least 1 year] on [date] and on each successive expiration date, unless at least 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 signt draft for 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 such 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 Section 264.151(d) as such 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 by the International Chamber of Commerce," or "the Uniform Commercial Code"].

(4) A certificate of insurance as specified in 264.143(e) or 264.145(e) or 265.143(d) or 265.145(d) of these Regulations, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

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 must 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 such policy conforms in all respects with the requirements of Sections 264.143(e), 264.145(e), 265.143(d), and 265.145(d) as applicable and as such regulations were constituted on the date shown immediately below. It is agreed that any provision of the policy inconsistent with such regulations is hereby amended to eliminate such inconsistency.

Whenever requested by the DNREC Secretary of the State of Delaware, the Insurer agrees to furnish to the DNREC Secretary 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 Section 264.151(e) as such 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 §§264.143(f) or 264.145(f) or 265.143(e) or 265.145(e) of these Regulations, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

LETTER FROM CHIEF FINANCIAL OFFICER

[Address to the DNREC Secretary and/or Regional Administrator(s) of every Region in which facilities for which financial responsibility is to be demonstrated through the financial test are located.]

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 as specified in Subpart H of Parts 264 and 265.

[Fill out the following four 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 for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Subpart H of Parts 264 and 265. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: ----.

2. This firm guarantees, through the corporate guarantee specified in Subpart H of Parts 264 and 265, the closure or post-closure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: ----.

3. In States where DNREC or EPA is not administering the financial requirements of Subpart H of Parts 264 and 265, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Subpart H of Parts 264 and 265. The current closure and/or post-closure cost estimates covered by such a 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, if a disposal facility, post-closure care, is not demonstrated either to EPA or the State through the financial test, or any other financial assurance mechanism specified in Subpart H of Parts 264 and 265 or equivalent or substantially equivalent EPA or other State mechanisms. The current closure and/or post-closure cost estimates not covered by such 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 paragraph (f)(1)(i) of §§264.143 or 264.145, or of paragraph (e)(1)(i) of §§265.143 or 265.145 of these Regulations are used. Fill in Alternative II if the criteria of paragraph (f)(1)(ii) of §§264.143 or 264.145, or of paragraph (e)(1)(ii) of §§ 265.143 or 265.145 of these Regulations are used.]

ALTERNATIVE I

1. Sum of current closure and post-closure cost estimates [total of all cost estimates shown in the four paragraphs 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 90% of firm's assets are located in the U. S.).....

	Yes	No
10. Is line 3 at least $10 million?.....		
11. Is line 3 at least 6 times line 1?.....		
12. Is line 7 at least 6 times line 1?.....		
*13. Are at least 90% of firm's assets located in the U. S.? If not, complete line 14.....		
14. Is line 9 at least 6 times line 1?.....		
15. Is line 2 divided by line 4 less than 2.0?.....		
16. Is line 8 divided by line 2 greater than 0.1?.....		
17. Is line 5 divided by line 6 greater than 1.5?.....		

ALTERNATIVE II

1. Sum of current closure and post-closure cost estimates [total of all cost estimates shown in the four paragraphs above]..... $----
2. Current bond rating of most recent insurance 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 the amount of that portion to this line].....	$----
*6. Total assets in U. S. (required only if less than 90% of firm's assets are located in the U. S.).....	$----

	Yes	No
7. Is line 5 at least $10 million?.....	--	--
8. Is line 5 at least 6 times line 1?.....	--	--
*9. Are at least 90% of firm's assets located in the U. S.? If not, complete line 10.....	--	--
10. Is line 6 at least 6 times line 1?.....	--	--

I hereby certify that the wording of this letter is identical to the wording specified in Section 264.151(f) as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

(g) A letter from the chief financial officer as specified in §§264.147(f) or 265.147(f) of these Regulations, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted;

Letter from Chief Financial Officer (to demonstrate liability coverage or to demonstrate both liability coverage and assurance of closure or post-closure care).

[Address to the DNREC Secretary and Regional Administrator(s) of every EPA Region(s) in which facilities for which financial responsibility is to be demonstrated through the financial test are located.]

I am the chief financial officer of [owner's or operator'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 Subpart H of Parts 264 and 265.

[Fill out the following paragraph regarding facilities and liability coverage. For each facility, include its EPA Identification Number, name, and address.]

The owner or operator identified above is the owner or operator of the following facilities for which liability coverage is being demonstrated through the financial test specified in Subpart H of Parts 264 and 265: -----.

[If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following four 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 owner or operator identified above owns or operates the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in Subpart H of Parts 264 and 265. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: -----.

2. The owner or operator identified above guarantees, through the corporate guarantee specified in Subpart H of Parts 264 and 265, the closure and post-closure care of the following facilities owned or operated by its subsidiaries. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: -----

3. In States where this State or EPA is not administering the financial requirements of Subpart H of Parts 264 and 265, this owner or operator is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Subpart H of Parts 264 and 265. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility: -----

4. The owner or operator identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is <u>not</u> demonstrated or this State through the financial test or any other financial assurance mechanism specified in Subpart H of Parts 264 and 265 or equivalent or substantially equivalent EPA or other State mechanisms. The current closure and/or post-closure cost estimates not covered by such fiancial assurance are shown for each facility: -----.

This owner or operator [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 owner or operator ends on [month, day]. The figures for the following items marked with an asterisk are derived from this owner's or operator's independently audited, year-end financial statements for the latest completed fiscal year, ended [date].

[Fill in part A if you are using the financial test to demonstrate coverage only for the liability requirements.]

Part A. Liability Coverage for Accidental Occurrences

[Fill in Alternative I if the criteria of paragraph (f)(1)(i) of §§264.147 or 265.147 are used. Fill in Alternative II if the criteria of paragraph (f)(1)(ii) of §§264.147 or 265.147 are used.]

ALTERNATIVE I

1. Amount of annual aggregate liability coverage to be demonstrated	$------	
*2. Current assets	$------	
*3. Current liabilities	$------	
4. Net working capital (line 2 minus line 3)	$------	
*5. Tangible net worth	$------	
*6. If less than 90% of assets are located in the U. S., give total U. S. assets	$------	
	YES	NO
7. Is line 5 at least $10 million?	--	--
8. Is line 4 at least 6 times line 1?	--	--
9. Is line 5 at least 6 times line 1?	--	--
*10. Are at least 90% of assets located in the U. S.? If not, complete line 11.	--	--
11. Is line 6 at least 6 times line 1?	--	--

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 bonds	------
4. Date of maturity of bond	------
*5. Tangible net worth	$------
*6. Total assets in U. S. (required only if less than 90% of assets are located in the U. S.)	$------
	YES NO
7. Is line 5 at least $10 million?	-- --
8. Is line 5 at least 6 times line 1?	-- --
*9. Are at least 90% of assets located in the U. S.? If not, complete line 10.	-- --
10. Is line 6 at least 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 paragraphs (f)(1)(i) of §§264.143 or 264.145 and (f)(1)(i) of §264.147 are used or if the criteria of paragraphs (e)(1)(i) of §265.143 or §264.145 and (f)(1)(i) of §265.147 are used. Fill in Alternative II if the criteria of paragraphs (f)(1)(ii) of §§264.143 or 264.145 and (f)(1)(ii) of §264.147 are used or if the criteria of paragraphs (e)(1)(ii) of §265.143 or §265.145 and (f)(1)(ii) of §265.147 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 90% of assets are located in the U. S.)	$------
	YES NO
12. Is line 5 at least $10 million?	-- --
13. Is line 5 at least 6 times line 3?	-- --
14. Is line 9 at least 6 times line 3?	-- --
*15. Are at least 90% of firm's assets located in the U. S.? If not, complete line 16	-- --
16. Is line 11 at least 6 times line 3?	-- --
17. Is line 4 divided by line 6 less than 2.0?	-- --
18. Is line 10 divided by line 4 greater than 0.1?	-- --
19. Is line 7 divided by line 8 greater than 1.5?	-- --

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 90% of assets are located in the U. S.)	$------	
	YES	NO
9. Is line 7 at least $10 million?	--	--
10. Is line 7 at least 6 times line 3?	--	--
*11. Are at least 90% of assets located in the U. S.? If not, complete line 12	--	--
12. Is line 8 at least 6 times line 3?	--	--

I hereby certify that the wording of this letter is identical to the wording specified in Section 264.151(g) as such regulations were constituted on the date shown immediately below.

[Signature]
[Name]
[Title]
[Date]

(h) A corporate guarantee as specified in §264.143(f) or §264.145(f) or §265.143(e) or §265.145(e) of these Regulations must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

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 State of Delaware, herein referred to as guarantor, to the DNREC, obligee, on behalf of our subsidiary [owner or operator] of [business address].

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in §§264.143(f), 264.145(f), 265.143(e), and 265.145(e).

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 Subpart G of Parts 264 and 265 for the closure and post-closure care of facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to DNREC 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 Subpart H of Parts 264 or 265 as applicable, in the name of [owner or operator] in the amount of the current closure or post-closure cost estimates as specified in Subpart H of Parts 264 and 265.

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 90 days, by certified mail, notice to the DNREC Secretary and to [owner or operator] that he intends to provide alternate financial assurance as specified in Subpart H of Parts 264 or 265 as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the DNREC Secretary by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U. S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the DNREC Secretary of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in Subpart H of Parts 264 or 265 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 Parts 264 or 265 of these Regulations.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of Subpart H of Parts 264 and 265 for the above-listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the DNREC Secretary and to [owner or operator], such cancellation to become effective no earlier than 120 days after receipt of such notice by both DNREC and [owner or operator] as evidenced by the return receipts.

10. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in Subpart H of Parts 264 or 265 as applicable, and obtain written approval of such assurance from the DNREC Director within 90 days after a notice of cancellation by the guarantor is received by a DNREC Secretary from guarantor, guarantor shall provide such alternate financial assurance in the name of [owner or operator].

11. Guarantor expressly waives notice of acceptance of this guarantee by the DNREC 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 Section 264.151(h) as such 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: ------

(i) A hazardous waste facility liability endorsement as required in §§264.147 or 265.147 must be worded as follows, except that

instructions in brackets are to be replaced with the relevant information and the brackets deleted:

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 §§264.147 or 265.147. 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, for each facility covered by this endorsement.

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 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 §§264.147(f) or 265.147(f).

(c) Whenever requested by the Director of the DNREC, 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 or the insured, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the Director of DNREC.

(e) Any other termination of this endorsement will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Director of DNREC.

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 §264.151(i) as such 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]

(j) A certificate of liability insurance as required in §264.147 or §265.147 must be worded as follows, except that the instructions in brackets are to be replaced with the relevant information and the brackets deleted:

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 §§264.147 or 265.147. 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 for each facility covered by this certificate], exclusive of legal defense costs. The coverage is provided under policy number---, issued on [date]. The effective date of said 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 Insurer of its obligations under the policy.

(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 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 §§264.147(f) or 265.147(f).

(c) Whenever requested by the Director of DNREC, 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 or the insured, will be effective only upon written notice and only after the expiration of sixty (60) days after a copy of such written notice is received by the Director.

(e) Any other termination of the insurance will be effective only upon written notice and only after the expiration of thirty (30) days after a copy of such written notice is received by the Director.

I hereby certify that the wording of this endorsement is identical to the wording specified in §264.151(j) as such 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]

Subpart I - Use and Management of Containers

§264.170 Applicability.

The regulations in this subpart apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as §264.1 provides otherwise.
[Comment: Under §261.7 and §261.33(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 §261.7. In that event, management of the container is exempt from the requirements of this Subpart.]

§264.171 Condition of containers.

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

§264.172 Compatibility of waste with containers.

The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

§264.173 Management of containers.

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

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

[Comment: Reuse of containers in transportation is govered by U. S. Department of Transportation regulations including those set forth in 49 CFR 173.28.]

§264.174 Inspections.

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

[Comment: See 264.15(c) and 264.171 for remedial action required if deterioration or leaks are detected.]

§264.175 Containment.

(a) Container storage areas must have a containment system that is designed and operated in accordance with paragraph (b) of this section, except as otherwise provided by paragraph (c) of this section.

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

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

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

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

(4) Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in paragraph (b)(3) of this section to contain any run-on which might enter the system; and

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

[Comment: If the collected material is a hazardous waste under Part 261 of these Regulations, it must be managed as a hazardous waste in accordance with all applicable requirements of Parts 262-265 of these Regulations. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of Section 402 of the Clean Water Act as amended.]

(c) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by paragraph (b) of this section, provided that:

(1) The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or

(2) The containers are elevated or are otherwise protected from contact with accumulated liquid.

§264.176 Special requirements for ignitable or reactive waste.

Containers holding ignitiable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

[Comment: See §264.17(a) for additional requirements.]

§264.177 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials (see Appendix V for examples), must not be placed in the same container, unless §264.17(b) is complied with.

(b) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material.

[Comment: As required by §264.13, the waste analysis plan must include analyses needed to comply with §264.177. Also, §264.17(c) requires wastes analyses, trial tests or other documentation to assure compliance with §264.17(b). As required by §264.73, the owner or operator must place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.]

(c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

[Comment: The purpose of this Section is to prevent fires, explosions, gaseous emission, leaching, or other discharge of hazardous waste or hazardous waste constitutents which could result from the mixing of incompatible wastes or materials if containers break or leak.]

§264.178 Closure.

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

[Comment: At closure as throughout the operating period, unless the owner or operator can demonstrate in accordance with §261.3(d) of these Regulations 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 must manage it in accordance with all applicable requirements of Parts 262-265 of these Regulations].

Subpart J-Tanks

§264.190 Applicability.

(a) The regulations in the Subpart apply to owners and operators of facilities that use tanks to treat or store hazardous waste, except as §264.1 and paragraph (b) of this Section provide otherwise;

(b) Underground tanks that cannot be entered for inspection are prohibited.

§264.191 Design of tanks.

(a) Tanks must have sufficient shell and, for closed tanks, pressure controls (e.g., vents) to assure that they do not collapse or rupture. The Secretary will review the design of the tanks, including the foundation, structural support, seams and pressure controls. The Secretary shall require that a minimum shell thickness be maintained at all times to ensure sufficient shell strength. Factors to be considered in establishing minimum thickness include the width, height, and materials of construction of the tank, and the specific gravity of the waste which will be placed in the tank. In reviewing the design of the tank and establishing a minimum thickness, the Secretary shall rely upon appropriate industrial design standards and other available information.

§264.192 General operating requirements.

(a) Wastes and other materials (e.g., treatment reagents) which are incompatible with the material of construction of the tank must not be placed in the tank unless the tank is protected from accelerated corrosion, erosion, or abrasion through the use of:

(1) An inner liner or coating which is compatible with the waste or material and which is free of leaks, cracks, holes or other deterioration; or

(2) Alternative means of protection (e.g., cathodic protection or corrosion inhibitors).

(b) The owner or operator must use appropriate controls and practices to prevent overfilling. These must include:

(1) Controls to prevent overfilling (e.g, waste feed cutoff system or bypass system to a standby tank); and

(2) For uncovered tanks, maintenance of sufficient freeboard to prevent overtopping by wave or wind action or by precipitation.

§264.193 [Reserved]

§264.194 Inspections.

(a) The owner or operator must inspect:

(1) Overfilling control equipment (e.g., waste feed cut-off systems and by-pass systems) at least once each operating day to ensure that it is in good working order;

(2) Data gathered from monitoring equipment (e.g., pressure and temperature gauges) where present, at least once each operating day to ensure that the tank is being operated according to its design;

(3) For uncovered tanks, the level of waste in the tank, at least once each operating day, to ensure compliance with §264.192(b)(2);

(4) The construction materials of the above-ground portions of the tank, at least weekly to detect

corrosion or erosion and leaking of fixtures and seams; and

(5) The area immediately surrounding the tank, at least weekly, to detect obvious signs of leakage (e.g., wet spots or dead vegetation).

(b) As part of the inspection schedule required in §264.15(b) and in addition to the specific requirements of paragraph (a) of this section, the owner or operator must develop a schedule and procedure for assessing the condition of the tank. The schedule and procedure must be adequate to detect cracks, leaks, corrosion or erosion which may lead to cracks or leaks, or wall thinning to less than the thickness required under §264.191. Procedures for emptying a tank to allow entry and inspection of the interior must be established when necessary to detect corrosion or erosion of the tank sides and bottom. The frequency of these assessments must be based on the material of construction of the tank, type of corrosion or erosion, protection used, rate of corrosion or erosion observed during previous inspection, and the characteristics of the waste being treated or stored.

(c) As part of the contingency plan required under Subpart D of Part 264, the owner or operator must specify the procedures he intends to use to respond to tank spills or leakage, including procedures and timing for expeditious removal of leaked or spilled waste and repair of the tank.

[Comment: As required in §264.15(c), the owner or operator must remedy any leak, crack, or wall thinning in violation of §264.191, or equipment or process malfunction in violation of §264.192, which he discovers during inspection. See 29 CFR 1910.94(d)(11) for Occupational Safety and Health Administration requirements relating to entry of tanks for inspection.]

§§264.195 - 264.196 [Reserved]

§264.197 Closure.

At closure, all hazardous waste and hazardous waste residues must be removed from tanks, discharged control equipment, and discharged confinement structures.

[Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with §261.3(d) of these Regulations that the solid waste removed from his tank is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Parts 262-265 of these Regulations.]

§264.198 Special requirements for ignitable or reactive wastes.

(a) Ignitable or reactive waste must not be placed in a tank unless:

(1) The waste is treated, rendered, or mixed before or immediately after placement in the tank so that (i) the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under §§261.21 or 261.23 of these Regulations, and (ii) §264.17(b) is complied with; or

(2) The waste is stored or treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react; or

(3) The tank is used solely for emergencies.

(b) The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks contained 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 260.11).

§264.199 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank, unless §264.17(b) is complied with.

(b) Hazardous waste must not be placed in an unwashed tank which previously held incompatible waste or material, unless §264.17(b) is complied with.

[Comment: As required by §264.13, the waste analysis plan must include analyses needed to comply with §264.199. Also, §264.17(c) requires waste analyses, trial tests, or other documentation to ensure compliance with §264.17(b). As required by §264.73, the owner or operator must place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.]

Subpart K - Surface Impoundments

§264.220 Applicability.

The regulations in this subpart apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste except as §264.1 provide otherwise.

§264.221 Design and operating requirements

(a) A surface impoundment (except for an existing portion of a surface impoundment) must have a liner that is designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or groundwater or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with §264.228(a)(1). For impoundments that will be closed in accordance with §264.228(a)(2), the liner must be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner must be:

(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.

(b) The owner or operator will be exempted from the requirements of paragraph (a) of this section if the Secretary 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 §264.93) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Secretary will 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 attenuative capacity and thickness of the liners and soils present between the impoundment and groundwater or surface water; and

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

(c) A surface impoundment must be designed, constructed, maintained, and operated to prevent overtopping resulting from normal or abnormal operations; overfilling; wind and wave action; rainfall; run-on; malfunctions of level controllers, alarms, and other equipment; and human error.

(d) A surface impoundment must have dikes that are designed, constructed, and maintained with sufficient structural integrity to

prevent massive failure of the dikes. In ensuring structural integrity, it must not be presumed that the liner system will function without leakage during the active life of the unit.

(e) The Secretary will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

§264.222-264.225 [Reserved]

§264.226 Monitoring and inspection.

(a) During construction and installation, liners [except in the case of existing portions of surface impoundments exempt from 264.221(a)] and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

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

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

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

(1) Deterioration, malfunctions, or improper operation of overtopping control systems;

(2) Sudden drops in the level of the impoundment's contents; and

(3) Severe erosion or other signs of deterioration in dikes or other containment devices.

(c) Prior to the issuance of a permit, and after any extended period of time (at least six months) during which the impoundment was not in service, the owner or operator must obtain a certification from a qualified engineer that the impoundment's dike, including that portion of any dike which provides freeboard, has structural integrity. The certification must establish, in particular, that the dike:

(1) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the impoundment; and

(2) Will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

§264.227 Emergency repairs; contingency plans.

(a) A surface impoundment must be removed from service in accordance with paragraph (b) of this section when:

(1) The level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment; or

(2) The dike leaks.

(b) When a surface impoundment must be removed from service as required by paragraph (a) of this section, the owner or operator must:

(1) Immediately shut off the flow or stop the addition of wastes into the impoundment;

(2) Immediately contain any surface leakage which has occurred or is occurring;

(3) Immediately stop the leak;

(4) Take any other necessary steps to stop or prevent catastrophic failure;

(5) If a leak cannot be stopped by any other means, empty the impoundment; and

(6) Notify the Secretary of the problem in writing within seven days after detecting the problem.

(c) As part of the contingency plan required in Subpart D of this part, the owner or operator must specify a procedure for complying with the requirements of paragraph (b) of this section.

(d) No surface impoundment that has been removed from service in accordance with the requirements of this section may be restored to service unless the portion of the impoundment which was failing is repaired and the following steps are taken:

(1) If the impoundment was removed from service as the result of actual or imminent dike failure, the dike's structural integrity must be recertified in accordance with §264.226(c).

(2) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:

(i) For any existing portion of the impoundment, a liner must be installed in compliance with §§264.221(a); and

(ii) For any other portion of the impoundment, the repaired liner system must be certified by a qualified engineer as meeting the design specifications approved in the permit.

(e) A surface impoundment that has been removed from service in accordance with the requirements of this section and that is not being repaired must be closed in accordance with the provisions of §264.228.

§264.228 Closure and post-closure care.

(a) At closure, the owner or operator must:

(1) Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless §261.3 (d) of these regulations applies; or

(2)(i) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(ii) Stabilize remaining wastes to a bearing capacity sufficient to support final cover; and

(iii) Cover the surface impoundment with a final cover designed and constructed to:

(A) Provide long-term minimization of the migration of liquids through the closed impoundment;

(B) Function with minimum maintenance;

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

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

(E) Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(b) If some waste residues or contaminated materials are left in place at final closure, the owner or operator must comply with all post-closure requirements contained in §§264.117-264.120, including maintenance and monitoring throughout the post-closure care period (specified in the permit under §264.117). The owner or operator must:

(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) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Subpart F of this part; and

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

(c)(1) If an owner or operator fails to close a surface impoundment in accordance with paragraph (a)(1) of this section, and the impoundment does not comply with the liner requirements of §264.221(a) and is not exempt from them in accordance with §264.221(b), then:

(i) The closure plan for the impoundment under §264.112 must include both a plan for complying with paragraph (a)(1) of this section and a contingent plan for complying with paragraph (a)(2) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(ii) The owner or operator must prepare a contingent post-closure plan under §264.118 for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under §264.142 and §264.144 for closure and post-closure care of an impoundment subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under paragraph (a)(1) of this section.

§264.229 Special requirements for ignitable or reactive waste.

Ignitable or reactive waste must not be placed in a surface impoundment, unless:

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

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under §§261.21 or 261.23 of these regulations; and

(2) Section 264.17(b) is complied with; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; or

(c) The surface impoundment is used solely for emergencies.

§264.230 Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this part for examples) must not be placed in the same surface impoundment, unless §264.17(b) is complied with.

§264.231-264.249 [Reserved]

Subpart L - Waste Piles

§264.250 Applicability.

(a) The regulations in this subpart apply to owners and operators of facilities that store or treat hazardous waste in piles, except as §264.1 provides otherwise.

(b) The regulations in this subpart do not apply to owners or operators of waste piles that are closed with wastes left in place. Such waste piles are subject to regulation under Subpart N of this Part (Landfills).

(c) The owner or operator of any waste pile that is inside or under a structure that provides protection from precipitation so that neither run-off nor leachate is generated is not subject to regulation under §264.251 and those requirements of Subpart F that the Secretary determines not to be necessary, provided that:

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

(2) The pile is protect ed from surface water run-on by the structure or in some other manner;

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

(4) The pile will not generate leachate through decomposi tion or other reactions.

§264.251 Design and operating requirements.

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

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

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

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

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

(2) A leachate collection and removal system immediately above the liner that is designed, construct ed, maintained, and operated to collect and remove leachate from the pile. The Secretary will specify

design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must be:

(i) Constructed of materials that are:

(A) Chemically resistent 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

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

(b) The owner of operator will be exempted from the requirements of paragraph (a) of this section if the Secretary 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 §264.93) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Secretary will consider:

(1) The nature and quantity of the wastes;

(2) The proposed alternate design and operation;

(3) 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

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

(c) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the pile during peak discharge from at least a 25-year storm.

(d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(e) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(f) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the pile to control wind dispersal.

(g) The Secretary will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

§264.252 - 264.253 [Reserved]

§264.254 Monitoring and inspection.

(a) During construction or installation, liners [except in the case of existing portions of piles exempt from §264.251(a)] and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

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

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

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

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

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

(3) The presence of leachate in and proper functioning of leachate collection and removal system, where present.

§264.255 [Reserved]

§264.256 Special requirements for ignitable or reactive waste.

Ignitable or reactive waste must not be placed in a waste pile unless:

(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 §§261.21 or 261.23 of these regulations; and

(2) Section 264.17(b) is complied with; or

(b) The waste is managed in such as way that is protected from any material or conditions which may cause it to ignite or react.

§264.257 Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this part for examples) must not be placed in the same pile, unless §264.17(b) is complied with.

(b) A pile of hazardous waste that is incompatible with any waste or other material stored nearby in containers, other piles, open tanks, or surface impoundments must be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

(c) Hazardous waste must not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with §264.17(b).

§264.258 Closure and post-closure care.

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless §261.3(d) of these regulations applies.

(b) 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 paragraph (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated,

he must close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (§264.310).

(c)(1) The owner or operator of a waste pile that does not comply with the liner requirements of 264.251(a)(1) and is not exempt from them in accordance with §§264.250(c) or 264.251(b), must:

(i) Include in the closure plan for the pile under §264.112 both a plan for complying with paragraph (a) of this section and a contingent plan for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(ii) Prepare a contingent post-closure plan under §264.118 for complying with paragraph (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) In cost estimates calculated under §264.142 and 264.144 for closure and post-closure care of a pile subject to this paragraph must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under paragraph (a) of this section.

§264.259-264.269 [Reserved]

Subpart M - Land Treatment

§264.270 Applicability.

The regulations in this subpart apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as §264.1 provides otherwise.

§264.271 Treatment program.

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

(1) The wastes that are capable of being treated at the unit based on a demonstration under §264.272;

(2) Design measures and operating practices necessary to maximize the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with §264.273(a); and

(3) Unsaturated zone monitoring provisions meeting the requirements of §264.278.

(b) The Secretary will specify in the facility permit the hazardous constituents that must be degraded, transformed, or immobilized under this subpart. Hazardous constituents are constituents identified in Appendix VIII of Part 261 of these regulations that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

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

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

(2) More than 1 meter (3 feet) above the seasonal high water table.

§264.272 Treatment demonstration.

(a) For each waste that will be applied to the treatment zone, the owner or operator must demonstrate, prior to application of the waste, that hazardous constituents in the waste can be completely degraded, transformed, or immobilized in the treatment zone.

(b) In making this demonstration, the owner or operator may use field tests, laboratory analyses, available data, or in the case of existing units, operating data. If the owner or operator intends to conduct field tests or laboratory analyses in order to make the demonstration required under paragraph (a) of this section, he must obtain a treatment or disposal permit under §122.27(c). The Secretary will specify in this permit the testing, analytical, design, and operating requirements (including the duration of the tests and analyses, and in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring proced ures, closure and clean-up activities) necessary to meet the requirements in paragraph (c) of this section.

(c) Any field test or laboratory analysis conducted in order to make a demonstration under paragraph (a) of this section must:

(1) Accurately simulate the characteristics and operating condi tions for the proposed land treatment unit including:

(i) The characteristics of the waste (including the presence of Appendix VIII of Part 261 of these regulations constituents);

(ii) The climate in the area;

(iii) The topography of the surrounding area;

(iv) The characteristics of the soil in the treatment zone (including depth); and

(v) The operating practices to be used at the unit.

(2) Be likely to show that hazardous constituents in the waste to be tested will be completely degraded, transformed, or immobilized in the treatment zone of the proposed land treatment unit; and

(3) Be conducted in a manner that protects human health and the environment considering:

(i) The characteristics of the waste to be tested;

(ii) The operating and monitoring measures taken during the course of the test;

(iii) The duration of the test;

(iv) The volume of waste used in the test;

(v) In the case of field tests, the potential for migration of hazardous constituents to ground water or surface water.

§264.273 Design and operating requirements.

The Secretary will specify in the facility permit how the owner or operator will design, construct, operate, and maintain the land treatment unit in compliance with this section.

(a) The owner or operator must design, construct, operate, and maintain the unit to maximize the degradation, transformation, and immobilization of hazardous constit uents in the treatment zone. The owner or operator must design,

construct, operate, and maintain the unit in accord with all design and operating conditions that were used in the treatment demonstration under §264.272. At a minimum, the Secretary will specify the following in the facility permit:

(1) The rate and method of waste application to the treatment zone;

(2) Measures to control soil pH;

(3) Measures to enhance microbial or chemical reactions (e.g., fertilization, tilling); and

(4) Measures to control the moisture content of the treatment zone.

(b) The owner or operator must design, construct, operate, and maintain the treatment zone to minimize run-off of hazardous constituents during the active life of the land treatment unit.

(c) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the treatment zone during peak discharge from at least a 25-year storm.

(d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(e) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain the design capacity of the system.

(f) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

(g) The owner or operator must inspect the unit weekly and after storms to detect evidence of:

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

(2) Improper functioning of wind dispersal control measures.

§264.274-264.275 [Reserved]

§264.276 Food-chain crops.

The Secretary may allow the growth of food-chain crops in or on the treatment zone only if the owner or operator satisfies the conditions of this section. The Secretary will specify in the facility permit the specific food-chain crops which may be grown.

(a)(1) The owner or operator must demonstrate that there is no substantial risk to human health caused by the growth of such crops in or on the treatment zone by demonstrating, prior to the planting of such crops, that hazardous constituents other than cadmium:

(i) Will not be transferred to the food or feed portions of the crop by plant uptake or direct contact, and will not otherwise be ingested by food-chain animals (e.g., by grazing); or

(ii) Will not occur in greater concentration in or on the food or feed portions of crops grown on the treatment zone than in or on identical portions of the same crops grown on untreated soils under similar conditions in the same region.

(2) The owner or operator must make the demonstration required under this paragraph prior to the planting of crops at the facility for all constituents identified in Appendix VIII of Part 261 of these regulations that are reasonably expected to be in, or derived from, waste placed in or on the treatment zone.

(3) In making a demonstration under this paragraph, the owner or operator may use field tests, greenhouse studies, available data, or in the case of existing units, operating data, and must:

(i) Base the demonstration on conditions similar to those present in the treatment zone, includes soil characteristics (e.g., pH, cation exchange capacity), specific wastes, application rates, application methods, and crops to be grown; and

(ii) Describe the procedures used in conducting any tests, including the sample selection criteria, sample size, analytical methods, and statistical procedures.

(4) If the owner or operator intends to conduct field tests or greenhouse studies in order to make the demonstration required under this paragraph, he must obtain a permit for conducting such activities.

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

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

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

Time Period	Annual Cd application rate (kilograms per hectare)
Present to June 30, 1984.....	2.0
July 1, 1984 to Dec. 31, 1986..	1.25
Beginning Jan. 1, 1987.....	0.5

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

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

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

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

(iii) There must be an operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The operating plan must describe the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses; and

(iv) Future property owners must be notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food-chain crops must not be grown except in compliance with paragraph (b)(2) of this section.

§264.277 [Reserved]

§264.278 Unsaturated zone monitoring.

An owner or operator subject to this subpart must establish an unsaturated zone monitoring program to discharge the following responsibilities:

(a) The owner or operator must monitor the soil and soil-pore liquid to determine whether hazardous constituents migrate out of the treatment zone.

(1) The Secretary will specify the hazardous constituents to be monitored in the facility permit. The hazardous constituents to be monitored are those specified under 264.271 (b).

(2) The Secretary may require monitoring for principal hazardous constituents (PHCs) in lieu of the constituents specified under §264.271(b). PHCs are hazardous constituents contained in the wastes to be applied at the unit that are the most difficult to treat, considering the combined effects of degradation, transformation, and immobilization. The Secretary will establish PHCs if he finds, based on waste analyses, treatment demonstrations, or other data, that effective degradation, transformation, or immobilization of the PHCs will assure treatment at at least equivalent levels for the other hazardous constituents in the wastes.

(b) The owner or operator must install an unsaturated zone monitoring system that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters. The unsaturated zone monitoring system must consist of a sufficient number of sampling points at appropriate locations and depths to yield samples that:

(1) Represent the quality of background soil-pore liquid quality and the chemical make-up of soil that has not been affected by leakage from the treatment zone; and

(2) Indicate the quality of soil-pore liquid and the chemical make-up of the soil below the treatment zone.

(c) The owner or operator must establish a background value for each hazardous constituent to be monitored under paragraph (a) of this section. The permit will specify the background values for each constituent or specify the procedures to be used to calculate the background values.

(1) Background soil values may be based on a one-time sampling at a background plot having characteristics similar to those of the treatment zone.

(2) Background soil-pore liquid values must be based on at least quarterly sampling for one year at a background plot having characteristics similar to those of the treatment zone.

(3) The owner or operator must express all background values in a form necessary for the determination of statistically significant increases under paragraph (f) of this section.

(4) In taking samples used in the determination of all background values, the owner or operator must use an unsaturated zone monitoring system that complies with paragraph (b)(1) of this section.

(d) The owner or operator must conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The Secretary will specify the fre quency and timing of soil and soil-pore liquid monitor ing in the facility permit after considering the frequency, timing, and rate of waste application, and the soil permeability. The owner or operator must express the results of soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under paragraph (f) of this section.

(e) The owner or operator must use consistent sampling and analysis procedures that are designed to ensure sampling results that provide a reliable indication of soil-pore liquid quality and the chemical make-up of the soil below the treatment zone. At a minimum, the owner or operator must implement procedures and techniques for:

(1) Sample collection;

(2) Sample preservation and shipment;

(3) Analytical procedures; and

(4) Chain of custody control.

(f) The owner or operator must determine whether there is a statistically significant change over background values for any hazardous constituent to be monitored under paragraph (a) of this section below the treatment zone each time he conducts soil monitoring and soil-pore liquid monitoring under paragraph (d) of this section.

(1) In determining whether a statistically significant increase has occurred, the owner or operator must compare the value of each constituent, as determined under paragraph (d) of this section, to the background value for that constituent according to the statistical procedure specified in the facility permit under this paragraph.

(2) The owner or operator must determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after comple tion of sampling. The Secretary will specify that time period in the facility permit after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of soil and soil-pore liquid samples.

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

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

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

(g) If the owner or operator determines, pursuant to paragraph (f) of this section, that there is a statistically significant increase of hazardous constituents below the treatment zone, he must:

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

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

(h) If the owner or operator determines, pursuant to paragraph (f) of this section, that there is a statistically significant increase of hazardous constituents below the treatment zone, he may demonstrate that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. While the owner or operator may make a demonstration under this paragraph in addition to, or in lieu of, submitting a permit modification application under paragraph (g)(2) of this section, he is not relieved of the requirement to submit a permit modification application within the time specified in paragraph (g)(2) of this section unless the demonstration made under this paragraph successfully shows that a source other than regulated units caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. In making a demonstration under this paragraph, the owner or operator must:

(1) Notify the Secretary in writing within seven days of determining a statistically significant increase below the treatment zone that he intends to make a determination under this paragraph;

(2) Within 90 days, submit a report to the Secretary demonstrating that a source other than the regulated units caused the increase or that the increase resulted from error in sampling, analysis, or evaluation;

(3) Within 90 days, submit to the Secretary an application for a permit modification to make any appropriate changes to the unsaturated zone monitoring program at the facility; and

(4) Continue to monitor in accordance with the unsaturated zone monitoring program established under this section.

§264.279 Recordkeeping.

The owner or operator must include hazardous waste application dates and rates in the operating record required under §264.73.

§264.280 Closure and post-closure care.

(a) During the closure period the owner or operator must:

(1) Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of hazardous constituents within the treatment zone as required under §264.273(a), except to the extent such measures are inconsistent with paragraph(a)(8) of this section.

(2) Continue all operations in the treatment zone to minimize run-off of hazardous constituents as required under §264.273(b);

(3) Maintain the run-on control system required under §264.273(c);

(4) Maintain the run-off management system required under §264.273(d);

(5) Control wind dispersal of hazardous waste if required under §264.273(f);

(6) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under §264.276;

(7) Continue unsaturated zone monitoring in compliance with §264.278, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone; and

(8) Establish a vegetative cover on the portion of the facility being closed at such time that the cover will not substantially impede degradation, transformation, or immobilization of hazardous constituents in the treatment zone. The vegetative cover must be capable of maintaining growth without extensive maintenance.

(b) For the purpose of complying with §264.115, when closure is completed the owner or operator may submit to the Secretary certification by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifi cations in the approved closure plan.

(c) During the post-closure care period the owner or operator must:

(1) Continue all operations (including pH control) necessary to enhance degradation and transforma tion and sustain immobilization of hazardous constituents in the treat ment zone to the extent that such measures are consistent with other post-closure care activities;

(2) Maintain a vegetative cover over closed portions of the facility;

(3) Maintain the run-on control system required under §264.273(c);

(4) Maintain the run-off management system required under §264.273(d);

(5) Control wind dispersal of hazardous waste if required under §264.273(f);

(6) Continue to comply with any prohibitions or conditions concerning growth of food-chain crops under §264.276; and

(7) Continue unsaturated zone monitoring in compliance with §264.278, except that soil-pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone.

(d) The owner or operator is not subject to regulation under paragraphs (a)(8) and (c) of this section if the Secretary finds that the level of hazardous constituents in the treat ment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in paragraph (d)(3) of this section. The owner or opera tor may submit such a demonstration to the Secretary at any time during the closure of post-closure care periods. For the purposes of this paragraph:

(1) The owner or operator must establish background soil values and determine whether there is a statistically significant increase over those values for all hazardous constituents specified in the facility permit under §264.271(b).

(i) Background soil values may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone.

(ii) The owner or operator must express background values and values for hazardous constituents in the treatment zone in a form necessary for the determination of statistically significant increases under paragraph (d)(3) of this section.

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

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

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

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

(e) The owner or operator is not subject to regulation under Subpart F of these regulations if the Secretary finds that the owner or operator satisfies paragraph (d) of this section and if unsaturated zone monitoring under §264.278 indicates that hazardous constituents have not migrated beyond the treatment zone during the active life of the land treatment unit.

§264.281 Special requirements for ignitable or reactive waste.

The owner or operator must not apply ignitable or reactive waste to the treatment zone unless:

(a) The waste is immediately incorporated into the soil so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under §§261.21 or 261.23 of these regulations; and

(2) Section 264.17(b) is complied with; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

§264.282 Special requirements for incompatible wastes.

The owner or operator must not place incompatible wastes, or incompatible wastes and materials (see Appendix V of this part for examples), in or on the same treatment zone, unless §264.17(b) is complied with.

§264.283-264.299 [Reserved]

Subpart N - Landfills

§264.300 Applicability.

The regulations in this subpart apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as 264.1 provides otherwise.

§264.301 Design and operating requirements.

(a) A landfill (except for an existing portion of a landfill) must have:

(1) A liner that is designed, constructed, and installed to prevent any migration of wastes out of the landfill to the adjacent

subsurface soil or ground water or surface water at anytime during the active life (including the closure period) of the landfill. The liner must be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner must be:

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

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

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

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

(i) Constructed of materials that are:

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

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

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

(b) The owner or operator will be exempted from the requirements of paragraph (a) of this section if the Secretary finds, based on a demonstration by the owner or operator, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituents (see §264.93) into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Secretary will 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 attenuative capacity and thickness of the liners and soils present between the landfill and ground water or surface water; and

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

(c) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

(d) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(e) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(f) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator must cover or otherwise manage the landfill to control wind dispersal.

(g) The Secretary will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

§264.302 Double-lined landfills:

(a) The owner or operator of a double-lined landfill is subject to regulation under Subpart F of these regulations and the following conditions: Note: The owner or operator of a double-lined landfill may be exempt from some or all of the requirements of Subpart F if the Secretary determines the requirements are not necessary.

(1) The landfill (including its underlying liners) must be located entirely above the seasonal high water table.

(2) The landfill must be underlain by two liners which are designed and constructed in a manner to prevent the migration of liquids into or out of the space between the liners. Both liners must meet all the specifications of §264.301(a)(1).

(3) A leak detection system must be designed, constructed, maintained and operated between the liners to detect any migration of liquid into the space between the liners.

(4) The landfill must have a leachate collection and removal system above the top liner that is designed, constructed, maintained, and operated in accordance with §264.301(a)(2).

(b) If liquid leaks into the leak detection system, the owner or operator must:

(1) Notify the Secretary of the leak in writing within seven days after detecting the leak; and

(2)(i) Within a period of time specified in the permit, remove accumulated liquid, repair or replace the liner which is leaking to prevent the migration of liquids through the liner, and obtain a certification from a qualified enginer that, to the best of his knowledge and opinion, the leak has been stopped; or

(ii) If a detection monitoring program pursuant to §264.98 has already been established in the permit (to be complied with only if a leak occurs), begin to comply with that program and any other applicable requirements of Subpart F of this part within a period of time specified in the permit.

(c) The Secretary will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

§264.303 Monitoring and inspection.

(a) During construction or instal lation, liners [except in the case of existing portions of landfills exempt from §264.301(a)] and cover system (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g.,

holes, cracks, thin spots, or foreign materials). Immediately after construction or installation:

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

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

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

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

(2) The presence of liquids in leak detection systems where installed to comply with §264.302:

(3) Proper functioning of wind dispersal control systems, where present; and

(4) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

§264.304-264.308 [Reserved]

§264.309 Surveying and recordkeeping.

The owner or operator of a landfill must maintain the following items in the operating record required under §264.73:

(a) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and

(b) The contents of each cell and the approximate location of each hazardous waste type within each cell.

§264.310 Closure and post-closure care.

(a) At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:

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

(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.

(b) After final closure, the owner or operator must comply with all post-closure requirements contained in §§264.117-264.120, including maintenance and monitoring throughout the post-closure care period (specified in the permit under §264.117). The owner or operator must:

(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) Maintain and monitor a leak detection system in accordance with §264.302 where such system is present between double liner systems.

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

Maintain and monitor the gro monitoring system and com ch all other applicable requi ts of Subpart F of this Part;

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

(6) Protect and maintain surveyed benchmarks used in complying with §264.309.

(c) During the post-closure care period, if liquid leaks into a leak detection system installed under §264.302, the owner or operator must notify the Secretary of the leak in writing within seven days after detecting the leak. The Secretary will modify the permit to require compliance with the requirements of Subpart F of this part.

§264.311 [Reserved]

§264.312 Special requirements for ignitable or reactive waste.

(a) Except as provided in paragraph (b) of this section, and in §264.316, ignitable or reactive waste must not be placed in a landfill, unless the waste is treated, rendered, or mixed before or immediately after placement in a landfill so that:

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under §§261.21 or 261.23 of these regulations, and

(2) Section 264.17(b) is complied with.

(b) Ignitable wastes in containers may be landfilled without meeting the requirements of paragraph (a) of this section, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

§264.313 Special requirements for incompatible wastes.

Incompatible wastes, or imcompatible wastes and materials, (see Appendix V of this part for examples) must not be placed in the same landfill cell, unless §264.17(b) is complied with.

§264.314 Special requirements for liquid waste.

(a) Bulk or non-containerized liquid waste or waste containing free liquids must not be placed in a landfill unless:

(1) The landfill has a liner and leachate collection and removal system that meet the requirements of §264.301(a); or

(2) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with an absorbent solid), so that free liquids are no longer present.

(b) Containers holding free liquids must not be placed in a landfill unless:

(1) All free-standing liquid: (i) has been removed by decanting, or other methods; (ii) has been mixed with absorbent or solidified so that free-standing liquid is no longer observed; or (iii) has been otherwise eliminated; or

(2) The container is very small, such as an ampule; or

(3) The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

(4) The container is a lab pack as defined in §264.316 and is disposed of in accordance with §264.316.

§264.315 Special requirements for containers.

Unless they are very small, such as an ampule, containers must be either:

(a) At least 90 percent full when placed in the landfill; or

(b) Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

§264.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs).

Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

(a) Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside contain ers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR Parts 173, 178, and 179), if those regulations specify a particular inside container for the waste.

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR Parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of absorbent material to completely absorb all of the liquid contents of the inside containers. The metal outer container must be full after packing with inside containers and absorbent material.

(c) The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers in accordance with §264.17(b).

(d) Incompatible wastes as defined in §260.10 of these regulations, must not be placed in the same outside container.

(e) Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in §261.23(a)(5) of these regulations, must be treated or rendered non-reactive prior to packaging in accordance with paragraphs (a) through (d) of this section. Cyanide- and sulfide-bearing reactive waste may be packed in accordance with paragraphs (a) through (d) of this section without first being treated or rendered non-reactive.

§264.317-264.339 [Reserved]

Subpart O-Incinerators

§264.340 Applicability.

(a) The regulations in this Subpart apply to owners and operators of facilities that incinerate hazardous waste, except as §264.1 provides otherwise.

(b) After consideration of the waste analysis included with Part B of the permit application, the Secretary, in establishing the permit conditions, must exempt the applicant from all requirements of this Subpart except §264.351 (Closure) and §264.341 (waste analysis)

(1) If the Secretary finds that the waste to be burned is:

(i) Listed as a hazardous waste in Part 261, Subpart D, of these Regulations solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(ii) Listed as a hazardous waste in Part 261, Subpart D, of these Regulations solely because it is reactive (Hazard Code R) for characteristics other than those listed in §261.23(a) (4) and (5), and will not be burned when other hazardous wastes are present in the combustion zone; or

(iii) A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the test for characteristics of hazardous wastes under Part 261, Subpart C, of these Regulations; or

(iv) A hazardous waste solely because it possesses any of the reactivity characteristics described by §261.23(a) (1), (2), (3), (6), (7), and (8) of these Regulations, and will not be burned when other hazardous wastes are present in the combustion zone; and

(2) If the waste analysis shows that the waste contains none of the hazardous constituents listed in Part 261, Appendix VIII, of these Regulations, which would reasonably be expected to be in the waste.

(c) If the waste to be burned is one which is described by paragraphs (b)(1)(i), (b)(1)(ii), (b)(1)(iii), or (b)(1)(iv) of this Section and contains insignificant concentrations of the hazardous constituents listed in Part 261, Appendix VIII, of these Regulations, then the Secretary may, in establishing permit conditions, exempt the applicant from all requirements of this Subpart, except §264.341 (Waste analysis) and §264.351 (Closure), after consideration of the waste analysis included with Part B of the permit application, unless the Secretary finds that the waste will pose a threat to human health and the environment when burned in an incinerator.

(d) The owner or operator of an incinerator may conduct trial burns

subject only to the requirements of §122.27(b) of these Regulations (Short term and incinerator permits).

§264.341 Waste analysis.

(a) As a portion of the trial burn plan required by §122.19 of these Regulations, or with Part B of the permit application, the owner or operator must have included an analysis of the waste feed sufficient to provide all information required by §122.19 or §122.14 of these Regulations. Owners or operators of new hazardous waste incinerators must provide the information required by §122.19 or §122.14 of these Regulations to the greatest extent possible.

(b) Throughout normal operation the owner or operator must conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in his permit (under §264.345(b)).

§264.342 Principal organic hazardous constituents (POHCs).

(a) Principal Organic Hazardous Constituents (POHCs) in the waste feed must be treated to the extent required by the performance standard of §264.343.

(b)(1) One or more POHCs will be specified in the facility's permit, from among those constituents listed in Part 261, Appendix VIII of these Regulations, for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass of the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with Part B of the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHCs if they are present in large quantities or concentrations in the waste.

(2) Trial POHCs will be designated for performance of trial burns in accordance with the procedure specified in Part 122 of these Regulations for obtaining trial burn permits.

§264.343 Performance standards.

An incinerator burning hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under §264.345, it will meet the following performance standards:

(a) An incinerator burning hazardous waste must achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated (under §264.342) in its permit for each waste feed. DRE is determined for each POHC from the following equation:

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

Where:

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

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

(b) An incinerator burning hazardous waste and producing stack emissions of more than 1.8 kilograms per hour (4 pounds per hour) of hydrogen chloride (HCl) must control HCl emissions such that the rate of emission is

no greater than the larger of either 1.8 kilograms per hour or 1% of the HCl in the stack gas prior to entering any pollution control equipment.

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

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

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

(d) For purposes of permit enforcement, compliance with the operating requirements specified in the permit (under §264.345) will be regarded as compliance with this Section. However, evidence that compliance with those permit conditions is insufficient to ensure compliance with the performance requirements of this Section may be "information" justifying modification, revocation, or reissuance of a permit under §122.41 of these regulations.

§264.344 Hazardous waste incinerator permits.

(a) The owner or operator of a hazardous waste incinerator may burn only wastes specified in his permit and only under operating conditions specified for those wastes under 264.345 except:

(1) In approved trial burns under §122.19(b) of these regulations; or

(2) Under exemptions created by §264.340.

(b) Other hazardous wastes may be burned only after operating conditions have been specified in a new permit or a permit modification as applicable. Operating requirements for new wastes may be based on either trial burn results or alternative data included with Part B of a permit application under §122.14 of these regulations.

(c) The permit for a new hazardous waste incinerator must establish appropriate conditions for each of the applicable requirements of this Subpart, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of §264.345, sufficient to comply with the following standards:

(1) For the period beginning with initial introduction of hazardous waste to the incinerator and ending with initiation of the trial burn, and only for the minimum time required to establish operating conditions required in paragraph (c)(2) of this Section, not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements must be those most likely to ensure compliance with the performance standards of §264.343, based on the Secretary's engineering judgment. The Secretary may extend the duration of this period once for up to 720 additional hours when the good cause for the extension is demonstrated by the applicant.

(2) For the duration of the trial burn, the operating requirements must be sufficient to demonstrate

compliance with the performance standards of §264.343 and must be in accordance with the approved trial burn plan;

(3) For the period immediately following completion of the trial burn, and only for the minimum period sufficient to allow for sample analysis, data computation, and submission of the trial burn results by the applicant, and review of the trial burn results and modification of the facility permit by the Secretary, the operating requirements must be those most likely to ensure compliance with the performance standards of §264.343, based on the Secretary's engineering judgment.

(4) For the remaining duration of the permit, the operating requirements must be those demonstrated, in a trial burn or by alternative data specified in §122.14 of these regulations, as sufficient to ensure compliance with the performance standards of §264.343.

§264.345 Operating requirements.

(a) An incinerator must be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in §264.344(b) and included with Part B of a facility's permit application) to be sufficient to comply with the performance standards of §264.343.

(b) Each set of operating requirements will specify the composition of the waste feed (including acceptable variations in the physical or chemical properties of the waste feed which will not affect compliance with the performance requirement of §264.343) to which the operating requirements apply. For each such waste feed, the permit will specify acceptable operating limits including the following conditions:

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

(2) Waste feed rate;

(3) Combustion temperature;

(4) An appropriate indicator of combustion gas velocity;

(5) Allowable variations in incinerator system design or operating procedures; and

(6) Such operating requirements as are necessary to ensure that the performance standards of §264.343 are met.

(c) During start-up and shut-down of an incinerator, hazardous waste (except wastes exempted in accordance with §264.340) must not be fed into the into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.

(d) Fugitive emissions from the combustion zone must be controlled by:

(1) Keeping the combustion zone totally sealed against fugitive emissions; or

(2) Maintaining a combustion zone pressure lower than atmospheric pressure; or

(3) An alternative means of control demonstrated (with Part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(e) An incinerator must be operated when changes with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under paragraph (a) of this Section.

(f) An incinerator must cease operation when changes in waste feed,

incinerator design, or operating conditions exceed limits designated in its permit.

§264.346 [Reserved]

§264.347 Monitoring and inspections.

(a) The owner or operator must conduct, as a minimum, the following monitoring while incinerating hazardous waste.

(1) Combustion temperature, waste feed rate, and the indicator of combustion gas velocity specified in the facility permit must be monitored on a continuous basis.

(2) CO must be monitored on a continuous basis at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere.

(3) Upon request by the Secretary, sampling and analysis of the waste and exhaust emissions must be conducted to verify that the operating requirements established in the permit achieve the performance standards of §264.343.

(b) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions, and signs of tampering.

(c) The emergency waste feed cutoff system and associated alarms must be tested at least weekly to verify operability, unless the applicant demonstrates to the Secretary that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing must be conducted at least monthly.

(d) This monitoring and inspection data must be recorded and the records must be placed in the operating log required by §264.73.

§264.348--264.350 [Reserved]

§264.351 Closure.

At closure the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site.

[Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with §261.3(d) of these regulations, that the residue removed from the incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with applicable requirements of Parts 262-265 of these regulations.]

§264.352--264.999 [Reserved]

APPENDIX I--RECORDKEEPING INSTRUCTIONS

The recordkeeping provisions of §264.73 specify that an owner or operator must keep a written operating record at his facility. This appendix provides additional instructions for keeping portions of the operating record. See §264.73(b) for additional recordkeeping requirements.

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

Records of each hazardous waste received, treated, stored, or disposed of at the facility which include the following:

(1) A description by its common name and the EPA Hazardous Waste Number(s) from Part 261 of these regulations, which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Part 261, Subpart D, of

these regulations, the description also must include the process that produced it (for example, solid filter cake from production of ----, EPA Hazardous Waste Number W051).

Each hazardous waste listed in Part 261, Subpart D, of these regulations, and each hazardous waste characteristic defined in Part 261, Subpart C, of these regulations, has a four-digit EPA Hazardous Waste Number assigned to it. This number must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA Hazardous Waste Numbers.

(2) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1;

(3) The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

TABLE 1

Unit of measure	Symbol[1]	Density
Pounds	P	
Short tons (2000 lbs)	T	
Gallons (U.S.)	G	P/G
Cubic yards	Y	T/Y
Kilograms	K	
Tonnes (1000 kg)	M	
Liters	L	K/L
Cubic meters	C	M/C

[1]Single digit symbols are used here for data processing purposes.

TABLE 2--Handling Codes for Treatment Storage, and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

1. Storage
   - S01 Container (barrel, drum, etc.)
   - S02 Tank
   - S03 Waste pile
   - S04 Surface impoundment
   - S05 Other (specify)
2. Treatment
   - (a) Thermal Treatment
   - T06 Liquid injection incinerator
   - T07 Rotary kiln incinerator
   - T08 Fluidized bed incinerator
   - T09 Multiple hearth incinerator
   - T10 Infrared furnace incinerator
   - T11 Molten salt destructor
   - T12 Pyrolysis
   - T13 Wet Air oxidation
   - T14 Calcination
   - T15 Microwave discharge
   - T16 Cement kiln
   - T17 Lime Kiln
   - T18 Other (specify)
   - (b) Chemical Treatment
   - T19 Absorption mound
   - T20 Absorption field
   - T21 Chemical fixation
   - T22 Chemical oxidation
   - T23 Chemical precipitation
   - T24 Chemical reduction
   - T25 Chlorination
   - T26 Chlorinolysis
   - T27 Cyanide destruction
   - T28 Degradation
   - T29 Detoxication
   - T30 Ion exchange
   - T31 Neutralization
   - T32 Ozonation
   - T33 Photolysis
   - T34 Other (specify)
   - (c) Physical treatment
   - (1) Separation of components
   - T35 Centrifugation
   - T36 Clarification
   - T37 Coagulation
   - T38 Decanting
   - T39 Encapsulation
   - T40 Filtration
   - T41 Flocculation
   - T42 Flotation
   - T43 Foaming
   - T44 Sedimentation
   - T45 Thickening
   - T46 Ultrafiltration
   - T47 Other (specify)
   - (2) Removal of Specific Components
   - T48 Absorption-molecular sieve

T49 Activated carbon
T50 Blending
T51 Catalysis
T52 Crystallization
T53 Dialysis
T54 Distillation
T55 Electrodialysis
T56 Electrolysis
T57 Evaporation
T58 High gradient magnetic separation
T59 Leaching
T60 Liquid ion exchange
T61 Liquid-liquid extraction
T62 Reverse osmosis
T63 Solvent recovery
T64 Stripping
T65 Sand filter
T66 Other (specify)
(d) Biological Treatment
T67 Activated sludge
T68 Aerobic lagoon
T69 Aerobic tank
T70 Anaerobic lagoon
T71 Composting
T72 Septic tank
T73 Spray irrigation
T74 Thickening filter
T75 Tricking filter
T76 Waste stabilization pond
T77 Other (specify)
T78-79 [Reserved]

3. Disposal

D80 Underground injection
D81 Landfill
D82 Land treatment
D83 Ocean disposal
D84 Surface impoundment (to be closed as a landfill)
D85 Other (specify)

APPENDIX II-RIBRA REPORT FORM AND INSTRUCTIONS

HAZARDOUS WASTE REPORT

PLEASE PLACE LABEL IN THIS SPACE

I. TYPE OF HAZARDOUS WASTE REPORT

PART A: GENERATOR ANNUAL REPORT

THIS REPORT IS FOR THE YEAR ENDING DEC. 31. 19

PART B: FACILITY ANNUAL REPORT

THIS REPORT FOR YEAR ENDING DEC. 31. 19

PART C: UNMANIFESTED WASTE REPORT

THIS REPORT IS FOR A WASTE RECEIVED *(day, mo., & yr.)* — — 19

INSTRUCTIONS: You may have received a preprinted label attached to the front of this pamphlet; affix it in the designated space above—left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave Sections II, III, and IV below blank. If you did not receive a preprinted label, complete all sections. "Installation" means a single site where hazardous waste is generated, treated, stored, or disposed of. Please refer to the specific instructions for generators or facilities before completing this form. The information requested herein is required by law *(Section 3002/3004 of the Resource Conservation and Recovery Act).*

II. INSTALLATION'S EPA I.D. NUMBER

III. NAME OF INSTALLATION

IV. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX

CITY OR TOWN | ST. | ZIP CODE

V. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER

CITY OR TOWN | ST. | ZIP CODE

VI. INSTALLATION CONTACT

NAME *(last and first)* | PHONE NO. *(area code & no.)*

VII. TRANSPORTATION SERVICES USED *(for Part A reports only)*

List the EPA identification numbers for those transporters whose services were used during the reporting year represented by this report.

VIII. COST ESTIMATES FOR FACILITIES *(for Part B reports only)*

A. COST ESTIMATE FOR FACILITY CLOSURE

B. COST ESTIMATE FOR POST CLOSURE MONITORING AND MAINTENANCE *(disposal facilities only)*

$ $

IX. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. PRINT OR TYPE NAME

B. SIGNATURE

C. DATE

Please print or type with ELITE type *(12 characters/inch)*.

DNREC

FACILITY REPORT – PARTS B & C

(Collected under the authority of Section 3004 of RCRA.)

FOR OFFICIAL USE ONLY *(Items 1 & 3)*	1. DATE RECEIVED	XVI. TYPE OF REPORT *(enter an "X")*	XVII. FACILITY'S EPA I.D. NO.
	2. RECEIVED BY	☐ PART B ☐ PART C	

XVIII. GENERATOR'S EPA I.D. NO.	XX. GENERATOR ADDRESS *(street or P.O. box, city, state, & zip code)*
XIX. GENERATOR NAME *(specify)*	

XXI. WASTE IDENTIFICATION

LINE NUMBER	A. DESCRIPTION OF WASTE	B. EPA HAZARDOUS WASTE NUMBER *(see instructions)*	C. HANDLING METHOD *(enter code)*	D. AMOUNT OF WASTE	UNIT OF MEASURE *(enter code)*
1					
2					
3					
4					
5					
7					
8					
9					
10					
11					
12					

XXII. COMMENTS *(enter information by line number – see instructions)*

General Instructions Hazardous Waste Report (DNREC Form 8700-13)

Important: Read all instructions before completing this form.

Section I.--Type of Hazardous Waste Report

Part A--Generator Annual Report

For generators who ship their waste off-site to facilities which they do not own or operate; fill in the reporting year for this report (e.g., 1982).

Note: Generators who ship hazardous waste off-site to a facility which they own or operate must complete the facility (Part B) report instead of the Part A report.

Part B--Facility Annual Report

For owners or operators of on-site or off-site facilities that treat, store, or dispose of hazardous waste; fill in the reporting year for this report (e.g., 1982)

Part C--Unmanifested Waste Report

For facility owners or operators who accept for treatment, storage or disposal any hazardous waste form an off-site source without an accompanying manifest; fill in the date the waste was received at the facility (e.g. 04-02-1982).

Section II. thru Section IV. Installation, I.D. Number, Name of Installation, and Installation Mailing Address

If you received a preprinted label from DNREC, attach it in the space provided and leave Sections II through IV blank If there is an error or omission on the label, cross out the incorrect information and fill in the appropriate item(s). If you did not receive a preprinted label, complete Section II through Section IV.

Section V.--Location of Installation

If your installation location address is different than the mailing address, enter the location address of your installation.

Section VI.-Installation Contact

Enter the name (last and first) and telephone number of the person whom may be contacted regarding information contained in this report.

Section VII.-Transporation Services Used (For Part A reports ONLY)

List the EPA Identification Number for each transporter whose services you used during the reporting year.

Section VIII.--Cost Estimates for Facilities (For Part B Reports ONLY)

A. Enter the most recent cost estimate for facility closure in dollars. See Subpart H of Part 264 or 265 for more detail.

B. For disposal facilities only, enter the most recent cost estimate for post closure monitoring and maintenance. See Subpart H of Part 264 or 265 for more detail.

Section IX.--Certification

The generator or his authorized representative (Part A reports) or the owner or operator of the facility or his authorized representative (Parts B and C reports) must sign and date the certification where indicated. The printed or typed name of the person signing the report must also be included where indicated.

Note: Since more than one page is required for each report, enter the page number of each sheet in the lower right corner as well as the total number of pages.

FACILITY ANNUAL REPORT PART B INSTRUCTIONS (DNREC Form 8700-13B)

Facility Annual Report for owners or operators of on-site or off-site facilities that treat, store, or dispose of hazardous waste.

Note.--Generators who ship hazardous waste off-site to a facility they own or operate must complete this Part B report instead of the Generator (Part A) Annual Report.

IMPORTANT: READ ALL INSTRUCTIONS BEFORE COMPLETING THIS FORM

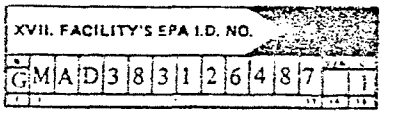
Section XVI.--Type of Report

Put an "X" in the box marked Part B.

Section XVII.--Facility's EPA Identification Number

Enter the EPA Identification number for your facility.

Example:



Section XVIII.--Generator's EPA Identification Number

Enter the EPA identification number of the generator of the waste described under Section XXI which was received by your facility during the reporting year. A separate sheet must be used for each generator. If the waste came from a foreign generator, enter the EPA identification number of the importer in this section and enter the and address of the foreign generator in Section XXII, Comments. If the waste was generated and treated, stored, or disposed of at the same installation, leave this section blank.

Section XIX.-Generator's Name

Enter the name of the generator corresponding to the generator's EPA identification number in Section XVIII.

If the waste was generated and treated, stored, or disposed of at the same installation, enter "ON-SITE".

If the waste came from a foreign generator, enter the name of the

importer corresponding to the EPA identification number in Section XVIII.

Section XX.-Generator's Address

Enter the address of the generator corresponding to the generator's EPA identification number in Section XVIII. If the waste was generated and treated, stored, or disposed of at the same installation, leave this section blank. If the waste came from a foreign generator, enter the address of the importer corresponding to the EPA identification number in Section XVIII.

XIX. WASTE IDENTIFICATION

LINE NUMBER	A. DESCRIPTION OF WASTE	B. EPA HAZARDOUS WASTE NUMBER (see instructions)	C. HANDLING METHOD (enter code)	D. AMOUNT OF WASTE	UNIT OF MEASURE (enter code)
1	Steel Finishing Sludge	K060 K061	S02	25000	T
2	Steel Finishing Sludge	K060 K051	T21	157245	T

Section XXI.-Waste Identification

All information in this section must be entered by line number. A separate line entry is required for each different waste or mixture of wastes that your facility received during the reporting year. The handling code applicable to that waste at the end of the reporting year should be reported. If a different handling code applies to portions of the same waste, (e.g., part of the waste is stored while the remainder was "chemically fixed" during the year), use a separate line entry for each portion.

Section XXI-A.-Description of Waste

For hazardous wastes that are listed under Part 261, Subpart D, enter the EPA listed name, abbreviated if necessary. Where mixtures of listed wastes were received, enter the description which you believe best describes the waste.

For unlisted hazardous waste identified under Part 261, subpart C, enter the description which you believe best describes the waste. Include the specific manufacturing or other process generating the waste (e.g., green sludge from widget manufacturing) and if known, the chemical or generic chemical name of the waste.

XXI WASTE IDENTIFICATION

LINE NUMBER	A. DESCRIPTION OF WASTE	B. EPA HAZARDOUS WASTE NUMBER (see instructions)	C. HANDLING METHOD (enter code)	C. AMOUNT OF WASTE	D. UNIT OF MEASURE (enter code)
1	Steel Finishing Sludge	K060 K061 K062 K063	T 2 1	2 9 1 7 4 5 5	T
2		K064			

Section XXI-B.-EPA Hazardous Waste Number

For listed waste, enter the four digit EPA Hazardous Waste Number from Part 261, Subpart D, which identifies the waste.

For a mixture of more than one listed waste, enter each of the applicable EPA Hazardous Waste Numbers.

Four spaces are provided. If more space is needed, continue on the next line(s) and leave all other information on that line blank.

For unlisted hazardous wastes, enter the EPA Hazardous Waste Numbers from Part 261, Subpart C, applicable to the waste. If more than four spaces are required, follow the procedure described above.

Section XXI-C.-Handling Code

Enter one EPA handling code for each waste line entry. Where several handling steps have occurred during the year, report only the handling code representing the waste's status at the end of the reporting year or its final disposition. EPA handling codes are given in Appendix I of this part.

Section XXI-D.-Amount of Waste

Enter the total amount of waste described on this line which you received during this reporting year.

Section XXI.-E.--Unit of Measure

Enter the unit of measure code for the quantity of waste described on this line. Units of measure which must be usded in this report and the appropriate codes are:

Units of Measure	Code
Pound	P
Short tons (2000 lbs)	T
Kilograms	K
Tonnes (1000 kg)	M

Units of volume may not be used for reporting but must be converted into one of the above units of weight, taking into account the appropriate density or specific gravity of the waste.

Section XXII.-Comments

This space may be used to explain or clarify any entry. If used, enter a cross-reference to the appropriate Section number.

Note.-Since more than one page is required for each report, enter the page number of each sheet in the lower right hand corner was well as the total number of pages.

Where required by 264 or 265, subparts F or R, attach ground-water monitoring data to this report.

APPENDIX III [Reserved]

APPENDIX IV

Cochran's Approximation to the Behrens-Fisher Students' t-test

Using all the available background data (n_b readings), calculate the background mean (X_B) and background variance (S_B^2). For the single monitoring well under investigation (n_m reading), calculate the monitoring mean (X_m) and monitoring variance (S_m^2).

For any set of data (X_1, X_2... X_n) the mean is calculated by:

$$\overline{X} = \frac{X_1 + X_2 \ldots + \overline{X}_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{(X_1 - \overline{X})^2 + (X_2 - \overline{X})^2 \ldots + (X_n - \overline{X})^2}{n - 1}$$

where "n" denotes the number of observations in the set of data.

The t-test uses these data summary measures to calculate a t-statistic (t*) and a comparison t-statistic (t_c). The t* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{X_m - X_B}{\sqrt{\frac{S_m^2}{N_m} + \frac{S_B^2}{N_B}}}$$

If the value of this t-statistic is negative than there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c), against which t* will be compared necessitates finding t_B and t_m from standard (one-tailed) tables where,

t_B = t-tables with (n_B-1) degrees of freedom, at the 0.05 level of significance.

t_m = t-tables with (n_m-1) degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_B and W_m are defined as:

$$W_B = \frac{S_B^2}{N_B} \quad \text{and} \quad W_m = \frac{S_m^2}{N_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_B t_B + W_m t_m}{W_B + W_m}$$

The t-statistic (t*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If t* is equal to or larger than t_c, then conclude that there most likely has been a significant increase in this specific parameter.

If t* is less than t_c, then conclude that most likely there has not been a change in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t* is equal to or larger than t_c, then conclude that there most likely has been a significant increase (if the initial t* had been negative, this would imply a significant decrease). If t* is less than t_c, then conclude that there most likely has been no change.

A further discussion of the test may be found in Statistical Methods (6th Edition, Section 4.14) by G. W. Snedecor and W. C. Cochran, or Principles and Procedures of Statistics (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.

Degree of Freedom	t-values (one-tail)	t-values (two-tail)
1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228
11	1.796	2.201
12	1.782	2.179
13	1.771	2.180
14	1.781	2.145
15	1.753	2.191
16	1.746	2.120
17	1.740	2.110
18	1.748	2.120
19	1.729	2.093
20	1.725	2.086
21	1.721	2.080
22	1.717	2.074
23	1.714	2.069
24	1.711	2.064
25	1.708	2.060
30	1.697	2.042
40	1.684	2.021

APPENDIX V--EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that can avoid storing uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g. adding acid to water rather than water to acid, or lime neutralizes them first, by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A Material with a Group B material may have the potential consequence as noted.

Group 1-A

Acetylene sludge
Alkaline caustic liquids
Alkaline cleaner
Alkaline corrosive liquids
Alkaline corrosive battery fluid
Caustic wastewater
Lime sludge and other corrosive alkalies
Lime wastewater
Lime and water
Spent caustic

Group 1-B

Acid sludge
Acid and water
Battery acid
Chemical cleaners
Electrolyte, acid
Etching acid liquid or solvent
Pickling liquor and other corrosive acids
Spent acid
Spent mixed acid
Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2-A

Aluminum
Beryllium
Calcium
Lithium
Magnesium
Potassium
Sodium
Zinc powder
Other reactive metals and metal hydrides

Group 2-B

Any waste in Group 1--A or 1-B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A

Alcohols
Water

Group 3-B

Any concentrated waste in Groups 1-A or 1-B

Calcium
Lithium
Metal hydrides

Potassium
SO_2Cl_2, $SOCl_2$, PCl_3, CH_3SiCl_3
Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4-A

Alcohols
Aldehydes
Halogenated hydrocarbons
Nitrated hydrocarbons
Unsaturated hydrocarbons
Other reactive organic compounds and solvents

Group 4-B

Concentrated Group 1-A or 1-B wastes
Group 2-A wastes

Potential consequences: Fire, explosion, or violent reaction.

Group 5-A

Spent cyanide and sulfide solutions

Group 5-B

Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A

Chlorates
Chlorine
Chlorites
Chromic acid
Hypochlorites
Nitrates
Nitric acid, fuming
Perchlorates
Permanganates
Peroxides
Other strong oxidizers

Group 6-B

Acetic acid and other organic acids
Concentrated mineral acids
Group 2-A wastes
Group 4-A wastes
Other flammable and combustible wastes

Potential consequences: Fire, explosion, or violent reaction.

Source: "Law, Regulations, and Guidelines for handling of Hazardous Waste." California Department of Health, February 1975.