Chapter 14. Standards for Owners and Operators of Hazardous Waste Transfer, Treatment, Storage, and Disposal Facilities

Article 1. General

66264.1. Purpose, Scope and Applicability.

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

(b) The standards in this chapter apply to owners and operators of all facilities which transfer, treat, store, or dispose of hazardous waste, except as specifically provided otherwise in this chapter or Chapter 11 of this division.

(c) The requirements of this chapter apply to a person disposing of hazardous waste by means of ocean disposal subject to a permit issued under the Federal Marine Protection, Research, and Sanctuaries Act (33 U.S.C. Section 1401, et.seq.) only to the extent they are included in a permit by rule granted to such a person under Chapter 20 of this division. Such person shall comply with the requirements of Chapter 14 of this division when transferring, treating or storing hazardous waste before it is loaded onto an ocean vessel for incineration or disposal at sea.

(d) (Reserved)

(e) The requirements of this chapter apply to the owner or operator of a POTW which transfers, 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 Chapter 20 of this division.

(f) (Reserved)

(g) The requirements of this chapter do not apply to:

(1) (Reserved)

(2) (Reserved)

(3) A generator accumulating waste on-site in compliance with Section 66262.34 of this division;

(4) A farmer disposing of waste pesticides from the farmer's own use in compliance with Section 66262.70 of this division;

(5) (Reserved)

(6) (Reserved)

(7) [Reserved]

(8) (A) Except as provided in subsection (g)(8)(B) of this section, a person engaged in treatment or containment activities during immediate response to any of the following situations:

1. A discharge of a hazardous waste;

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

3. A discharge of a material which, when discharged, becomes a hazardous waste.

(B) An owner or operator of a facility otherwise regulated by this chapter shall comply with all applicable requirements of Articles 3 and 4 of this chapter.

(C) Any person who is covered by subsection (g)(8)(A) 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 chapter and Chapter 21 of this division for those activities.

(9) A transporter storing manifested shipments of hazardous waste in containers at a transfer facility, or a transfer facility storing manifested shipments of hazardous waste in containers, for a period of 144 hours or less, and meeting the requirements of Sections 66262.30 and 66263.18.

(10) The addition of absorbent material to waste in a container (as defined in Section 66260.10 of this division) 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 Sections 66264.17 (b), 66264.171, and 66264.172 are complied with.

(11) Persons managing hazardous waste in a hazardous waste management unit not subject to 40 CFR Part 264 (incorporated by reference in Section 66260.11 of this division) pursuant to an exemption in 40 CFR Section 264.1(g), if the waste managed in that unit is identified as a hazardous waste solely because it exhibits the characteristic of toxicity set forth in Section 66261.24(a)(1) of this division.

(h) The requirements of this chapter apply to owners or operators of all facilities which transfer, treat, store, or dispose of hazardous wastes referred to in Chapter 18 of this division.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.1.

66264.2. Compliance Schedule for Permit Modifications.

The owner or operator of a hazardous waste facility who has received a hazardous waste facility permit on or before the effective date of this division and who is required to comply with the provisions of this chapter, shall submit a permit modification request pursuant to Chapter 20, Article 4 of this division to the Department within 180 days of the effective date of this division. The modification request shall describe the exact change(s) to be made to the facility to comply with the provisions of this chapter. The owner or operator of such a facility shall implement the approved modification(s) according to a schedule of compliance established by the Department.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and
Safety Code.
Reference: Sections 25150, 25159 and 25200, Health and Safety Code.

66264.3. Relationship to Interim Status Standards.

A facility owner or operator who has fully complied with the requirements for interim status, as defined in Health and Safety Code Section 25200.5 and regulations under Section 66270.70, shall comply with the regulations specified in Chapter 15 of this division in lieu of the regulations in this chapter, until final administrative disposition of the facility's permit application is made.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.3.

66264.4. Enforcement Actions.

In addition to bringing an enforcement action pursuant to Chapter 6.5 of Division 20 commencing with Section 25100 of the Health and Safety Code, the Department may take or secure actions pursuant to Health and Safety Code Section 25358.3.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25180.5 through 25196.6 and 25358.3, Health and Safety Code; 40 CFR Section 264.4.

Article 2.General Facility Standards

66264.10. Applicability.

The regulations in this article apply to owners and operators of all hazardous waste facilities, except as provided in Section 66264.1.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.10.

66264.11. Identification Number.

Every facility owner or operator shall apply to the Department for an Identification Number in accordance with the ~~Department's~~ following notification procedures~~:~~.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.

Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.11

(a.) For facilities required to obtain an identification number pursuant to 40CFR Parts 260 to 270 (incorporated by reference in section 66260.11 of this division), by notifying the USEPA pursuant to 40 CFR section 264.11; or

(b.) For any other facility which treats, stores, transfers, or disposes of hazardous waste, by notifying the Department pursuant to Health and Safety Code section 25158.

66264.12. Required Notices.

(a) The owner or operator of a facility that has arranged to receive hazardous waste from a foreign source shall notify the Department 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) shall inform the generator in writing that the owner or operator has the appropriate permit(s) for, and will accept, the waste the generator is shipping. The owner or operator shall keep a copy of this written notice as part of the operating record.

(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 shall notify the new owner or operator in writing of the requirements of this chapter and Chapter 20 of this division. An owner's or operator's failure to notify the new owner or operator of the requirements of this chapter shall not relieve the new owner or operator of the obligation to comply with all applicable requirements.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.

Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.12.

66264.13. General Waste Analysis.

(a) (1) Before an owner or operator transfers, treats, stores, or disposes of any hazardous waste, the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis shall contain all the information which must be known to transfer, treat, store, or dispose of the waste in accordance with the requirements of this chapter and Chapter 18 of this division or with the conditions of a permit issued under Chapter 20 and Chapter 21 of this division.

(2) The analysis may include data developed under Chapter 11 of this division, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes.

(A) 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 subsection (a) (1) of this section.

(B) 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 subsection (a) (1) of this section.

(3) If the generator does not supply the information as specified in subsection (a) (2) (B) of this section, and the owner or operator chooses to accept a hazardous waste, the owner or operator shall obtain the information required to comply with this section.

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

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

(B) For off-site facilities, when the results of the inspection required in subsection (a) (5) 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.

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

(b) The owner or operator shall develop and follow a written waste analysis plan which describes the procedures which the owner or operator will carry out to comply with subsection (a) of this

section. The owner or operator shall keep this plan at the facility. At a minimum, the plan shall 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 subsection (a) of this section);

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

(3) The sampling and sampling management methods which will be used to obtain a representative sample of the waste to be analyzed. The sampling, planning, methodology, equipment, sample processing, documentation and custody procedures shall be in accordance with either:

(A) One of the sampling methods described in Appendix I of Chapter 11 of this division; or

(B) An equivalent sampling method.

(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 Sections 66264.17, 66264.314, 66264.341 and 66268.7 of this division.

(c) For off-site facilities, the waste analysis plan required in subsection (b) of this section shall 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 shall 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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.13.

66264.14. Security.

(a) The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless the owner or operator can demonstrate to the Department as required in Section 66270.14(b)(4) of Chapter 20 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 chapter.

(b) Unless the owner or operator has made a successful demonstration under subsections (a)(1) and (2) of this section, a facility shall 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) (A) 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

(B) 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).

(3) The requirements of subsection (b) of this section shall be 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 subsection (b)(1) or (2) of this section.

(c) Unless the owner or operator has made a successful demonstration under subsections (a)(1) and (2) of this section, a sign with the legend, "Danger Hazardous Waste Area--Unauthorized Personnel Keep Out", shall be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend shall be written in English, Spanish and in any other language predominant in the area surrounding the facility, and shall be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger Hazardous Waste Area--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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.

Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.14.

66264.15. General Inspection Requirements.

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

(2) The owner or operator shall keep this schedule at the facility.

(3) The schedule shall 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 or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, shall be inspected daily when in use. At a minimum, the inspection schedule shall include the terms and frequencies called for in Sections 66264.174, 66264.194, 66264.226, 66264.253, 66264.254, 66264.303, 66264.347, and 66264.602, where applicable.

(5) In accordance with Chapter 20 of this division, the inspection schedule shall be submitted with Part B of the permit application. The Department will evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, the Department may modify or amend the schedule as may be necessary.

(c) The owner or operator shall 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 shall be taken immediately.

(d) The owner or operator shall record inspections in an inspection log or summary. The owner or operator shall keep these records for at least three years from the date of inspection. At a minimum, these records shall include the date and time of the inspection,

the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.

Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.15.

66264.16. Personnel Training.

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

(2) This program shall be directed by a person trained in hazardous waste management procedures, and shall 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 shall be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

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

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

(C) Communications or alarm systems;

(D) Response to fires or explosions;

(E) Response to groundwater contamination incidents; and

(F) Shutdown of operations.

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

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

(d) The owner or operator shall maintain 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 subsection (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 shall 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 subsections (a), (b), and (c) of this section has been given to, and completed by, facility personnel.

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

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.16.

66264.17. General Requirements for Ignitable, Reactive, or Incompatible Wastes.

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

(b) Where specifically required by other sections of this chapter, the owner or operator of a facility that transfers, treats, stores or disposes ignitable or reactive waste, or mixes incompatible waste or incompatible wastes and other materials, shall 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 subsection (a) or (b) of this section, the owner or operator shall document that compliance. This documentation may be based on references to published scientific or engineering literature, data from trial tests (e.g., bench scale or pilot scale tests), waste analyses (as specified in Section 66264.13), or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.17.

66264.18. Location Standards.

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

(2) As used in subsection (a) (1) of this section.

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

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

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

(b) Floodplains.

(1) A facility located in a 100-year floodplain or within the maximum high tide shall be designed, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood or maximum high tide, unless the owner or operator can demonstrate to the Department's satisfaction that procedures are in effect which will cause the waste to be removed safely, before

flood or tide waters can reach the facility, to a location where the wastes will not be vulnerable to flood waters.

If wastes are moved to a location within California, that location shall be a facility which is either permitted by the Department under Chapter 20 of this division or in interim status under Chapters 20 and 15 of this division.

(2) As used in subsection (b) (1) of this section:

(A) "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.

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

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

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

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.

Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.18.

66264.25. Seismic and Precipitation Design Standards.

(a) Except as provided by Sections 66264.175 and 66264.192, facilities subject to this chapter and all cover systems and drainage control systems required by this chapter shall be designed to function without failure when subjected to capacity, hydrostatic and hydrodynamic loads resulting from a 24-hour probable maximum precipitation storm.

(b) The following shall be designed, constructed and maintained to withstand the maximum credible earthquake without the level of public health and environmental protection afforded by the original design being decreased:

(1) All surface impoundments, waste piles, landfills and land treatment facilities subject to this chapter, and

(2) All covers and cover systems required by this chapter and all containment and control features which will remain after closure at permanent hazardous waste disposal areas.

NOTE: Authority cited: Sections 208 and 25150, Health and Safety Code.
Reference: Section 25150, Health and Safety Code.

Article 3.Preparedness and Prevention

66264.30. Applicability.

The regulations in this article apply to owners and operators of all hazardous waste facilities, except as Section 66264.1 provides otherwise.

NOTE: Authority cited: Sections 208, 25150, and 25159, Health and
Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.30.

66264.31. Design and Operation of Facility.

Facilities shall be located, 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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.31.

66264.32. Required Equipment.

All facilities shall be equipped with the following, unless it can be demonstrated to the Department 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 automatic sprinklers, or water spray systems.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.

Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.32.

66264.33. Testing and Maintenance of Equipment.

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

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.33.

66264.34. Access to Communications or Alarm System.

(a) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation shall have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless the Department has ruled that such a device is not required under Section 66264.32.

(b) If there is ever just one employee on the premises while the facility is operating, the employee shall have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless the Department has ruled that such a device is not required under Section 66264.32.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.34.

66264.35. Required Aisle Space.

The owner or operator shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it is demonstrated pursuant to Section 66270.14(b)(6) to the Department that aisle space is not needed for any of these purposes.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.35.

66264.37. Arrangements With Local Authorities.

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

(1) Arrangements to familiarize police, fire departments, emergency response teams and the local Office of Emergency Services 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 others 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 shall document the refusal in the operating record.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.37.

Article 4. Contingency Plan and Emergency Procedures

66264.50. Applicability.

The regulations in this article apply to owners and operators of all hazardous waste facilities, except as Section 66264.1 provides otherwise.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.50.

66264.51. Purpose and Implementation of Contingency Plan.

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

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

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.51.

66264.52. Content of Contingency Plan.

(a) The contingency plan shall describe the actions facility personnel shall take to comply with Sections 66264.51 and 66264.56 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) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with Title 40 CFR Part 112, or Part 1510, or some other emergency or contingency plan, the owner or operator need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of this chapter.

(c) The plan shall describe arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to Section 66264.37.

(d) The plan shall list names, addresses, and phone numbers (office and home) of all persons qualified to act as emergency coordinator (see Section 66264.55), and this list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and others shall be listed in the order in which they will assume responsibility as alternates. For new facilities, this information shall be supplied to the Department at

the time of certification (see Section 66270.14), rather than at the time of permit application.

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

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

(g) The plan shall include the current telephone number of the State Office of Emergency Services.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.52.

66264.53. Copies of Contingency Plan.

(a) A copy of the contingency plan and all revisions to the plan shall be:

(1) Maintained at the facility; and

(2) 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.

(b) The contingency plan shall be submitted to the Department with Part B of the permit application under Chapter 20, of this division and, after modification or approval, will become a condition of any permit issued.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.53.

66264.54. Amendment of Contingency Plan.

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

(a) The facility permit is revised;

(b) The plan fails in an emergency;

(c) The facility changes 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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.54.

66264.55. Emergency Coordinator.

At all times, there shall 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 shall be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person shall have the authority to commit the resources needed to carry out the contingency plan.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.55.

66264.56. Emergency Procedures.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or the emergency coordinator's designee when the emergency coordinator is on call) shall 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 shall immediately identify the character, exact source, amount, and areal extent of any released materials. The emergency coordinator may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.

(c) Concurrently, the emergency coordinator shall assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment shall consider both direct and indirect effects of the release, fire, or explosion (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 could threaten human health, or the environment, outside the facility, the emergency coordinator shall report the findings as follows:

(1) If the emergency coordinator's assessment indicates that evacuation of local areas may be advisable, the emergency coordinator shall immediately notify appropriate local authorities. The emergency coordinator shall be available to help appropriate officials decide whether local areas should be evacuated; and

(2) The emergency coordinator shall, in every situation, immediately notify the State Office of Emergency Services. The report shall include:

(A) Name and telephone number of reporter;

(B) Name and address of facility;

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

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

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

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

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

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

(9) Immediately after an emergency, the emergency coordinator shall provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility. Unless the owner or operator can demonstrate, in accordance with Section 66261.3 (c) or (d) of this division, that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of Chapters 12, 13, and 14 of this division.

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

(1) No waste that may be incompatible with the released material is transferred, 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 shall notify the Department, and appropriate State and local authorities, that the facility is in compliance with subsection (h) of this section before operations are resumed in the affected area(s) of the facility.

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

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.56.

Article 5. Manifest System, Recordkeeping, and Reporting

66264.70. Applicability.

The regulations in this article apply to owners and operators of both on-site and off-site facilities, except as Section 66264.1 provides otherwise. Sections 66264.71, 66264.72, and 66264.76 do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.70.

66264.71. Use of Manifest System.

(a) If a facility receives hazardous waste accompanied by a manifest, the owner or operator, or the facility's agent, shall:

(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 Section 66264.72(a) on each copy of the manifest.

(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;

(5) Within 30 days of each receipt of hazardous waste submit to the Department a legible copy of each manifest used; and

(6) 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) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the Identification Numbers, generator's certification, and signatures), the owner or operator, or the facility's agent, shall:

(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 Section 66264.72(a)) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper.

(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 the facility's agent, shall send a copy of the shipping paper signed and dated to the generator;

(5) Within 30 days of each receipt of hazardous waste submit to the Department a legible copy of each manifest or shipping paper (if the manifest has not been received) used; and

(6) 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 shall comply with the requirements of Chapter 12 of this division.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.71.

66264.72. 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 constituents not reported on the manifest or shipping paper.

(b) Upon discovering a significant discrepancy, the owner or operator shall 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 shall immediately submit to the Department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.72.

66264.73. Operating Record.

(a) The owner or operator shall keep a written operating record at the facility.

(b) The following information shall 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 transfer, treatment, storage, or disposal at the facility as required by Appendix I, of this chapter;

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

(3) Records and results of waste analyses performed as specified in Sections 66264.13, 66264.17, 66264.314, 66264.341 and 66268.7 of this division.

(4) Summary reports and details of all incidents that require implementing the contingency plan as specified in Section 66264.56(j);

(5) Records and results of inspections as required by Section 66264.15(d) (except these data need be kept only three years);

(6) Monitoring, testing, or analytical data and corrective action where required by Article 6 and Sections 66264.226, 66264.253, 66264.254, 264.278, 66264.280, 66264.303, 66264.309, and 66264.347 and 66264.602.

(7) For off-site facilities, notices to generators as specified in Section 66264.12(b); and

(8) All closure cost estimates under Section 66264.142, and, for disposal facilities, all post-closure cost estimates under Section 66264.144.

(9) A certification by the permittee no less often than annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that the permittee generates to the degree determined by the permittee to be economically practicable; and the proposed method of transfer, treatment, storage or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.

(10) Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction

granted pursuant to Section 66268.5, a petition pursuant to Section 66268.6, or a certification under Section 66268.8, and the applicable notice required by a generator under Section 66268.7(a);

(11) For an off-site treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under Section 66268.7 or Section 66268.8;

(12) For an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under Section 66268.7 or Section 66268.8;

(13) For an off-site land disposal facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Section 66268.7 or Section 66268.8, whichever is applicable; and

(14) For an on-site land disposal facility, the information contained in the notice required by the generator or owner or operator of a treatment facility under Section 66268.7, except for the manifest number, and the certification and demonstration if applicable, required under Section 66268.8, whichever is applicable.

(15) For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the

generator or the owner or operator under Section 66268.7 or Section 66268.8; and

(16) For an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under Section 66268.7 or Section 66268.8.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159, 25159.5 and 25208.4(c), Health and Safety Code; 40 CFR Section 264.73.

66264.74. Availability, Retention, and Disposition of Records.

(a) All records, including plans, required under this chapter shall be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of EPA who is duly designated by the USEPA Administrator, the Department, the State Water Resources Control Board, or a regional water quality control board.

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

(c) A copy of records of waste disposal locations and quantities under Section 66264.73(b)(2) shall be submitted to the Department, the appropriate regional water quality control board, and local land authority upon closure of the facility.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.74.

66264.75. Annual Report.

The owner or operator shall prepare and submit single copies of an annual report to the Department and the appropriate regional water quality control board by March 1 of each year. The annual report shall be submitted on forms provided by the Department EPA Form 8700-13A/B, 5-80, (Revised 11-89). The report shall cover facility activities during the previous calendar year and shall include:

(a) The Identification Number, name, and address of the facility;

(b) The calendar year covered by the report;

(c) For off-site facilities, the Identification Number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report shall give the name and address of the foreign generator;

(d) A description, including any applicable EPA hazardous waste number from Chapter 11, Articles 3 or 4 of this division, California Hazardous Waste Number from Chapter 11, Appendix XII of this division, and DOT hazard class, and the quantity of each hazardous waste the facility received during the year. Wastes that are classified as non-RCRA wastes shall be described by indicating a generic name of the waste and the phrase "Non-RCRA Hazardous Waste." When possible, the generic name shall be obtained from Chapter 11, Appendix X, subdivision (e) of this division. If the generic name is not listed in Chapter 11, Appendix X, subdivision (e) the commonly

recognized industrial name of the waste shall be used. For off-site facilities, this information shall be listed by Identification Number of each generator;

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

(f) Reserved

(g) The most recent closure cost estimate under Section 66264.142, and, for disposal facilities, the most recent post-closure cost estimate under Section 66264.144; and

(h) For generators who transfer, treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

(i) For generators who transfer, treat, store, or dispose of hazardous waste on-site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.

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

(k) The environmental monitoring data specified in Section 66264.73.

(1) The owner or operator shall certify the following in writing for waste shipped offsite after January 1, 1990. The certification shall be attached to the Annual Report and include the following:

(1) Whether the hazardous waste shipped offsite has a heating value of 3,000 British Thermal Units per pound of waste or less, and a volatile organic compound (VOC) content of one percent or less by weight; and

(2) If the waste had a heating value or VOC content greater than that specified in Subsection (1)(1), that:

(A) the waste was incinerated or treated by any method that has been authorized by the Department as part of a hazardous waste facility permit issued pursuant to Health and Safety Code Section 25200; or

(B) the waste is exempted from the requirements of Chapter 18, Article 12; or

(C) the waste was recycled; or

(D) the waste was shipped out of California for incineration, treatment, disposal or recycling.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25155.5, 25159, 25159.5 and 25202.9, Health and Safety Code; 40 CFR Section 264.75.

66264.76. Unmanifested Waste Report.

If a facility accepts for transfer, 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 Section 66263.20(e)(2) of this division, and if the waste is not excluded from the manifest requirement of this chapter, then the owner or operator shall prepare and submit a single copy of a report to the Department within fifteen days after receiving the waste. The unmanifested waste report shall be submitted in the form of a letter to the Department. Such report shall be designated 'Unmanifested Waste Report' and include the following information:

(a) The Identification Number, name, and address of the facility;

(b) The date the facility received the waste;

(c) The Identification Number, name, and address of the generator and the transporter, if available;

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

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

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

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

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.76.

66264.77. Additional Reports.

In addition to submitting the annual reports and unmanifested waste reports described in Sections 66264.75 and 66264.76, the owner or operator shall also report to the Department:

(a) Releases, fires, and explosions as specified in Section 66264.56 (j);

(b) Facility closures specified in Section 66264.115; and

(c) As otherwise required by Chapter 14 Articles 6 and 11 through 14 of this division.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.77.

Article 6.Water Quality Monitoring and Response Programs For Permitted Facilities

66264.90. Applicability.

(a) The regulations in this article apply to owners or operators of permitted hazardous waste facilities. A surface impoundment, waste pile, land treatment unit or landfill that receives or has received hazardous waste after July 26, 1982 shall comply with the requirements of this article for purposes of detecting, characterizing, and responding to releases to groundwater, surface water or the unsaturated zone. The Department shall require an owner or operator of a surface impoundment, waste pile, land treatment unit or landfill that ceased receiving hazardous waste by July 26, 1982 to comply with the requirements of this article if the Department determines that constituents in or derived from waste placed in the surface impoundment, waste pile, land treatment unit or landfill may pose a threat to human health or the environment. A surface impoundment, waste pile, land treatment unit or landfill required to comply with the provisions of this article is hereinafter referred to as a "regulated unit".

(b) The facility permit shall contain assurances of financial responsibility for completing corrective action for all releases from any regulated unit at the facility.

(c) The regulations under this article apply during the active life of the regulated unit (including the closure period). After closure of the regulated unit, the regulations in this article apply during the postclosure care period under Section 66264.117 of Article 7 of this chapter and during any compliance period under Section 66264.96 unless:

(1) The regulated unit has been in compliance with the water quality protection standard for a period of three consecutive years; and

(2) All waste, waste residues, contaminated containment system components, contaminated subsoils and all other contaminated geologic materials are removed or decontaminated at closure.

(d) Regulations in this article apply to miscellaneous units when necessary to comply with Sections 66264.601 through 66264.603 of Article 16 of this chapter.

(e) For all regulated units which are operating, have operated or have received all permits necessary for construction or operation on or before the effective date of this article, the owner or operator shall prepare an application for a permit modification pursuant to Chapter 21 of this Division to establish monitoring programs that comply with the provisions of this article and submit this application to the Department within 180 days of the effective date of this article. The owner or operator of such regulated

units shall begin any necessary construction within 30 days of receiving approval from the Department and shall implement the approved monitoring programs according to a schedule of compliance established by the Department.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.90.

66264.91. Required Programs.

(a) An owner or operator subject to this article shall conduct a monitoring and response program for each regulated unit at the facility as follows:

(1) The owner or operator shall institute a detection monitoring program under Section 66264.98 except as required under subsections (a)(2), (a)(3) and (a)(4) of this section;

(2) The owner or operator shall institute an evaluation monitoring program under Section 66264.99 whenever there is statistically significant evidence of a release, pursuant to Section 66264.98(g) or (i), from the regulated unit during a detection monitoring program;

(3) The owner or operator shall institute an evaluation monitoring program under Section 66264.99 whenever there is significant physical evidence of a release from the regulated unit. Significant physical evidence of a release includes unexplained volumetric changes in surface impoundments, unexplained stress in biological communities, unexplained changes in soil coloration, visible signs of leachate migration, unexplained water table mounding beneath or adjacent to the regulated unit, and any other change to the environment that could reasonably be expected to be the result of a release from the regulated unit; and

(4) The owner or operator shall institute a corrective action program under Section 66264.100 when the Department determines pursuant to Section 66264.99 that the assessment of the nature and extent of the release and the design of the corrective action program have been satisfactorily completed and the Department approves the application for a permit modification for corrective action submitted by the owner or operator during an evaluation monitoring program pursuant to Section 66264.99(d) or Section 66265.99(d).

(b) The Department shall specify in the facility permit the specific elements of each monitoring and response program. For each regulated unit, the Department shall include one or more of the programs identified in subsection (a) of this section in the facility permit as may be necessary to protect human health or the environment and shall 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 Department shall consider the potential adverse effects on human health or the environment that might occur before final administrative action on a permit modification application to incorporate such a program could be taken.

(c) In conjunction with an evaluation monitoring program or a corrective action program, the owner or operator shall continue to conduct a detection monitoring program under Section 66264.98 as

necessary to provide the best assurance of the detection of subsequent releases from the regulated unit.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.91.

66264.92. Water Quality Protection Standard.

(a) For each regulated unit, the Department shall establish a water quality protection standard in the facility permit. This water quality protection standard shall consist of the list of constituents of concern under Section 66264.93, the concentration limits under Section 66264.94, and the point of compliance and all monitoring points under Section 66264.95. This water quality protection standard shall apply during the active life of the regulated unit, the post-closure care period under Section 66264.117 of Article 7 of this chapter, and any compliance period under Section 66264.96.

(b) If an owner or operator is conducting a detection monitoring program in conjunction with an evaluation monitoring program or a corrective action program for a regulated unit pursuant to Section 66264.91(c), the Department may establish separate water quality protection standards for each program.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Section 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.92.

66264.93. Constituents of Concern.

For each regulated unit, the Department shall specify in the facility permit the constituents of concern to which the water quality protection standard of Section 66264.92 applies. Constituents of concern are the waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the regulated unit.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.93.

66264.94. Concentration Limits.

(a) For each constituent of concern specified pursuant to Section 66264.93, the owner or operator shall propose one of the following for each medium (groundwater, surface water and the unsaturated zone) monitored pursuant to Section 66264.97:

(1) A concentration limit not to exceed the background value of that constituent as determined under Section 66264.97(e)(11)(A);

(2) That the permit include a statement that, at any given time, the concentration limit for that constituent will be equal to the background value of that constituent, as determined pursuant to Section 66264.97(e)(11)(B); or

(3) A concentration limit greater than background established pursuant to this section for a corrective action program.

(b) The Department shall review the proposed concentration limits and statements and shall approve, modify or disapprove each proposed limit and each proposed statement. Upon final approval by the Department, each concentration limit and each statement shall be specified in the facility permit. The Department shall only approve different concentration limits for different monitoring points in the same medium where necessary:

(1) To describe background conditions in multiple surface water bodies, multiple aquifers or geochemically dissimiliar zones in the same aquifer;

(2) Because the statistical method approved for a constituent uses intrawell comparisons procedures; or

(3) Because concentration limits greater than background have been established for a corrective action program at the monitoring points in the zone affected by a release from the regulated unit.

(c) For a corrective action program, the Department shall establish a concentration limit for a constituent of concern that is greater than the background value of that constituent only if the owner or operator demonstrates and the Department finds that it is technologically or economically infeasible to achieve the background value for that constituent and that the constituent will not pose a substantial present or potential hazard to human health or the environment as long as the concentration limit greater than background is not exceeded. In making this finding, the Department shall consider the factors specified in subsection (d) of this section, the results of the engineering feasibility study submitted pursuant to Section 66264.99(c), data submitted by the owner or operator pursuant to Section 66264.99(d)(2) to support the proposed concentration limit greater than background, public testimony on the proposal and any additional data obtained during the evaluation monitoring program.

(d) In establishing a concentration limit greater than background for a constituent of concern, the Department shall consider the following factors:

(1) Potential adverse effects on groundwater quality, considering:

(A The physical and chemical characteristics of the waste in the regulated unit;

(B) The hydrogeologic characteristics of the facility and surrounding land;

(C) The quantity of groundwater and the direction of groundwater flow;

(D) The proximity and withdrawl rates of groundwater users;

(E) The current and potential future uses of groundwater in the area;

(F) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;

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

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

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

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

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

(B) The hydrogeologic characteristics of the facility and surrounding land;

(C) The quantity and quality of groundwater, and the direction of groundwater flow;

(D) The patterns of precipitation in the region;

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

(F) The current and potential future uses of surface waters in the area;

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

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

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

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

(e) In no event shall a concentration limit greater than background established under this section for a constituent of concern exceed any of the following:

(1) A maximum contaminant level (MCL) for that constituent promulgated under Section 141.2 of the Safe Drinking Water Act (40 CFR Part 141 Subpart B) or a health or environmentally based standard promulgated by USEPA or the Department for the medium of concern;

(2) The lowest concentration that the owner or operator demonstrates and the Department finds is technologically and economically achievable; or

(3) The water quality objective for that constituent established in the applicable Water Quality Control Plan. If no water quality objective has been established for a constituent of concern in the applicable Water Quality Control Plan, the concentration limit greater than background shall not exceed the concentration necessary to protect the beneficial uses of water identified in the applicable plan.

(f) For groundwater, in evaluating risk pursuant to subsection (d) of this section to any biological receptor, the risk shall be evaluated as if exposure would occur at the point of compliance.

(g) Proposals for concentration limits greater than background shall include a demonstration that the aggregate of hazardous constituents in the environment will not result in excessive exposure to a sensitive biological receptor. In the absence of scientifically valid data to the contrary, theoretical risks from chemicals associated with the release from the regulated unit shall be considered additive across all media of exposure, and shall be considered additive for all chemicals having similar toxicological effects or having carcinogenic effects.

(h) A concentration limit greater than background may only be applied during corrective action, or during detection monitoring following corrective action, at monitoring points at which statistically significant evidence of the release has been determined.

(i) When an owner or operator is conducting a detection monitoring program after a corrective action program has been terminated, each concentration limit greater than background shall be re-evaluated during each permit review. If the Department, upon re-evaluation, determines that the concentration of a constituent of concern in groundwater, surface water or the unsaturated zone is lower than its associated concentration limit by a statistically significant amount, the concentration limit for that constituent shall be lowered to reflect current water quality.

(j) In making any determination under subsection (d) of this section about the use of groundwater in the area around the facility the Department shall consider any identification of underground sources of drinking water made under 40 CFR Chapter 1 Section 144.7.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.94.

66264.95. Monitoring Points and the Point of Compliance.

(a) For each regulated unit, the Department shall specify in the facility permit the point of compliance at which the water quality protection standard of Section 66264.92 applies. The point of compliance is a vertical surface, located at the hydraulically downgradient limit of the waste management area that extends through the uppermost aquifer underlying the regulated unit. For each regulated unit, the Department shall specify monitoring points at the point of compliance and additional monitoring points at locations determined pursuant to Section 66264.97 at which the water quality protection standard under Section 66264.92 applies and at which monitoring shall be conducted.

(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 the regulated unit.

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

(2) If the facility contains contiguous regulated units and monitoring along a shared boundary would impair the integrity of a containment or structural feature of any of the units, the waste management area may be described by an imaginary line along the outer boundary of the contiguous regulated units. This provision

only applies to contiguous regulated units that have operated or have received all permits necessary for construction and operation before the effective date of this article.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.95.

66264.96. Compliance Period.

(a) The Department shall specify in the facility permit the compliance period for each regulated unit. The compliance period is the number of years equal to the active life of the regulated unit (including any waste management activity prior to permitting, and the closure period) and constitutes the minimum period of time during which the owner or operator shall conduct a water quality monitoring program subsequent to a release from the regulated unit.

(b) The compliance period begins each time the owner or operator initiates an evaluation monitoring program meeting the requirements of Section 66264.99.

(c) If the owner or operator is engaged in a corrective action program at the scheduled end of the compliance period specified under subsection (a) of this section, the compliance period is extended until the owner or operator can demonstrate that the regulated unit has been in compliance with the water quality protection standard of Section 66264.92 for a period of three consecutive years.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.96.

66264.97. General Water Ouality Monitoring and System Requirements.

(a) The owner or operator shall comply with the requirements of this section for any water quality monitoring program developed to satisfy Sections 66264.98, 66264.99 or 66264.100.

(b) Groundwater Monitoring System.

(1) Except as provided under subsection (e)(3) of this section, the owner or operator shall establish a groundwater monitoring system for each regulated unit. This groundwater monitoring system shall include:

(A) A sufficient number of background monitoring points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater that has not been affected by a release from the regulated unit;

(B) For a detection monitoring program under Section 66264.98:

1. A sufficient number of monitoring points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance and to allow for the detection of a release from the regulated unit;

2. A sufficient number of monitoring points installed at additional locations and depths to yield groundwater samples from the uppermost aquifer as necessary to provide the best assurance of the earliest possible detection of a release from the regulated unit; and

3. A sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to yield groundwater samples from other aquifers and from zones of perched water as necessary to provide the best assurance of the earliest possible detection of a release from the regulated unit.

(C) For an evaluation monitoring program under Section 66264.99:

1. A sufficient number of monitoring points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance, and at other locations in the uppermost aquifer as necessary, to provide the data needed to evaluate changes in water quality due to the release from the regulated unit; and

2. A sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to yield groundwater samples from other aquifers and zones of perched water as necessary to provide the data needed to evaluate changes in water quality due to the release from the regulated unit.

(D) For a corrective action program under Section 66264.100 of this article:

1. A sufficient number of monitoring points installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer that represent the quality of groundwater passing the point of compliance, and at other locations in the uppermost aquifer as necessary, to provide the data needed to evaluate compliance with the water quality protection standard and to evaluate the effectiveness of the corrective action program; and

2. A sufficient number of monitoring points and background monitoring points installed at appropriate locations and depths to yield groundwater samples from other aquifers and zones of perched water as necessary to provide the data needed to evaluate compliance with the water quality protection standard and to evaluate the effectiveness of the corrective action program.

(2) The groundwater monitoring system may include background monitoring points that are not hydraulically upgradient of the regulated unit if the owner or operator demonstrates to the satisfaction of the Department that sampling at other monitoring points will provide samples that are representative of the background quality of groundwater or are more representative than those provided by the upgradient monitoring points.

(3) A copy of drillers' logs shall be filed with the Department on Department of Water Resources form DWR 188-Rev 12-86, available from the Department of Water Resources, 3251 S Street, Sacramento, CA 95816-7017, or by phone at (916) 322-7171.

(4) All monitoring wells shall be cased and constructed in a manner that maintains the integrity of the monitoring well bore hole and prevents the bore hole from acting as a conduit for contaminant transport.

(5) The sampling interval of each monitoring well shall be appropriately screened and fitted with an appropriate filter pack to enable collection of representative groundwater samples.

(6) For each monitoring well the annular space (i.e., the space between the bore hole and well casing) above and below the sampling interval shall be appropriately sealed to prevent entry of contaminants from the surface, entry of contaminants from the unsaturated zone, cross contamination of saturated zones and contamination of samples.

(7) All monitoring wells shall be adequately developed to enable collection of representative groundwater samples.

(c) Surface Water Monitoring System.

(1) The owner or operator shall establish a surface water monitoring system to monitor each surface water body that could be affected by a release from the regulated unit.

(2) Each surface water monitoring system shall include:

(A) A sufficient number of background monitoring points established at appropriate locations and depths to yield samples from each surface water body represent the quality of the surface water that has not been affected by a release from the regulated unit;

(B) For a detection monitoring program under Section 66264.98, a sufficient number of monitoring points established at appropriate locations and depths to yield samples from each surface water body that provide the best assurance of the earliest possible detection of a release from the regulated unit;

(C) For an evaluation monitoring program under Section 66264.99, a sufficient number of monitoring points established at appropriate locations and depths to yield samples from each surface water body that provide the data necessary to evaluate changes in water quality due to the release from the regulated unit; and

(D) For a corrective action program under Section 66264.100, a sufficient number of monitoring points established at appropriate locations and depths to yield samples that provide the data necessary to evaluate compliance with the water quality protection

standard and to evaluate the effectiveness of the corrective action program.

(d) Unsaturated Zone Monitoring System.

(1) Except as otherwise provided in subsection (d)(5) of this section, the owner or operator shall establish an unsaturated zone monitoring system for each regulated unit.

(2) The unsaturated zone monitoring system shall include:

(A) A sufficient number of background monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that represent the quality of soil-pore liquid that has not been affected by a release from the regulated unit;

(B) For a detection monitoring program under Section 66264.98, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements that provide the best assurance of the earliest possible detection of a release from the regulated unit;

(C) For an evaluation monitoring program under Section 66264.99, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements as necessary to provide the data needed to

evaluate changes in water quality due to the release from the regulated unit; and

(D) For a corrective action program under Section 66264.100, a sufficient number of monitoring points established at appropriate locations and depths to yield soil-pore liquid samples or soil-pore liquid measurements as necessary to provide the data needed to evaluate compliance with the water quality protection standard and to evaluate the effectiveness of the corrective action program.

(3) Background monitoring points shall be installed at a background plot having soil characteristics similar to those of the soil underlying the regulated unit.

(4) Liquid recovery types of unsaturated zone monitoring (e.g., the use of lysimeters) is required unless the owner or operator demonstrates to the satisfaction of the Department that such methods of unsaturated zone monitoring cannot provide an indication of a release from the regulated unit. The Department shall require complementary or alternative (non-liquid recovery) types of unsaturated zone monitoring as necessary to provide the best assurance of the earliest possible detection of a release from the regulated unit.

(5) Unsaturated zone monitoring is required at all new regulated units unless the owner or operator demonstrates to the satisfaction of the Department that no method for unsaturated zone monitoring

can provide any indication of a release from that regulated unit. For a regulated unit that has operated or has received all permits necessary for construction and operation before the effective date of this article, unsaturated zone monitoring is required unless the owner or operator demonstrates to the satisfaction of the Department that installation of unsatuated zone monitoring devices is not technically feasible.

(6) The owner or operator of a land treatment unit shall comply with the unsaturated zone monitoring and response requirements for that unit in Article 13 of this chapter, in addition to the unsaturated zone monitoring requirements of this article.

(e) General Monitoring Requirements.

(1) All monitoring systems shall be designed and certified by a registered geologist or a registered civil engineer.

(2) All monitoring wells and all other borings drilled to satisfy the requirements of this article shall be logged during drilling under the direct supervision of a registered geologist. These logs shall be submitted to the Department upon completion of drilling.

(A) Soil shall be described in the geologic log according to the Unified Soil Classification System as presented in Geotechnical Branch Training Manuals nos. 4, 5 and 6, published by the United

States Bureau of Reclamation, January 1986 incorporated by reference in Section 66260.11 of this Division.

(B) Rock shall be described in the geologic log in a manner appropriate for the purpose of the investigation.

(C) Where possible, the depth and thickness of saturated zones shall be recorded in the geologic log.

(3) If a facility contains contiguous regulated units, separate groundwater monitoring systems are not required for each such unit if the owner or operator demonstrates to the satisfaction of the Department that the water quality monitoring program for each unit will enable the earliest possible detection and measurement of a release from that unit.

(4) The water quality monitoring program shall include consistent sampling and analytical procedures that are designed to ensure that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points. At a minimum the program shall include a detailed description of the procedures and techniques for:

(A) Sample collection (e.g., purging techniques, sampling equipment and decontamination of sampling equipment);

(B) Sample preservation and shipment;

(C) Analytical procedures; and

(D) Chain of custody control.

(5) The water quality monitoring program shall include appropriate sampling and analytical methods for groundwater, surface water and the unsaturated zone that accurately measure the concentration of each constituent of concern and the concentration or value of each monitoring parameter.

(6) For each regulated unit, the owner or operator shall collect all data necessary for selecting the appropriate statistical method pursuant to subsections (e)(7), (e)(8) and (e)(9) of this section and for establishing the background values pursuant to subsection (e)(11) of this section. At a minimum, this data shall include analytical data obtained during quarterly sampling of all background monitoring points for a period of one year, including the times of expected highest and lowest annual elevations of the groundwater surface. For a new regulated unit, this data shall be collected before wastes are discharged at the unit and background soil pore liquid data shall be collected from beneath the unit before the unit is constructed.

(7) Based on data collected pursuant to subsection (e)(6) of this section, the owner or operator shall propose one of the statistical methods specified in subsection (e)(8) of this section for each constituent of concern and for each monitoring parameter. These

methods, upon approval by the Department, shall be specified in the facility permit and shall be used in evaluating water quality monitoring data. The specifications for each statistical method shall include a detailed description of the criteria to be used for determining statistically significant evidence of any release from the regulated unit and for determining compliance with the water quality protection standard. Each statistical test specified for a particular constituent of concern or monitoring parameter shall be conducted separately for that constituent of concern or monitoring parameter at each monitoring point. Where practical quantitation limits are used in any of the following statistical methods to comply with subsection (e)(9)(E) of this section, the practical quantitation limit shall be proposed by the owner or operator for approval by the Department. The owner or operator shall demonstrate that use of the proposed statistical methods will be protective of human health and the environment and will comply with the performance standards outlined in subsection (e)(9) of this section.

(8) The owner or operator shall propose one of the following statistical methods:

(A) A parametric analysis of variance (ANOVA) followed in all instances by a multiple comparisons procedure to identify statistically significant evidence of a release from the regulated unit. The method shall include estimation and testing of the

contrasts between each monitoring point's mean and the background mean value for each constituent of concern or monitoring parameter;

(B) An ANOVA based on ranks followed in all instances by a multiple comparisons procedure to identify statistically significant evidence of a release from the regulated unit. The method shall include estimation and testing of the contrasts between each monitoring point's median and the background median values for each constituent of concern or monitoring parameter;

(C) A tolerance or prediction interval procedure in which an interval for each constituent of concern or monitoring parameter is established from the distribution of the background data, and the value for each constituent of concern or monitoring parameter at each monitoring point is compared to the upper tolerance or prediction limit;

(D) A control chart approach that gives control limits for each constituent of concern or monitoring parameter; or

(E) Another statistical test method submitted by the owner or operator for approval by the Department including, but not limited to, any statistical method which includes a procedure to verify that there is statistically significant evidence of a release from the regulated unit. If the statistical test method includes a verification procedure, this procedure shall consist of either a single composite retest (i.e., a statistical analysis of the

original data combined with newly-acquired data from the monitoring point at which evidence of a release has been indicated) or shall consist of at least two discrete retests (i.e., statistical analyses which analyze only newly-acquired data from the monitoring point at which evidence of a release has been indicated). The verification procedure shall comply with the following requirements in addition to the statistical performance standards under subsection (e)(9) of this section:

1. If the verification procedure consists of discrete retests, rejection of the null hypothesis for any one of the retests shall be considered confirmation of significant evidence of a release.

2. The number of additional samples collected and analyzed for use in the verification procedure shall be appropriate for the form of statistical test specified in the facility permit for that constituent of concern or monitoring parameter pursuant to subsection (e)(7) of this section. This number shall be greater than or equal to the number of samples specified in the facility permit for that constituent of concern or monitoring parameter pursuant to subsection (e)(12)(A) of this section;

3. If resampling at the interval identified for use in the initial statistical test pursuant to subsection (e)(12)(B) of this section would cause the entire resampling effort to take longer than 30 days, the sampling interval for use in the verification procedure shall be reduced to ensure that all samples are collected and

submitted for laboratory analysis within 30 calendar days from the time that the owner or operator determines statistically significant evidence of a release pursuant to subsection 66264.98(g) or (i);

4. For a verification procedure containing a composite retest, the statistical verification procedure shall be based on all data obtained from the initial sampling event combined with all data obtained during the resampling event shall analyze data obtained during its respective resampling event(s) and no data shall be shared between retests;

5. For a verification procedure consisting of a composite retest, the statistical test method used in the verification procedure shall be the same as the method used in the initial statistical comparison, except that the statistical test used in the verification procedure shall be conducted at a Type I error level of no less than 0.05 for both the experiment wise analysis (if any) and the individual monitoring point comparisons; therefore, if a control chart approach is used to evaluate water quality monitoring data, the upper limit on an X-Bar or R-Chart must be set at no more than 1.645 standard deviations of the statistic plotted for a one-sided statistical comparison or at no more than 1.96 standard deviations of the statistic plotted for a two-sided statistical comparison;

6. For a verification procedure consisting of discrete retests, the statistical method used shall be the same as the method used in the initial statistical comparison. The critical value for the tests shall be chosen so that the Type I error rate for all individual monitoring point comparisons is the same, whether for an initial test or for a retest, and is equal-to-or-greater-than either

$$\sqrt{1-(.95)^{1/(m \cdot w \cdot s)}} \cdot \sqrt{1/r} \quad \text{or} \quad (1-0.95^{1/(m \cdot w \cdot s)})^{0.5} \cdot (1/r)^{0.5}$$

$$1-(.99)^{1/s}$$

whichever is larger, where: m = the number of monitoring parameters; w = the number of monitoring points at the waste management units; s = the number of times that the owner or operator performs statistical analysis within a period of six months, exclusive of retests (i.e., s >= 1); and r = the number of independent retests that are to be conducted at a monitoring point (i.e., r >= 2); and

7. The owner or operator shall report to the Department by certified mail the results of both the initial statistical test and the results of the verification procedure as well as all concentration data collected for use in these tests within seven days of the last laboratory analysis of the samples collected for the verification procedure.

8. The verification procedure shall only be performed for the constituent(s) which has shown statistically significant evidence of a release, and shall only be performed for that (those) monitoring point at which a release has been indicated.

(9) Each statistical method chosen under subsection (e)(7) of this section for specification in the facility permit shall comply with the following performance standards for each six-month period:

(A) The statistical method used to evaluate water quality monitoring data shall be appropriate for the distribution of the constituent of concern or monitoring parameter to which it is applied and shall be the least likely of the appropriate methods to fail to identify a release from the regulated unit. If the distribution of a constituent of concern or monitoring parameter is shown by the owner or operator to be inappropriate for a normal theory test, then the data shall be either transformed so that the distribution of the transformed data is appropriate for a normal theory test or a distribution-free theory test shall be used. If the distributions for the constituents of concern or monitoring parameters differ, more than one statistical method may be needed;

(B) If an individual monitoring point comparison procedure is used to compare an individual monitoring point constituent concentration or monitoring parameter value w!th a concentration limit in the water quality protection standard or with a background monitoring parameter value, the test shall be done at a Type I error level no

less than 0.01. If a multiple comparisons procedure is used, the Type I experimentwise error rate shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual monitoring point comparison shall be maintained. This performance standard does not apply to tolerance intervals, prediction intervals or control charts;

(C) If a control chart approach is used to evaluate water quality monitoring data, the specific type of control chart and its associated statistical parameter values (e.g., the upper control limit) shall be proposed by the owner or operator and approved by the Department if the Department finds it to be protective of human health and the environment. Any control charting procedure must have a false-positive rate of no less than one percent for each monitoring point charted (e.g., upper control limits on X-bar or R-charts, used only once every six months, must be set at no more than 2.327 standard deviations of the statistic plotted for a one-sided statistical comparison or at no more than 2.576 standard deviations of the statistic plotted for a two-sided statistical comparison);

(D) If a tolerance interval or a prediction interval is used to evaluate water quality monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain shall be proposed by the owner or operator and approved by the Department if the Department finds these statistical parameters to be protective of human health and

the environment. These statistical parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentrations or values for each constituent of concern or monitoring parameter. The coverage of any tolerance interval used must be no more than 95 percent and the confidence coefficient must be no more than 95 percent for a six-month period. Prediction intervals shall be constructed with an experimentwise error rate of no less than five percent and an individual monitoring point error rate of no less than one percent;

(E) The statistical method shall account for data below the practical quantitation limit with one or more statistical procedures that are protective of human health and the environment. Any practical quantitation limit approved by the Department pursuant to subsection (e)(7) of this section that is used in the statistical method shall be the lowest concentration (or value) that can be reliably achieved within limits of precision and accuracy specified in the facility permit for routine laboratory operating conditions that are available to the facility. The Department shall consider the practical quantitation limits listed in Appendix IX to Chapter 14 for guidance purposes when specifying limits of precision and accuracy in the facility permit;

(F) If necessary, the statistical methods shall include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data; and

(G) Any quality control procedure that is approved by the Department for application to water quality data from downgradient monitoring points for a monitored medium shall also be applied to all newly-acquired background data from that medium. Any newly-acquired background monitoring datum that is rejected by an approved quality control procedure shall be maintained in the facility record but shall be excluded from use in statistical comparisons with downgradient water quality data.

(10) Based on the data collected pursuant to subsection (e)(6) of this section and the statistical methods proposed under subsection (e)(7) of this section, the owner or operator shall propose and justify the use of a procedure for determining a background value for each constituent of concern and for each monitoring parameter specified in the facility permit. These procedures shall be proposed for groundwater, surface water and the unsaturated zone. The owner or operator shall propose one of the following for approval by the Department:

(A) A procedure for determining the background value for each constituent or parameter that does not display appreciable natural variation; or

(B) A procedure for establishing and updating the background value for a constituent or parameter to reflect changes in the background water quality if the use of contemporaneous or pooled data provides

the greatest power to the statistical method for that constituent or paramenter.

(11) Upon approval of the procedures for determining background values proposed pursuant to subsection (e)(10) of this section, the Department shall specify in the facility permit one of the following for each constituent of concern and for each monitoring parameter:

(A) The background value established by the owner or operator using the procedure proposed pursuant to subsection (e)(10)(A) of this section; or

(B) A detailed description of the procedure to be used by the owner or operator for establishing and updating the background value as proposed pursuant to subsection (e)(10)(B) of this section.

(12) For each constituent of concern and monitoring parameter listed in the facility permit, the owner or operator shall propose, for approval by the Department, the sampling methods to be used to establish background values and the sampling methods to be used for monitoring pursuant to this article. Upon final approval by the Department, sampling methods consistent with the following shall be specified in the facility permit:

(A) The number and kinds of samples collected shall be appropriate for the form of statistical test employed, following generally

accepted statistical principles. The sample size shall be as large as necessary to ensure with reasonable confidence that:

1. For a detection monitoring program, a release from the regulated unit will be detected;

2. For an evaluation monitoring program, changes in water quality due to a release from the regulated unit will be recognized; and

3. For a corrective action program, compliance with the water quality protection standard and effectiveness of the corrective action program will be determined; and

(B) The sampling method (including the sampling freqency and the interval of time between successive samples) shall be appropriate for the medium from which samples are taken (e.g., groundwater, surface water and soil-pore liquid). The sampling method shall include either:

1. A sequence of at least four samples collected at least semiannually from each monitoring point and each background monitoring point and statistical analysis performed at least semi-annually. Samples shall be taken at an interval that assures, to the greatest extent possible, that an independent sample is obtained. The Department shall require more frequent sampling and statistical analysis when necessary to protect human health and the environment. For groundwater, the sampling frequency and the

interval between successive sampling events shall be based upon the rate of groundwater flow, and upon any variation in groundwater flow rate and direction. The rate of groundwater movement shall be calculated by reference to the aquifer's effective porosity, hydraulic conductivity and hydraulic gradient; or

2. An alternate sampling method. The alternate method shall provide for the collection of not less than one sample quarterly from each monitoring point and background monitoring point and statistical analysis performed at least quarterly.

(13) The groundwater portion of the monitoring program shall include an accurate determination of the groundwater surface elevation and field parameters (temperature, electrical conductivity, turbidity and pH) at each well each time groundwater is sampled.

(14) The owner or operator shall graph all analytical data from each monitoring point and background monitoring point and shall submit these graphs to the Department at least annually. Unless the owner or operator receives written approval from the Department to use an alternate procedure, each graph shall represent data from one monitoring point or background monitoring point and one constituent of concern or monitoring parameter. Graphs shall be at a scale appropriate to show trends or variations in water quality.

(15) In addition to the water quality sampling conducted pursuant to the requirements of this article, the owner or operator shall measure the water level in each well and determine groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional aquifers monitored pursuant to subsection (b)(1) of this section at least quarterly, including the times of expected highest and lowest elevations of the water levels in the wells.

(16) Water quality monitoring data collected in accordance with this article, including actual values of constituents and parameters, shall be maintained in the facility operating record. The Department shall specify in the permit when the data shall be submitted for review.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.97.

66264.98. Detection Monitoring Program.

(a) An owner or operator required, pursuant to Section 66264.91, to establish a detection monitoring program for a regulated unit shall, at a minimum, comply with the requirements of this section for that unit.

(b) The owner or operator shall install water quality monitoring systems that are appropriate for detection monitoring and that comply with the provisions of Section 66264.97.

(c) The owner or operator shall establish a background value pursuant to Section 66264.97(e)(11) for each monitoring parameter specified under subsection (e) of this section and for each constituent of concern specified under Section 66264.93.

(d) The Department shall specify the water quality protection standard under Section 66264.92 in the facility permit.

(e) The owner or operator shall propose for approval by the Department a list of monitoring parameters for each medium (groundwater, surface water, and the unsaturated zone) to be monitored pursuant to Section 66264.97. The list for each medium shall include those physical parameters, hazardous constituents, waste constituents and reaction products that provide a reliable indication of a release from the regulated unit to that medium.

The Department shall specify each list of monitoring parameters 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 expected or demonstrated correlation between the proposed monitoring parameters and the constituents of concern specified for the unit under Section 66264.93;

(3) The mobility, stability and persistence of waste constituents or their reaction products;

(4) The detectability of physical parameters, waste constituents and reaction products; and

(5) The background values and the coefficients of variation of proposed monitoring parameters in groundwater, surface water and the unsaturated zone.

(f) The owner or operator shall conduct sampling and analyses for the monitoring parameters listed in the facility permit pursuant to subsection (e) of this section. The Department shall specify the frequencies for collecting samples and conducting statistical analyses pursuant to Section 66264.97(e)(12). For groundwater, sampling shall be scheduled to include the times of expected highest and lowest annual elevations of the groundwater surface.

(9) In addition to monitoring for the monitoring parameters specified under subsection (e) of this section, the owner or operator shall periodically monitor for all constituents of concern specified in the facility permit and determine whether there is statistically significant evidence of a release for any constituent of concern using the statistical procedure specified pursuant to Section 66264.97(e)(7). The Department shall specify in the facility permit the frequencies and locations for monitoring pursuant to this subsection after considering the degree of certainty associated with the expected or demonstrated correlation between values for monitoring parameters and values for the constituents of concern. Monitoring pursuant to this subsection shall be conducted at least every five years.

(h) The owner or operator shall maintain a record of water quality analytical data as measured and in a form necessary for the determination of statistical significance under subsections (g) and (i) of this section.

(i) For each monitoring point, the owner or operator shall determine whether there is statistically significant evidence of a release from the regulated unit for any monitoring parameter specified in the permit pursuant to subsection (e) of this section at a frequency specified pursuant to subsection (f) of this section.

(1) In determining whether statistically significant evidence of a release from the regulated unit exists, the owner or operator shall use the method(s) specified in the permit under Section 66264.97(e)(7). This method(s) shall be used to compare data collected at the monitoring point(s) with the background water quality data.

(2) The owner or operator shall determine whether there is statistically significant evidence of a release from the regulated unit at each monitoring point within a reasonable period of time after completion of sampling. The Department shall specify in the facility permit what period of time is reasonable, after considering the complexity of the statistical test and the availability of laboratory facilities to perform the analysis of samples.

(3) The provisions of this section shall not preclude the Department from making an independent finding that there is statistically significant evidence of a release from the regulated unit. If the Department makes such a finding, the owner or operator shall comply with the provisions of this section that are required in response to statistically significant evidence of a release from the regulated unit.

(j) If the owner or operator determines pursuant to subsection (g) or (i) of this section that there is statistically significant evidence of a release from the regulated unit for any monitoring

parameter or constituent of concern at any monitoring point, the owner or operator:

(1) Shall notify the Department of the finding by certified mail within seven days of such determination. The notification shall identify for each affected monitoring point the monitoring parameters and constituents of concern that have indicated statistically significant evidence of a release from the regulated unit; and

(2) May immediately initiate a procedure to verify that there is statistically significant evidence of a release from the regulated unit for a parameter or constituent which has indicated a release at a monitoring point if that verification procedure has been specified for that constituent or parameter in the facility permit pursuant to Section 66264.97(e)(8)(E).

(k) If the resampling pursuant to subsection (j)(2) of this section confirms that there is statistically significant evidence of a release from the regulated unit or if the owner or operator does not resample pursuant to subsection (j)(2) of this section, then the owner or operator shall:

(1) For that regulated unit, immediately sample all monitoring points in the affected medium (groundwater, surface water or the unsatuated zone) and determine the concentration of all constituents of concern;

(2) For that regulated unit, immediately sample all monitoring points in the affected medium (groundwater, surface water or the unsaturated zone) and determine whether constituents in the list of Appendix IX to Chapter 14 are present, and if so, in what concentration(s);

(3) For any Appendix IX constituents found in the analysis pursuant to subsection (k)(2) of this section that are not specified in the list of constituents of concern for that unit, the owner or operator may resample within one month and repeat the analysis for those constituents. Each constituent detected in both analyses shall be added to the list of constituents of concern specified in the facility permit for evaluation monitoring unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit. If the owner or operator does not resample for the constituents found pursuant to subsection (k)(2) of this section, the constituents found during this initial Appendix IX analysis will be added to the list of constituents of concern specified in the facility permit for evaluation monitoring unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit;

(4) For each Appendix IX constituent added to the list of constituents of concern pursuant to subsection (k)(3) of this section, the owner or operator shall:

(A) Collect all data necessary for establishing the background concentration for that constituent and for selecting an appropriate statistical procedure pursuant to Section 66264.97(e)(6);

(B) Propose an appropriate statistical procedure pursuant to Section 66264.97(e)(7);

(C) Propose a procedure to establish the background concentration for that constituent pursuant to Section 66264.97(e)(10); and

(D) Establish the background concentration pursuant to Section 66264.97(e)(11);

(5) Within 90 days of determining statistically significant evidence of a release, submit to the Department an application for a permit modification to establish an evaluation monitoring program meeting the provisions of Section 66264.99. The application shall include the following information:

(A) An identification of the concentration of each constituent of concern at each monitoring point as determined during the most recent sampling events, and an identification of the concentration of each Appendix IX constituent at each monitoring point for the regulated unit in the affected medium (groundwater, surface water or the unsaturated zone);

(B) Any proposed changes to the water quality monitoring systems at the facility necessary to meet the requirements of Section 66264.99;

(C) Any proposed additions or changes to the monitoring frequency, sampling and analytical procedures or methods or statistical methods used at the facility necessary to meet the requirements of Section 66264.99;

(D) A detailed description of the measures to be taken by the owner or operator to assess the nature and extent of the release from the regulated unit;

(6) Within 180 days of determining statistically significant evidence of a release, submit to the Department an engineering feasibility study for a corrective action program necessary to meet the requirements of Section 66264.100. At a minimum, the feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern; and

(7) If the owner or operator determines, pursuant to subsection (g) or (i) of this section, that there is statistically significant evidence of a release from the regulated unit at any monitoring point, the owner or operator may demonstrate that a source other than the regulated unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling,

analysis or statistical evaluation, or by natural variation in the groundwater, surface water or the unsaturated zone. The owner or operator may make a demonstration pursuant to this subsection in addition to, or in lieu of, submitting both a permit modification application pursuant to subsection (k)(5) of this section and an engineering feasibility study pursuant to subsection (k)(6) of this section; however, the owner or operator is not relieved of the requirements specified in subsections (k)(5) and (k)(6) of this section unless the demonstration made under this subsection successfully shows that a source other than the regulated unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis or evaluation or from natural variation in groundwater, surface water or the unsaturated zone. In making a demonstration pursuant to this subsection, the owner or operator shall:

(A) Within seven days of determining statisically significant evidence of a release, notify the Department by certified mail that the owner or operator intends to make a demonstration pursuant to this subsection;

(B) Within 90 days of determining statistically significant evidence of a release, submit a report to the Department that demonstrates that a source other than the regulated unit caused the evidence, or that the evidence resulted from error in sampling, analysis or evaluation or from natural variation in groundwater, surface water or the unsaturated zone;

(C) Within 90 days of determining statistically significant evidence of a release, submit to the Department an application for a permit modification to make any appropriate changes to the detection monitoring program; and

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

(1) If the owner or operator determines that there is significant physical evidence of a release as described in Section 66264.91(a)(3) or that the detection monitoring program does not satisfy the requirements of this section, the owner or operator shall:

(1) Notify the Department by certified mail within seven days of such determination; and

(2) Within 90 days of such determination, submit an application for a permit modification to make any appropriate changes to the program.

(m) Any time the Department determines that the detection monitoring program does not satisfy the requirements of this section, the Department shall send written notification of such determination to the owner or operator by certified mail, return receipt requested. The owner or operator shall, within 90 days after receipt of such notification by the Department, submit an

application for a permit modification to make any appropriate changes to the program.

(n) For any regulated unit for which a detection monitoring program is established after the successful completion of a corrective action program pursuant to Section 66264.100(g):

(1) The Department shall include in the list of monitoring parameters for each medium (groundwater, surface water and the unsaturated zone) all hazardous constituents that have been detected in that medium due to a release from that regulated unit;

(2) The owner or operator shall analyze samples from all groundwater monitoring points at the point of compliance for that regulated unit and determine the concentration of each constituent contained in Appendix IX to Chapter 14 at least annually during any remaining years of the compliance period. If the owner or operator finds either an Appendix IX constituent at a concentration above the concentration limit established in the permit for that constituent or one that is not already identified in the permit as a monitoring parameter, the owner or operator may resample within one month of the original sample and repeat the analysis for those constituents. If the owner or operator does not resample, or if the resampling confirms that the concentration limit for a constituent has been exceeded or that a new constituent is present:

(A) The owner or operator shall report the concentration of each such constituent to the Department within seven days of the latest analysis;

(B) The Department shall add each such constituent to the list of monitoring parameters specified in the facility permit for groundwater unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit; and

(C) If a constituent is added to the list of monitoring parameters pursuant to subsection (n)(2)(B) of this section, the owner or operator shall immediately collect samples and conduct statistical tests for each monitoring parameter to determine whether there is statistically significant evidence of a release from the regulated unit.

NOTE: Authority cited: Sections 208, 25150, and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.98.

66264.99. Evaluation Monitoring Program.

(a) An owner or operator required pursuant to Section 66264.91 to establish an evaluation monitoring program for a regulated unit shall, at a minimum, comply with the requirements of this section for that unit. The evaluation monitoring program shall be used to assess the nature and extent of the release from the regulated unit and to design a corrective action program meeting the requirements of Section 66264.100.

(b) The owner or operator shall collect and analyze all data necessary to assess the nature and extent of the release from the regulated unit. This assessment shall include a determination of the spatial distribution and concentration of each constituent of concern throughout the zone affected by the release. The owner or operator shall complete and submit this assessment to the Department within 90 days of establishing an evaluation monitoring program.

(c) Based on the data collected pursuant to subsections (b) and (e) of this section, the owner or operator shall update the engineering feasibility study required under Section 66264.98(k)(6). The owner or operator shall submit this engineering feasibility study to the Department within 90 days of establishing an evaluation monitoring program.

(d) Based on the data collected pursuant to subsection (b) and (e) of this section and on the engineering feasibility study submitted pursuant to subsection (c) of this section, the owner or operator shall submit an application for a permit modification to establish a corrective action program meeting the requirements of Section 66264.100. The owner or operator shall submit this application for a permit modification to the Department within 90 days of establishing an evaluation monitoring program. The application shall at a minimum include the following information:

(1) A detailed assessment of the nature and extent of the release from the regulated unit;

(2) A proposed water quality protection standard, including any proposed concentration limits greater than background under Section 66264.94, and all data necessary to justify each such limit;

(3) A detailed description of proposed corrective action measures that will be taken to achieve compliance with the water quality protection standard proposed for a corrective action program; and

(4) A plan for a water quality monitoring program that will demonstrate the effectiveness of the proposed corrective action.

(e) In conjunction with the assessment conducted pursuant to subsection (b) of this section, and while awaiting final approval of the application for a permit modification submitted pursuant to

subsection (d) of this section, the owner or operator shall monitor groundwater, surface water and the unsaturated zone to evaluate changes in water quality resulting from the release from the regulated unit. In conducting this monitoring, the owner or operator shall comply with the following requirements:

(1) The owner or operator shall install water quality monitoring systems that are appropriate for evaluation monitoring and that comply with the provisions of Section 66264.97. These water quality monitoring systems may include all or part of existing monitoring systems;

(2) The owner or operator shall propose for approval by the Department a list of monitoring parameters for each medium (groundwater, surface water and the unsaturated zone) to be monitored pursuant to Section 66264.97. The list for each medium shall include all hazardous constituents that have been detected in that medium and shall include those physical parameters, waste constituents and reaction products that provide a reliable indication of changes in water quality resulting from the release from the regulated unit to that medium. The Department shall specify each list of monitoring parameters in the facility permit after considering the following factors:

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

(B) Information that demonstrates, to the satisfaction of the Department, a sufficient correlation between the proposed monitoring parameters and the constituents of concern specified for the unit;

(C) The mobility, stability and persistence of waste constituents or their reaction products;

(D) The detectability of physical parameters, waste constituents and reaction products; and

(E) The background values and the coefficients of variation of proposed monitoring parameters in groundwater, surface water and the unsaturated zone;

(3) The owner or operator shall conduct sampling and analyses for the monitoring parameters listed in the facility permit pursuant to subsection (e)(2) of this section. The Department shall specify in the facility permit the frequencies for collecting samples and for conducting statistical analyses pursuant to Section 66264.97(e)(12) to evaluate changes in water quality due to the release from the regulated unit. For groundwater, sampling shall be scheduled to include the times of expected highest and lowest annual elevations of the groundwater surface;

(4) In addition to monitoring for the monitoring parameters specified pursuant to subsection (e)(2) of this section, the owner

or operator shall periodically monitor for all constituents of concern specified in the facility permit and evaluate changes in water quality due to the release from the regulated unit. The Department shall specify the frequencies for monitoring pursuant to this subsection after considering the degree of certainty associated with the demonstrated correlation between values for monitoring parameters and values for the constituents of concern;

(5) The owner or operator shall conduct water quality monitoring for each monitoring parameter and each constituent of concern in accordance with Section 66264.97(e)(12). The owner or operator shall maintain a record of water quality analytical data as measured and in a form necessary for the evaluation of changes in water quality due to the release from the regulated unit;

(6) The owner or operator shall analyze samples from all monitoring points in the affected medium (groundwater, surface water or the unsaturated zone) for all constituents contained in Appendix IX to Chapter 14 at least annually to determine whether additional hazardous constituents are present and, if so, at what concentration(s). If the owner or operator finds Appendix IX constituents in the groundwater, surface water or the unsaturated zone that are not already identified in the permit as constituents of concern, the owner or operator may resample within one month and repeat the analysis for those constituents. If the second analysis confirms the presence of new constituents, the owner or operator shall report the concentration of these additional constituents to

the Department by certified mail within seven days after the completion of the second analysis and the Department shall add them to the list of constituents of concern specified in the facility permit unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit. If the owner or operator does not resample, then the owner or operator shall report the concentrations of these additional constituents to the Department by certified mail within seven days after completion of the initial analysis and the Department shall add them to the list of constituents of concern specified in the facility permit unless the owner or operator demonstrates to the satisfaction of the Department that the constituent is not reasonably expected to be in or derived from waste in the regulated unit; and

(7) While awaiting final approval of the application for a permit modification to establish a corrective action program, the owner or operator shall evaluate all water quality data obtained pursuant to subsection (e) of this section with respect to the design criteria for the corrective action program. If the evaluation indicates that the plan for corrective action is insufficient, the owner or operator shall:

(A) Notify the Department by certified mail within seven days of such determination; and

(B) Within 90 days of such determination, submit for approval by the Department any appropriate changes to the application for a permit modification.

(f) If the owner or operator demonstrates to the satisfaction of the Department that a source other than the regulated unit caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis or statistical evaluation, or by natural variation in groundwater, surface water or the unsaturated zone, the owner or operator shall submit an application for a permit modification to reinstitute a detection monitoring program meeting the requirements of Section 66264.98. This application shall include specifications for all appropriate changes to the monitoring program. In making a demonstration under this subsection, the owner or operator shall:

(1) Notify the Department by certified mail that the owner or operator intends to make a demonstration pursuant to this subsection;

(2) Submit a report to the Department that demonstrates that a source other than the regulated unit caused the evidence of a release or that the evidence resulted from error in sampling, analysis or evaluation, or from natural variation in groundwater, surface water or the unsaturated zone; and

(3) Continue to monitor in accordance with the evaluation monitoring program established pursuant to this section until the permit is modified.

(g) The Department shall require interim corrective action measures where necessary to protect human health or the environment.

(h) If the owner or operator determines that the evaluation monitoring program does not satisfy the requirements of this section, the owner or operator shall, within 90 days, submit an application for a permit modification to make any appropriate changes to the program.

(i) Any time the Department determines that the evaluation monitoring program does not satisfy the requirements of this section, the Department shall send written notification of such determination to the owner or operator by certified mail, return receipt requested. The owner or operator shall, within 90 days of such notification by the Department, submit an application for a permit modification to make appropriate changes to the program.

NOTE: Authority cited: Sections 208, 25150 and 25159 Health and Safety Code.
Reference: Sections 25150, 25159, and 25159.5 Health and Safety Code, 40 CFR Section 264.99.

66264.100. Corrective Action Program.

(a) An owner or operator required pursuant to Section 66264.91 to establish a corrective action program for a regulated unit shall, at a minimum, comply with the requirements of this section for that unit.

(b) The owner or operator shall take corrective action to remediate releases from the regulated unit and to ensure that the regulated unit achieves compliance with the water quality protection standard under Section 66264.92. The Department shall specify the water quality protection standard for corrective action in the facility permit.

(c) The owner or operator shall implement corrective action measures that ensure that constituents of concern achieve their respective concentration limits at all monitoring points and throughout the zone affected by the release, including any portions of the affected zone that extend beyond the facility boundary, by removing the waste constituents or treating them in place. The owner or operator shall take other action specified by the Department to prevent noncompliance with those limits due to a continued or subsequent release from the regulated unit including, but not limited to, source control. The permit shall specify the specific measures that will be taken.

(d) In conjunction with the corrective action measures, the owner or operator shall establish and implement a water quality monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for an evaluation monitoring program under Section 66264.99, and shall be effective in determining compliance with the water quality protection standard under Section 66264.92 and in determining the success of the corrective action measures under subsection (c) of this section.

(e) Corrective action measures taken pursuant to this section shall be initiated and completed by the owner or operator within a period of time specified by the Department in the facility permit.

(f) Corrective action measures taken pursuant to this section may be terminated when the owner or operator demonstrates to the satisfaction of the Department that the concentrations of all constituents of concern are reduced to levels below their respective concentration limits.

(g) After terminating the corrective action measures pursuant to subsection (f) of this section, the owner or operator shall remain in the corrective action program until:

(1) The owner or operator demonstrates to the satisfaction of the Department that the regulated unit is in compliance with the water quality protection standard. This demonstration shall be based on

the results of sampling and analysis for all constituents of concern for a period of one year; and

(2) The owner or operator submits and the Department approves an application for a permit modification to establish a detection monitoring program meeting the requirements of Section 66264.98.

(h) The owner or operator shall report, in writing, to the Department on the effectiveness of the corrective action program. The owner or operator shall submit these reports at least semiannually. More frequent reporting shall be required by the Department as necessary to ensure the protection of human health or the environment.

(i) If the owner or operator determines that the corrective action program does not satisfy the requirements of this section, the owner or operator shall, within 90 days of making the determination, submit an application for a permit modification to make any appropriate changes to the program.

(j) Any time the Department determines that the corrective action program does not satisfy the requirements of this section, the owner or operator shall, within 90 days of notification of such determination by the Department, submit an application for a permit modification to make any appropriate changes to the program.

NOTE: Authority cited: Sections 208, 25150 and 25159 Health and safety Code.

Reference: Sections 25150, 25159, and 25159.5 Health and Safety Code, 40 CFR Section 66264.100.

Article 7. Closure and Post-Closure

66264.110. Applicability.

Except as Section 66264.1 provides otherwise:

(a) Sections 66264.111 through 66264.115 (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

(b) Sections 66264.116 through 66264.120 (which concern post-closure care) apply to the owners and operators of:

(1) All hazardous waste disposal facilities;

(2) Waste piles and surface impoundments from which the owner or operator intends to remove the wastes at closure to the extent that these sections are made applicable to such facilities in Sections 66264.228 or 66264.258; and

(3) Tank systems that are required under Section 66264.197 to meet the requirements for landfills.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.110.

66264.111. Closure Performance Standard.

The owner or operator shall 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 protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or run-off, or waste decomposition products to the ground or surface waters or to the atmosphere; and

(c) Complies with the closure requirements of this chapter including, but not limited to, the requirements of Sections 66264.178, 66264.197, 66264.228, 66264.258, 66264.280, 66264.310, 66264.351, and 6664.601 through 66264.603.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5 and 25245, Health and Safety Code; 40 CFR Section 264.111.

66264.112. Closure Plan; Amendment of Plan.

(a) Written plan.

(1) The owner or operator of a hazardous waste management facility shall have a written closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous waste at partial or final closure are required by Sections 66264.228(c)(1)(A) and 66264.258(c)(1)(A) to have contingent closure plans. The plan shall be submitted with the permit application, in accordance with Section 66270.14(b)(13) of this division, or when otherwise requested by the Department. The plan shall be approved by the Department as part of the permit issuance procedures under Chapter 21 of this division. In accordance with Section 66270.32 of this division, the approved closure plan will become a condition of any permit.

(2) The Department's approval of the plan shall ensure that the approved closure plan is consistent with Sections 66264.111 through 66264.115 and the applicable requirements of Sections 66264.90 et seq., 66264.178, 66264.197, 66264.228, 66264.258, 66264.280, 66264.310, 66264.351 and 66264.601. Until final closure is completed and certified in accordance with Section 66264.115, a copy of the approved plan and all approved revisions shall be kept at the facility and furnished to the Department upon request, including request by mail.

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

(1) A description of how and when each hazardous waste management unit at the facility will be closed in accordance with Section 66264.111;

(2) A description of how and when final closure of the facility will be conducted in accordance with Section 66264.111. The description shall identify the maximum extent of the operations which will be unclosed during the active life of the facility;

(3) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the type(s) of the off-site hazardous waste management units to be used, if applicable;

(4) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for

determining the extent of decontamination required to satisfy the closure performance standard;

(5) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, ground-water monitoring, leachate collection, and run-on and run-off control;

(6) A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule shall include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover shall be included);

(7) An estimate of the expected year of final closure.

(c) Amendment of plan. The owner or operator shall submit a written notification of or request for a permit modification to authorize a change in the approved closure plan in accordance with the applicable procedures in Chapters 20 and 21 of this division. The written notification request shall include a copy of the amended closure plan for review or approval by the Department.

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

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

(A) Changes in operating plans or facility design affect the closure plan, or

(B) There is a change in the expected year of closure, or

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

(3) The owner or operator shall submit a written request for a permit modification including a copy of the amended closure plan for approval at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator shall request a permit modification no later than 30 days after the unexpected event. The Department will approve, disapprove, or modify this amended plan in accordance with the procedures in Chapters 20 and 21 of this division. In accordance

with Section 66270.32 of this division, the approved closure plan will become a condition of any permit issued.

(4) The Department may request modifications to the plan under the conditions described in Section 66264.112(c)(2). The owner or operator shall submit the modified plan within 60 days of the Department's request, or within 30 days if the change in facility conditions occurs during partial or final closure. Any modifications requested by the Department will be approved in accordance with the procedures in Chapters 20 and 21 of this division.

(d) Notification of partial closure and final closure.

(1) The owner or operator shall notify the Department in writing at least 60 days prior to the date on which the owner or operator expects to begin closure of a surface impoundment, waste pile, land treatment or landfill unit, or final closure of a facility with such a unit. The owner or operator shall notify the Department in writing at least 45 days prior to the date on which the owner or operator expects to begin final closure of a facility with only tanks or containers used for transfer, treatment or storage, or incinerator units to be closed. The Department may require, in waiting, a longer notice period of up to 180 days for any facility or unit if the Department determines that additional time would be required to review and make necessary amendments to the closure plan prior to the initiation of closure. Within 90 days after receiving such notification, the Department may review the closure plan to determine whether any factor has significantly changed since a prior review was undertaken,

or determine whether the plan is otherwise adequate or inadequate, and may prescribe additional requirements or request modifications to the plan.

(2) The date when the owner or operator "expects to begin closure" shall be either no later than the date on which any hazardous waste management unit receives the known final volume of hazardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. The Department shall approve an extension to this one-year limit if the owner or operator of a hazardous waste management unit demonstrates to the satisfaction of the Department that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes,the owner or operator has taken, and will continue to take, all steps necessary to comply with all applicable permit requirements, and the extension will not pose a threat to human health and the environment.

(3) If the facility's permit is terminated, or if the facility is otherwise ordered, by judicial decree or final order under Health and Safety Code Section 25358.3 or Article 8 of Chapter 6.5 of Division 20 of the Health and Safety Code, to cease receiving hazardous wastes or to close, then the requirements of this paragraph do not apply. However, the owner or operator shall close the facility in accordance with the deadlines established in Section 66264.113.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.112.

66264.113. Closure; Time Allowed for Closure.

(a) Within 90 days after receiving the final volume of hazardous wastes at a hazardous waste management unit or facility, the owner or operator shall treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Department shall approve a longer period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates to the satisfaction of the Department that:

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

(B) 1. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and

2. There is a reasonable likelihood that a person other than the owner or operator will recommence operation of the hazardous waste management unit or the facility within one year; and

3. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(2) The owner or operator has taken and will continue to take all steps to comply with all applicable permit requirements and the longer period will not pose a threat to human health and the environment.

(b) The owner or operator shall complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes at the hazardous waste management unit or facility. The Department shall approve an extension to the closure period if the owner or operator complies with all applicable requirements for requesting a modification to the permit and demonstrates that:

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

(B) 1. The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes; and

2. There is reasonable likelihood that a person other than the owner or operator will recommence operation of the hazardous waste management unit or the facility within one year; and

3. Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

(2) The owner or operator has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable permit requirements.

(c) The demonstrations referred to in subsections (a) and (b) of this section shall be made as follows: (1) The demonstrations in subsection (a) shall be made at least 30 days prior to the expiration of the 90-day period in subsection (a); and (2) the demonstration in subsection (b) shall be made at least 30 days prior to the expiration of the 180-day period in subsection (b) of this section.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.113.

66264.114. Disposal or Decontamination of Equipment, Structures and Soils.

During the partial and final closure periods, all contaminated equipment, structures and soils shall be properly disposed of or decontaminated by removing all hazardous waste and residues, unless otherwise specified in Sections 66264.197, 66264.228, 66264.258, 66264.280, or 66264.310. By removing all hazardous wastes and residues or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and shall handle that waste in accordance with all applicable requirements of Chapter 12 of this division.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.114.

66264.115. Certification of Closure.

Within 60 days of completion of partial closure, and within 60 days of the completion of final closure, the owner or operator shall submit to the Department, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification shall be signed by the owner or operator and by an independent qualified professional engineer, registered in California. Documentation supporting the independent qualified registered professional engineer's certification shall be furnished to the Department upon request until the Department releases the owner or operator from the financial assurance requirements for closure under Section 66264.143(i).

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.115.

66264.116. Survey Plat.

No later than the submission of the certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department, a survey plat indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed vertical and horizontal benchmarks. This plat shall be prepared and certified by a professional land surveyor licensed in California. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use, shall contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable regulations of this article.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25259, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.116.

66264.117. Post-Closure Care and Use of Property.

(a) This section pertains to facilities at which all hazardous wastes, waste residues, contaminated materials and contaminated soils will not be removed during closure. Additional requirements for such facilities are cited in Title 23 of the California Code of Regulations.

(b) (1) Post-closure care for each hazardous waste management unit subject to the requirements of Sections 66264.117 through 66264.120 shall begin after completion of closure of the unit and, except as provided in subsections (b)(2)(A) and (b)(2)(B), continue for 30 years after that date and shall consist of at least the following:

(A) Monitoring and reporting in accordance with the requirements of Articles 6, 11, 12, 13, 14, and 16 of this chapter; and

(B) Maintenance and monitoring of waste containment systems in accordance with the requirements of Articles 6, 11, 12, 13, 14, and 16 of this chapter.

(2) Any time preceding partial closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular unit, the Department shall, in accordance with the permit modification procedures in Chapters 20 and 21 of this division:

(A) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if the owner or operator demonstrates to the satisfaction of the Department and the Department finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or ground-water monitoring results, characteristics of the hazardous wastes, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure); or

(B) Extend the post-closure care period applicable to the hazardous waste management unit or facility if the Department finds that the extended period is necessary to protect human health and the environment (e.g., leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(c) The Department shall require, at partial and final closure, continuation of any of the security requirements of Section 66264.14 during part or all of the post-closure period when:

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

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

(d) Post-closure use of property on or in which hazardous wastes remain after partial or final closure shall never be allowed to disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring systems, unless the Department 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.

(e) All post-closure care activities shall be in accordance with the provisions of the approved post-closure plan as specified in Section 66264.118.

(f) Upon closure of a hazardous waste facility wherein hazardous wastes remain on-site no construction, filling, grading, excavating or mining shall occur without the issuance of a variance by the Department. No variance may be granted which is inconsistent with subsection (d) of this section.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.117.

66264.118. Post-Closure Plan; Amendment of Plan.

(a) Written Plan. The owner or operator of a hazardous waste disposal unit shall have a written post-closure plan. In addition, certain surface impoundments and waste piles from which the owner or operator intends to remove or decontaminate the hazardous wastes at partial or final closure are required by Sections 66264.228(c)(1)(B) and 66264.258(c)(1)(B) to have contingent post-closure plans. The plan shall be submitted with the permit application, in accordance with Section 66270.14(b)(13) of this division, or when otherwise requested by the Department. The plan shall be approved by the Department as part of the permit issuance procedures under Chapter 21 of this division. In accordance with Section 66270.32 of this division, the approved post-closure plan will become a condition of any permit issued.

(b) For each hazardous waste management unit subject to the requirements of this section, the post-closure plan shall identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

(1) A description of the planned monitoring activities and frequencies at which they will be performed to comply with Articles 6, 11, 12, 13, 14, and 16 of this chapter during the post-closure care period; and

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

(A) The integrity of the cap and final cover and other containment systems in accordance with the requirements of Articles 11, 12, 13, 14, and 16 of this chapter; and

(B) The function of the monitoring equipment in accordance with the requirements of Articles 6, 11, 12, 13, 14, and 16 of this chapter; and

(3) The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

(c) Until final closure of the facility, a copy of the approved post-closure plan and all revisions shall be kept at the facility and furnished to the Department upon request, including request by mail. After final closure, the person or office specified in Section 66264.118 (b) (3) shall keep an updated and approved post-closure plan during the remainder of the post-closure period.

(d) Amendment of plan. The owner or operator shall submit a written notification of or request for a permit modification to authorize a change in the approved post-closure plan in accordance with the applicable requirements of Chapters 20 and 21 of this division. The written notification or request shall include a copy of the amended post-closure plan for review or approval by the Department.

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

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

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

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

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

(3) The owner or operator shall submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan. The Department will approve, disapprove or modify this amended plan in accordance with the procedures in Chapters 20 and 21 of this division. In accordance with Section 66270.32 of this division, the approved post-closure plan will become a permit condition.

(4) The Department shall modify or request modifications to the plan under the conditions described in Section 66264.118 (d) (2) or for other causes if deemed necessary to prevent threats to human health and the environment. The owner or operator shall submit the modified plan no later than 60 days after the Department's request. Any modifications requested by the Department will be approved, disapproved, or modified in accordance with the procedures in Chapters 20 and 21 of this division.

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.118.

66264.119. Post-Closure Notices.

(a) No later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department a record of the type, location, and quantity of hazardous wastes disposed of within each cell or area (not limited to only hazardous waste disposal unit) of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator shall identify the type, location, and quantity of the hazardous wastes to the best of the owner's or operator's knowledge and in accordance with any records the owner or operator 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 shall be reported to the local zoning authority or the authority with jurisdiction over local land use and to the Department.

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

(1) 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:

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

(B) Its use is restricted under Article 7 of this chapter; and

(C) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or area (not limited to only hazardous waste disposal unit) of the facility required by Sections 66264.116 and 66264.119(a) have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Department; and

(2) Submit, to the Department, a certification, signed by the owner, that the notation specified in subsection (b)(1) of this section has been recorded, including a copy of the document in which the notation has been placed.

(c) If at any time the owner or operator or any subsequent owner or operator of the land upon which a hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated underlying and surrounding soils, the owner or operator shall request a modification to the post-closure permit in accordance with the applicable requirements in Chapters 20 and 21 of this division. The owner or operator shall demonstrate that the removal of hazardous wastes will satisfy the criteria of Section 66264.117(d). By removing hazardous waste, the owner or operator may become a generator of hazardous waste and shall manage it in accordance with all applicable requirements of this chapter. If the Department grants a permit

modification or otherwise grants approval to conduct such removal activities, and the removal activities are completed to the satisfaction of the Department the owner or operator may request that the Department approve either:

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

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

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.119.

66264.120. Certification of Completion of Post-Closure Care.

No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator shall submit to the Department, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification shall be signed by the owner or operator and an independent qualified professional engineer, registered in California. Documentation supporting the independent qualified registered professional engineer's certification shall be furnished to the Department upon request until the Department releases the owner or operator from the financial assurance requirements for post-closure care under Section 66264.145(i).

NOTE: Authority cited: Sections 208, 25150, 25159 and 25245, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25245 and 25246, Health and Safety Code; 40 CFR Section 264.120.

Article 8 Financial Requirements

66264.140. Applicability.

(a) The requirements of Sections 66264.142, 66264.143 and 66264.147 apply to owners and operators of all hazardous waste facilities, as defined in Section 66260.10, except as provided otherwise in this article.

(b) The requirements of Sections 66264.144 and 66264.145 apply only to owners and operators of:

(1) Hazardous waste facilities, which are disposal sites, as defined in Section 66260.10.

(2) For purposes of this article, a facility which utilizes a temporary waste pile, as defined in Section 66260.10, and surface impoundments as defined in Section 66260.10, shall be considered as a disposal site until the owner or operator has demonstrated to the satisfaction of the Department that all wastes have been removed from the site.

(3) Tank systems that are required under Section 66264.197 to meet the requirements for landfills.

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

(1) For purposes of this article, state government shall not include municipal, local, city, county, city-county special district government or any subdivisions thereof.

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.140.

66264.141. Definition of Terms as Used in this Article.

(a) The following terms, as defined in Section 66260.10 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"

"Current assets"

"Current liabilities"

"Current plugging and abandonment cost estimate"

"Independently audited"

"Liabilities"

"Net working capital"

"Net worth"

"Substantial business relationship"

"Tangible net worth"

(b) In the liability coverage requirements the terms "bodily injury" and "property damage" as defined in Section 66260.10 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 and defined in Section 66260.10 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"

"Legal defense costs"

"Nonsudden accidental occurrence"

"Sudden accidental occurrence"

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.141.

66264.142. Cost Estimate for Closure.

(a) The owner or operator shall prepare and submit to the Department a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in Sections 66264.111 through 66264.115 and applicable closure requirements in Sections 66264.178, 66264.197, 66264.228, 66264.258, 66264.280, 66264.310, 66264.351, and 66264.601 through 66264.603.

(1) The estimate shall be submitted in accordance with Sections 66270.10 and 66270.14. The estimate shall equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see Section 66264.112(b)); and

(2) The closure cost estimate shall be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in Section 66260.10.) The owner or operator may use costs for on-site disposal if it can be demonstrated that on-site disposal capacity will exist at all times over the life of the facility.

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

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

(b) During the active life of the facility, the owner or operator shall adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 66264.143. For owners and operators using the financial test or corporate guarantee, the closure cost estimate shall be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the Department as specified in Section 66264.143(f)(3). The adjustment shall be made by recalculating the maximum costs of closure in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business, as specified in subsections (b)(1) and (2) of this section. 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 mutliplying the latest adjusted closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator shall revise the closure cost estimate no later than 30 days after the Department has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate shall be adjusted for inflation as specified in subsection (b) of this section.

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

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.142.

66264.143. Financial Assurance for Closure.

An owner or operator of each facility shall establish and demonstrate to the Department financial assurance for closure of the facility. The owner or operator shall choose from the options as specified in subsections (a) through (g) of this section or Section 66264.146 of this article.

(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 subsection and submitting an originally signed duplicate of the trust agreement to the Department. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the Department at least 60 days before the date on which hazardous waste is first received for transfer, treatment, storage or disposal. The trustee shall 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 trust agreement shall be completed by utilizing only DHS Form 8100 (revised 1/91) which shall be provided by the Department. The trust agreement shall contain original signatures and shall be accompanied by a formal certification of acknowledgment. Schedule A of the trust agreement shall be updated within 60 days after a change in the amount of the current closure cost estimate covered by the trust agreement.

(3) Payments into the trust fund shall be made annually by the owner or operator over the term of the initial RCRA permit, or ten (10) years beginning with the establishment of the trust fund or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period." The payments into the closure trust fund shall be made as follows:

(A) For existing facilities, the first payment shall be made at the time the trust fund is established; a receipt from the trustee for this payment shall be submitted by the owner or operator to the Department. The first payment shall be at least equal to the current closure cost estimate, except as provided in subsection (h) of this section, divided by the number of years in the pay-in period. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment shall 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.

(B) For a new facility, the first payment shall be made before the initial receipt of hazardous waste for transfer, treatment, storage or disposal. A receipt from the trustee for this payment shall be

submitted by the owner or operator to the Department before this initial receipt of hazardous waste. The first payment shall be at least equal to the current closure cost estimate, except as provided in subsection (h) of this section, divided by the number of years in the pay-in period. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment shall 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.

(C) If an owner or operator establishes a trust fund as specified in Section 66265.143(a) of this article, and the value of that trust fund is less than the current closure cost estimate when a permit is awarded for the facility, the amount of the current closure cost estimate still to be paid into the trust fund shall be paid in over the pay-in period as defined in subsection (a)(3) of this section. Payments shall continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Chapter 15 of this division. The amount of each payment must be determined by this formula:

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

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 the full amount of the current closure cost estimate may be deposited at the time the fund is established. However, the value of the fund shall be maintained at no less than the value that the fund would have if annual payments were made as specified in subsection (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 Section 66265.143 of this article, the first payment shall be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this subsection and Section 66265.143(a) of this article, as applicable.

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

the amount of the current closure cost estimate, or obtain other financial assurance as specified in this article 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 Department 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 article for all or part of the trust fund, a written request may be submitted to the Department 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 subsections (a)(7) or (8) of this section, the Department will instruct the trustee to release to the owner or operator such funds as the Department specifies in writing.

(10) Before beginning final closure, the value of the trust fund shall equal the amount of the current closure cost estimate. If the value of the fund is less than the amount of the current estimate, the owner or operator shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other

financial assurance, as specified in this article, to cover the difference.

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

(12) The Department shall agree to termination of the trust when:

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements in accordance with subsection (j) of this section.

(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 subsection and submitting the bond to the Department. An owner or operator of a new facility shall submit the bond to the Department at least 60 days before the date on which hazardous waste is first received for transfer, treatment, storage or disposal. The bond shall 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 surety bond shall be completed by utilizing only DHS Form 8101 (revised 1/91) which shall be provided by the Department. The surety bond shall contain original signatures and shall be accompanied by the documents specified in this subsection.

(3) The owner or operator who uses a surety bond to satisfy the requirements of this article shall also establish a standby trust fund. Under the terms of the bond, all payments made thereunder

shall be deposited by the surety directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund shall meet the requirements specified in subsection (a) of this section, except that:

(A) An originally signed duplicate of the standby trust agreement (DHS Form 8100) (revised 1/91) shall be submitted to the Department with the surety bond; and

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

1. Payments into the trust fund as specified in subsection (a) of this section;

2. Updating of Schedule A of the trust agreement to show current closure cost estimates as required by subsection (a)(2) of this section;

3. Annual valuations as required by the trust agreement; and

4. Notices of nonpayment as required by the trust agreement.

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

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

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

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

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

(6) The penal sum of the bond shall be in an amount at least equal to the current closure cost estimate, except as provided in subsection (h) of this section.

(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, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost

estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this article 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 Department.

(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 Department. Cancellation shall 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 Department, as evidenced by the return receipts.

(9) The owner or operator may cancel the bond with prior written consent from the Department based on receipt of evidence of alternate financial assurance as specified in this article.

(c) Surety bond guaranteeing performance of closure.

(1) An owner or operator of a permitted facility, as defined in Section 66260.10, may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the Department. An owner or operator of a new facility shall submit the bond to the Department at least 60 days before the date on which hazardous waste is first received for transfer, treatment, storage or disposal. The bond shall be effective before this initial receipt of hazardous waste.

The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The surety bond shall be completed by utilizing only DHS Form 8102 (revised 1/91)which shall be provided by the Department. The surety bond shall contain original signatures and shall be accompanied by the documents specified in this subsection.

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

(A) An originally signed duplicate of the standby trust agreement (DHS Form 8100 revised 1/91) shall be submitted to the Department with the surety bond; and

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

1. Payments into the trust fund as specified in subsection (a) of this section;

2. Updating of Schedule A of the trust agreement to show current closure cost estimates as required by subsection (a)(2) of this section;

3. Annual valuations as required by the trust agreement; and

4. Notices of nonpayment as required by the trust agreement.

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

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

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

(5) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the Department that the owner or operator has failed to perform final closure in accordance with the approved closure plan and other permit requirements when required to do so, under the terms of the bond the surety shall perform final closure as guaranteed by the

bond or shall deposit the amount of the penal sum into the standby trust fund.

(6) The penal sum of the bond shall 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, shall either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this article. 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 from the Department.

(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 Department. Cancellation shall 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 Department, as evidenced by the return receipts.

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

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements of this section in accordance with subsection (j) of this section.

(10) The surety shall not be liable for deficiencies in the performance of closure by the owner or operator after the Department releases the owner or operator from the requirements of this section in accordance with subsection (j) of this section.

(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 subsection and submitting the letter to the Department. An owner or operator of a new facility shall submit the letter of credit to the Department at least 60 days before the date on which hazardous waste is first received for transfer, treatment, storage or disposal. The letter of credit shall be effective before this initial receipt of hazardous waste. The issuing institution shall be an entity 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 letter of credit shall be completed as specified in DHS Form 8103 (revised 1/91) which shall be provided by the Department.

The letter of credit shall contain original signatures and shall be accompanied by the documents specified in (3) and (4) of this subsection.

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

(A) An originally signed duplicate of the standby trust agreement (DHS Form 8100 revised 1/91) shall be submitted to the Department with the letter of credit; and

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

1. Payments into the trust fund as specified in subsection (a) of this section;

2. Updating of Schedule A of the trust agreement to show current closure cost estimates as required by subsection (a)(2) of this section;

3. Annual valuations as required by the trust agreement; and

4. Notices of nonpayment as required by the trust agreement.

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

(6) The letter of credit shall be issued in an amount at least equal to the current closure cost estimate, except as provided in subsection (h) of this section.

(7) Whenever the current closure cost estimate increases to an amount greater than the amount of the letter of credit, the owner

or operator, within 60 days after the increase, shall either cause the amount of the letter of credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this article to cover the increase. Whenever the current closure cost estimate decreases, the amount of the letter of credit may be reduced to the amount of the current closure cost estimate following written approval from the Department.

(8) Following a determination by the Department 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 Department may draw on the letter of credit.

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

financial assurance as specified in this article and obtain written approval of such assurance from the Department.

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

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements of this section in accordance with subsection (j) of this section.

(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 section and submitting a certificate of such insurance to the Department. An owner or operator of a new facility shall submit the certificate of insurance to the Department at least 60 days before the date on which hazardous waste is first received for transfer, treatment, storage or disposal. The insurance shall be effective before this initial receipt of hazardous waste. At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

(2) The certificate of insurance shall be completed by utilizing only DHS Form 8104 (revised 1/91) which shall be provided by the Department. The certificate of insurance shall contain original signatures.

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

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

(5) After beginning partial or final closure, an owner or operator or any other person authorized to conduct closure may request reimbursements for closure expenditures by submitting itemized bills to the Department. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for closure activities, the Department shall

instruct the insurer to make reimbursements in such amounts as the Department specifies in writing, if the Department determines that the partial or final closure expenditures are in accordance with the approved closure plan or are otherwise justified. If the Department has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the face amount of the policy, the Department may withhold reimbursements of such amounts as it deems prudent until it is determined, in accordance with subsection (j) of this section, that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the Department does not instruct the insurer to make such reimbursements, the owner or operator will be provided a detailed written statement of reasons.

(6) The owner or operator shall maintain the policy in full force and effect until the Department consents to termination of the policy by the owner or operator as specified in subsection (e)(10) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this article, shall constitute a significant violation of these regulations, warranting such remedy as the Department deems necessary. Such violation will be deemed to begin upon receipt by the Department 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 shall 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 shall provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy shall, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate, or fail to renew the policy by sending notice by certified mail to the owner or operator and the Department. 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 Department and the owner or operator, as evidenced by the return receipts. Cancellation, termination or failure to renew shall not occur and the policy shall remain in full force and effect in the event that on or before the date of expiration:

(A) The Department deems the facility abandoned; or

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

(C) Closure is ordered by the Department or any other state or federal agency, U.S. district court or other court of competent jurisdiction; or

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

(E) The premium due is paid.

(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, shall either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this article to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the Department.

(10) The Department shall give written consent to the owner or operator to terminate the insurance policy when:

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements of this section in accordance with subsection (j) of this section.

(f) Financial test and corporate guarantee for closure.

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

(A) The owner or operator shall have:

1. 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 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

2. Net working capital and tangible net worth each at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates; and

3. Tangible net worth of at least $10 million; and

4. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates.

(B) The owner or operator shall have:

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

2. Tangible net worth at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates; and

3. Tangible net worth of at least $10 million; and

4. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates.

(2) The phrase "current closure and postclosure cost estimates" as used in subsection (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. The phrase "current plugging and abandonment cost estimates" as used in subsection (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.

(3) To demonstrate that this test has been met, the owner or operator shall submit the following items to the Department:

(A) A letter signed by the owner's or operator's chief financial officer. The letter shall be on the owner or operator's official letterhead stationery, shall contain an original signature and shall be completed as specified in DHS Form 8105 (revised 1/91) which shall be provided by the Department; and

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

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

1. The independent certified public accountant 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

2. In connection with that procedure, no matters came to the independent certified public accountant's attention which caused that accountant to believe that the specified data should be adjusted.

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

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

(6) If the owner or operator no longer meets the requirements of subsection (f) (1) of this section, the owner or operator shall send notice to the Department of intent to establish alternate financial assurance as specified in this article. The notice shall be sent by certified mail within 90 days after any occurrence that prevents the owner or operator from meeting the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after the end of the company's latest completed fiscal year.

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

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

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

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements in accordance with subsection (j) of this section.

(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 shall be the parent corporation as defined in Section 66260.10 of the owner or operator. The guarantor shall meet and comply with the requirements for owners or operators in subsections (f)(1) through (f)(8) of this section and shall comply with the terms of the corporate guarantee. The corporate guarantee shall be on the

official letterhead stationery of the parent corporation. The corporate guarantee shall contain an original signature whichshall be formally witnessed or notarized, and shall be completed as specified in DHS Form 8106 (revised 1/91) which shall be provided by the Department. The corporate guarantee shall accompany the items sent to the Department as specified in subsection (f)(3) of this section. The terms of the corporate guarantee shall provide that:

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

(B) The corporate guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation shall 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 Department, as evidenced by the return receipts.

(C) If the owner or operator fails to provide alternate financial assurance as specified in this article and obtain the written approval of such alternate assurance from the Department within 90 days after receipt by both the owner or operator and the Department of a notice of cancellation of the corporate guarantee from the

guarantor, the guarantor shall provide such alternative financial assurance in the name of the owner or operator.

9(9) Alternative Financial Mechanism for Closure Costs.

(1) An owner or operator of facilities which manage solely non-RCRA hazardous waste may establish financial assurance for closure by means of a financial mechanism other than as specified in subsections (a) through (f) of this section, provided that prior to its use the mechanism has been submitted to and approved by the Department. The mechanism shall be at least equivalent to the financial mechanisms specified in subsections (a) through (f) of this section. The Department shall evaluate the equivalency of a mechanism principally in terms of:

(A) Certainty of the availability of funds for the required closure activities; and

(B) The amount of funds that will be made available.

The Department may also consider other factors deemed to be appropriate, and may require the owner or operator to submit additional information as is deemed necessary to make the determination.

(2) The owner or operator shall submit to the Department the proposed mechanism together with a letter requesting that the proposed mechanism be considered acceptable for meeting the

requirements of Section 66264.143. The submission shall include the following information:

(A) Name, address and telephone number of issuing institution; and

(B) Hazardous waste facility identification number, name, address and closure cost estimate for each facility; and

(C) The amount of funds for closure to be assured for each facility by the proposed mechanism; and

(D) The terms of the proposed mechanism (period covered, renewal/extension, cancellation).

(3) The Department shall notify the owner or operator in writing of the determination made regarding the proposed mechanism's acceptability in lieu of the financial mechanisms specified in subsections (a) through (f) of this section.

(4) If a proposed mechanism is found acceptable, the owner or operator shall submit a fully executed document to the Department. The document shall contain original signatures and shall be accompanied by a formal certification of acknowledgment.

(5) If a proposed mechanism is found acceptable except for the amount of funds, the owner or operator shall either increase the amount of the mechanism or obtain other financial assurance as specified in subsections (a) through (f) of this section . The

amount of funds available through the combination of mechanisms shall at least equal the current closure cost estimate.

(h) 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. The mechanisms shall be as specified in subsections (a), through (g) of this section, except that it is the combination of mechanisms, rather than the single mechanism, which shall provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, the trust fund may be used as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this subsection, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify the other as "excess" coverage. The Department may use any or all of the mechanisms to provide for closure of the facility.

(i) Use of a financial mechanism for multiple facilities. An owner or operator may use one or more of the financial assurance mechanisms specified in subsections (a) through (h) of this section to meet the requirements of this article for more than one facility. Evidence of financial assurance submitted to the Department shall include a list showing, for each facility, the Hazardous Waste Facility Identification Number, name, address and

the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Department 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.

(j) Release of the owner or operator from the requirements of this section.

(1) Within 60 days after receiving certifications from the owner or operator and an independent professional engineer, registered in California, that final closure has been completed in accordance with the approved closure plan, the Department shall notify the owner or operator in writing that they are no longer required by this section to maintain financial assurance for final closure of the facility, unless the Department has reason to believe that final closure has not been in accordance with the approved closure plan. The Department shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

(2) When transfer of ownership or operational control of a facility occurs, and the new owner or operator has demonstrated to the satisfaction of the Department that they are complying with the

financial requirements of this article, the Department shall notify the previous owner or operator in writing that they are no longer required to maintain financial assurance for closure of that particular facility.

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.143.

66264.144. Cost Estimate for Postclosure Care.

(a) The owner or operator of a disposal surface impoundment, disposal miscellaneous unit, land treatment unit, or landfill unit, or of a surface impoundment or waste pile required under Section 66264.228 and Section 66264.258 to prepare a contingent closure and postclosure plan, shall prepare and submit to the Department a detailed written estimate, in current dollars, of the annual cost of postclosure monitoring and maintenance of the facility in accordance with the applicable postclosure regulations in Sections 66264.117 through 66264.120, 66264.228, 66264.258, 66264.280, 66264.310 and 66264.603.

(1) The postclosure cost estimate shall be based on the costs to the owner or operator of hiring a third party to conduct postclosure care activities. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in Section 66260.10).

(2) The postclosure cost estimate is calculated by multiplying the annual postclosure cost estimate by the number of years of postclosure care required under Section 66264.117.

(b) During the active life of the facility, the owner or operator shall adjust the postclosure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with Section 66264.145. For owners or operators using the financial test or corporate

guarantee, the postclosure cost estimate shall be updated for inflation within 30 days after the close of the firm's fiscal year and before the submission of updated information to the Department as specified in Section 66264.145(f)(5). The adjustment shall be made by recalculating the postclosure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business as specified in subsection (b)(1) and (b)(2) of this section. 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 postclosure cost estimate by the inflation factor. The result is the adjusted postclosure cost estimate.

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

(c) During the active life of the facility, the owner or operator shall revise the postclosure cost estimate within 30 days after the Department has approved the request to modify the postclosure plan, if the change in the postclosure plan increases the cost of postclosure care. The revised postclosure cost estimate shall be adjusted for inflation as specified in Section 66264.144(b).

(d) The owner or operator shall keep the following at the facility during the operating life of the facility: The latest postclosure

cost estimate prepared in accordance with Section 66264.144(a) and (c) and, when this estimate has been adjusted in accordance with Section 66264.144(b), the latest adjusted postclosure cost estimate.

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.144.

66264.145. Financial Assurance for Postclosure Care.

The owner or operator of a hazardous waste management unit subject to the requirements of Section 66264.144 shall establish and demonstrate to the Department financial assurance for postclosure care in accordance with the approved postclosure plan for the facility 60 days prior to the initial receipt of hazardous waste or the effective date of the regulation, whichever is later. The owner or operator shall choose from the following options as specified in subsections (a) through (g) of this section:

(a) Postclosure trust fund.

(1) An owner or operator may satisfy the requirements of this section by establishing a postclosure trust fund which conforms to the requirements of this subsection and submitting an originally signed duplicate of the trust agreement to the Department. An owner or operator of a new facility shall submit the originally signed duplicate of the trust agreement to the Department at least 60 days before the date on which hazardous waste is first received for disposal. The trustee shall 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 trust agreement shall be completed by utilizing only DHS Form 8100 (revised 1/91) which shall be provided by the Department. The trust agreement shall contain original signatures and shall be accompanied by a formal certification of cknowledgment. Schedule A

of the trust agreement shall be updated within 60 days after a change in the amount of the current postclosure cost estimate covered by the agreement.

(3) Payments into the trust fund shall be made annually by the owner or operator over the ten (10) years beginning with the establishment of the trust fund, or the term of the initial RCRA 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 postclosure trust fund shall be made as follows:

(A) For an existing facility, the first payment shall be made at the time the trust fund is established; a receipt from the trustee for this payment shall be submitted by the owner or operator to the Department. The first payment shall be at least equal to the current postclosure cost estimate, except as provided in subsection (h) of this section, divided by the number of years in the pay-in period. Subsequent payments shall be made no later than 30 days after each anniversary date of the first payment. The amount of each subsequent payment shall be determined by this formula:

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

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

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

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

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

(C) If an owner or operator establishes a trust fund as specified in Section 66265.145(a) of this article, and the value of that trust fund is less than the current postclosure cost estimate when a permit is awarded for the facility, the amount of the current postclosure cost estimate still to be paid into the fund shall be paid in over the pay-in period as defined in subsection (a)(3) of this section. Payments shall continue to be made no later than 30 days after each anniversary date of the first payment made pursuant to Chapter 15 of this division. The amount of each payment shall be determined by this formula:

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

where CE is the current postclosure 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 deposit the full amount of the current postclosure cost estimate at the time the fund is established. However, the value of the fund shall be maintained at no less than the value that the fund would have if annual payments were made as specified in subsection (a)(3) of this section.

(5) If the owner or operator establishes a postclosure trust fund after having used one or more alternate mechanisms specified in this article, or in Section 66265.145 of this division the first payment shall be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this subsection as applicable.

(6) After the pay-in period is completed, whenever the current postclosure cost estimate changes during the operating life of the facility, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its

value after this deposit at least equals the amount of the current postclosure cost estimate, or obtain other financial assurance as specified in this article 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 current postclosure cost estimate, the owner or operator may submit a written request to the Department for release of the amount in excess of the current postclosure cost estimate.

(8) If an owner or operator substitutes other financial assurance as specified in this article for all or part of the trust fund, the owner or operator may submit a written request to the Department for release of the amount in excess of the current postclosure 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 subsection (a)(7) or (a)(8) of this section, the Department will instruct the trustee to release to the owner or operator such funds as the Department specifies in writing.

(10) Before final postclosure occurs, the value of the trust fund shall equal the amount of the current postclosure cost estimate. If the value of the fund is less than the amount of the current estimate, the owner or operator shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current postclosure cost estimate, or obtain other

financial assurance, as specified in this article, to cover the difference.

(11) During the period of postclosure care, the Department shall approve a release of funds if the owner or operator demonstrates to the satisfaction of the Department that the value of the trust fund exceeds the remaining cost of postclosure care.

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

(13) The Department shall agree to termination of the trust when:

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements in accordance with subsection (j) of this section.

(b) Surety bond guaranteeing payment into a postclosure 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 subsection and submitting the bond to the Department. An owner or operator of a new facility shall submit the bond to the Department at least 60 days before the date on which hazardous waste is first received for disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The surety bond shall be completed by utilizing only DHS Form 8101 (revised 1/91) which shall be provided by the Department. The surety bond shall contain original signatures and shall be accompanied by the documents specified in this subsection .

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

(A) An originally signed duplicate of the trust agreement (DHS Form 8100 revised 1/91) shall be submitted to the Department with the surety bond; and

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

1. Payments into the trust fund as specified in subsection (a) of this section;

2. Updating of Schedule A of the trust agreement to show current postclosure cost estimates as required by subsection (a)(2) of this section;

3. Annual valuations as required by the trust agreement; and

4. Notices of nonpayment as required by the trust agreement.

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

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

(B) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Department becomes final, or within 15 days after an

order to begin final closure is issued by a U.S. district court or other court of competent jurisdiction; or

(C) Provide alternate financial assurance as specified in this article to the Department for written approval within 90 days after receipt by both the owner or operator and the Department of a notice of cancellation of the bond from the surety.

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

(6) The penal sum of the bond shall be in an amount at least equal to the current postclosure cost estimate, except as provided in subsection (g) of this section.

(7) Whenever the current postclosure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, shall either cause the penal sum to be increased to an amount at least equal to the current postclosure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this article to cover the increase. Whenever the current postclosure cost estimate decreases, the Department shall approve, in writing, a reduction of the penal sum to the amount of the current postclosure cost estimate if the owner or operator demonstrates to the satisfaction of the Department that the penal sum exceeds the current postclosure cost estimate.

(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 Department. Cancellation shall 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 Department, as evidenced by the return receipts.

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

(c) Surety bond guaranteeing performance of postclosure care.

(1) An owner or operator of a permitted facility, as defined in Section 66260.10, may satisfy the requirements of this section by obtaining a surety bond which conforms to the requirements of this subsection and submitting the bond to the Department. An owner or operator of a new facility shall submit the bond to the Department at least 60 days before the date on which hazardous waste is first received for disposal. The bond shall be effective before this initial receipt of hazardous waste. The surety company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

(2) The surety bond shall be completed by utilizing only DHS Form 8102 (revised 1/91) which shall be provided by the Department. The

surety bond shall contain original signatures and shall be accompanied by the documents specified in this subsection .

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

(A) An originally signed duplicate of the trust agreement (DHS Form 8100 revised 1/91) shall be submitted to the Department with the surety bond; and

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

1. Payments into the trust fund as specified in subsection (a) of this section;

2. Updating of Schedule A of the trust agreement to show current postclosure cost estimates; as required by subsection (a)(2) of this section;

3. Annual valuations as required by the trust agreement; and

4. Notices of nonpayment as required by the trust agreement.

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

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

(B) Provide alternate financial assurance as specified in this article to the Department for written approval within 90 days of receipt by both the owner or operator and the Department of a notice of cancellation of the bond from the surety.

(5) Under the terms of the bond, the surety shall become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the Department that the owner or operator has failed to perform postclosure care in accordance with the approved postclosure plan and other permit requirements, under the terms of the bond the surety shall perform postclosure care in accordance with the postclosure plan and other permit requirements or shall deposit the amount of the penal sum into the standby trust fund.

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

(7) Whenever the current postclosure 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,

shall either cause the penal sum to be increased to an amount at least equal to the current postclosure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this article. Whenever the current postclosure cost estimate decreases during the operating life of the facility, the Department shall approve, in writing, a reduction of the penal sum to the amount of the current postclosure cost estimate if the owner or operator demonstrates to the satisfaction of the Department that the amount exceeds the current postclosure estimate.

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

(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 Department. Cancellation shall 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 Department, as evidenced by the return receipts.

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

(A) An owner or operator substitutes alternate financial

assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements in accordance with subsection (j) of this section.

(11) The surety shall not be liable for deficiencies in the performance of postclosure care by the owner or operator after the Department releases the owner or operator from the requirements in accordance with subsection (j) of this section.

(d) Postclosure 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 subsection and submitting the letter to the Department. An owner or operator of a new facility shall submit the letter of credit to the Department at least 60 days before the date on which hazardous waste is first received for disposal. The letter of credit shall be effective before this initial receipt of hazardous waste. The issuing institution shall 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 letter of credit shall be completed as specified in the DHS Form 8103 (revised 1/91) which shall be provided by the Department. The letter of credit shall contain original signatures and shall be accompanied by the documents specified in this subsection.

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

(A) An originally signed duplicate of the trust agreement (DHS Form 8100 revised 1/91) shall be submitted to the Department with the letter of credit; and

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

1. Payments into the trust fund as specified in subsection (a) of this section;

2. Updating of Schedule A of the trust agreement to show current postclosure cost estimates as required by subsection (a)(2) of this section;

3. Annual valuations as required by the trust agreement; and

4. Notices of nonpayment as required by the trust agreement.

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

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

(6) The letter of credit shall be issued in an amount at least equal to the current postclosure cost estimate, except as provided in subsection (h) of this section.

(7) Whenever the current postclosure cost estimate increases to an amount greater than the amount of the letter of credit during the operating life of the facility, the owner or operator, within 60 days after the increase, shall either cause the amount of the letter of credit to be increased so that it at least equals the current postclosure cost estimate and submit evidence of such

increase to the Department, or obtain other financial assurance as specified in this article to cover the increase. Whenever the current postclosure cost estimate decreases during the operating life of the facility, the amount of the letter of credit may be reduced to the amount of the current postclosure cost estimate following written approval from the Department.

(8) During the period of postclosure care, the Department shall approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the Department that the amount exceeds the remaining cost of postclosure care.

(9) Following a determination by the Department that the owner or operator has failed to perform postclosure care in accordance with the approved postclosure plan and other permit requirements, the Department may draw on the letter of credit.

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

credit if the owner or operator has failed to provide alternate financial assurance as specified in this article and obtain written approval of such assurance from the Department.

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

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements of this section in accordance with subsection (j) of this section.

(e) Postclosure insurance.

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

(2) The certificate of insurance shall be completed by utilizing DHS Form 8104 (revised 1/91) which shall be provided by the Department. The certificate of insurance shall contain original signatures.

(3) The postclosure insurance policy shall be issued for a face amount at least equal to the current postclosure cost estimate, except as provided in subsection (h) of this section. The term "face amount" means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer shall not change the face amount, although the insurer's future liability shall be lowered by the amount of the payments.

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

(5) An owner or operator or any other person authorized to conduct postclosure care may request reimbursements for postclosure care expenditures by submitting itemized bills to the Department. Within 60 days after receiving bills for postclosure care activities, the Department shall instruct the insurer to make reimbursements in those amounts as the Department specifies in writing, if the Department determines that the postclosure care

expenditures are in accordance with the approved postclosure plan or otherwise justified. If the Department does not instruct the insurer to make such reimbursements, a detailed written statement of reasons will be provided to the owner or operator.

(6) The owner or operator shall maintain the policy in full force and effect until the Department consents to termination of the policy by the owner or operator as specified in subsection (e)(11) of this section. Failure to pay the premium, without substitution of alternate financial assurance as specified in this article, shall constitute a significant violation of these regulations, warranting such remedy as the Department deems necessary. Such violation shall be deemed to begin upon receipt by the Department 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 shall 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 shall provide that the insurer may not cancel, terminate or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy shall, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate or fail to renew the

policy by sending notice by certified mail to the owner or operator and the Department. Cancellation, termination or failure to renew shall not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Department and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew shall no: occur and the policy shall remain in full force and effect in the event that on or before the date of expiration:

(A) The Department deems the facility abandoned; or

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

(C) Closure is ordered by the Department or by any other state or federal agency, U.S. district court or other court of competent jurisdiction; or

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

(E) The premium due is paid.

(9) Whenever the current postclosure 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, shall either cause the face amount to be increased to an amount at least equal to the current postclosure

cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in this article to cover the increase. Whenever the current postclosure cost estimate decreases during the operating life of the facility, the face amount may be reduced to the amount of the current postclosure cost estimate following written approval by the Department.

(10) Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer shall thereafter annually increase the face amount of the policy. Such increase shall 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 Department shall give written consent to the owner or operator that the insurance policy may be terminated when:

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements in accordance with subsection (j) of this section.

(f) Financial test and corporate guarantee for postclosure care.

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

(A) The owner or operator shall have:

1. 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 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

2. Net working capital and tangible net worth each at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates; and

3. Tangible net worth of at least $10 million; and

4. Assets in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates.

(B) The owner or operator shall have:

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

2. Tangible net worth at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates; and

3. Tangible net worth of at least $10 million; and

4. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and postclosure cost estimates and the current plugging and abandonment cost estimates.

(2) The phrase "current closure and postclosure cost estimates" as used in subsection (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. The phrase "current plugging and abandonment cost estimates" as used in subsection (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.

(3) To demonstrate that this test has been met, the owner or operator shall submit the following items to the Department:

(A) A letter signed by the owner's or operator's chief financial officer and worded as specified in DHS Form 8105 (revised 1/91) which shall be provided by the Department. The letter shall be on the owner or operator's official letterhead stationery, and shall contain an original signature; and

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

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

1. The independent certified public accountant has compared the data which the letter from the chief financial officer specified 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

2. In connection with that procedure, no matters came to the independent certified public accountant's attention which caused a belief that the specified data should be adjusted.

(4) An owner or operator of a new facility shall submit the items specified in subsection (f)(3) of this section to the Department 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 subsection (f)(3) of this section, the owner or operator shall send updated information to the Department within 90 days after the close of each succeeding fiscal year. This information shall consist of all three items specified in subsection (f)(3) of this section.

(6) If the owner or operator no longer meets the requirements of subsection (f)(1) of this section, the owner or operator shall send notice to the Department of the intent to establish alternate financial assurance as specified in this article. The notice shall be sent by certified mail within 90 days after any occurrence that prevents the owner or operator from meeting the requirements. The owner or operator shall provide the alternate financial assurance within 120 days after such occurrence.

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

(8) The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent

certified public accountant in his or her report on examination of the owner's or operator's financial statements (see subsection (f)(3)(B) of this section). An adverse opinion or a disclaimer of opinion shall be cause for disallowance. The Department shall evaluate other qualifications on an individual basis. The owner or operator shall provide alternate financial assurance as specified in this article within 30 days after notification of the disallowance.

(9) During the period of postclosure care, the Department shall approve a decrease in the current postclosure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Department that the amount of the cost estimate exceeds the remaining cost of postclosure care.

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

(A) An owner or operator substitutes alternate financial assurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements of this section in accordance with subsection (j) of this section.

(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 shall be the parent

corporation as defined in Section 66260.10, of the owner or operator. The guarantor shall meet the requirements for owners or operators in subsections (f)(1) through (f)(9) of this section and shall comply with the terms of the corporate guarantee. ~~The wording of the corporate guarantee shall be identical to the wording specified by the Department, and~~ The document shall be completed as specified in DHS Form 8106 (revised 1/91) which shall be provided by the Department. The corporate guarantee shall accompany the items sent to the Department as specified in subsection (f)(3) of this section. The terms of the corporate guarantee shall provide that:

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

(B) The corporate guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation shall 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 Department, as evidenced by the return receipts.

(C) If the owner or operator fails to provide alternate financial assurance as specified in this article and obtain the written

approval of such alternate assurance from the Department within 90 days after receipt by both the owner or operator and the Department of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor shall provide such alternate financial assurance in the name of the owner or operator.

(g) Alternative Financial Mechanism for Postclosure Care.

(1) The owner or operator of facilities which solely manage non-RCRA hazardous waste may establish financial assurance for postclosure care by means of a financial mechanism other than as specified in subsections (a) through (f) of this section, provided that prior to its use the mechanism has been submitted to and approved by the Department. The mechanism shall be at least equivalent to the financial mechanisms specified in subsections (a) through (f) of this section. The Department shall evaluate the equivalency of a mechanism principally in terms of:

(A) Certainty of the availability of funds for the required postclosure care activities; and

(B) The amount of funds that will be made available.

The Department may also consider other factors deemed to be appropriate, and may require the owner or operator to submit additional information as is deemed necessary to make the determination.

(2) The owner or operator shall submit to the Department the proposed mechanism together with a letter requesting that the proposed mechanism be considered acceptable for meeting the requirements of Section 66264.145. The submission shall include the following information:

(A) Name, address and phone number of the issuing institution; and

(B) Hazardous waste facility identification number, name, address and postclosure cost estimate for each facility; and

(C) The amount of funds for postclosure care to be assured for each facility by the proposed mechanism; and

(D) The terms of the proposed mechanism (period covered, renewal/extension, cancellation).

(3) The Department shall notify the owner or operator in writing of the determination made regarding the proposed mechanism's acceptability in lieu of the financial assurance mechanisms specified in subsections (a) through (f) of this section.

(4) If a proposed mechanism is found acceptable, the owner or operator shall submit a fully executed document to the Department. The document shall contain original signatures and shall be accompanied by a formal certification of acknowledgment.

(5) If a proposed mechanism is found acceptable except for the amount of funds, the owner or operator shall either increase the amount of the mechanism or obtain other financial assurance as specified in subsections (a) through (f) of this section. The amount of funds available through the combination of mechanisms shall at least equal the current postclosure cost estimate.

(h) 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. The mechanisms shall be as specified in subsections (a) through (g) of this section, except that it is the combination of mechanisms, rather than the single mechanism, which shall provide financial assurance for an amount at least equal to the current postclosure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he or she may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this subsection, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify the other as "excess" coverage. The Department may use any or all of the mechanisms to provide for postclosure care of the facility.

(i) Use of a financial mechanism for multiple facilities for postclosure care. An owner or operator may use one or more of the financial assurance mechanisms specified in subsection (a) through

(h) of this section to meet the requirements of Section 66264.145 for more than one facility. Evidence of financial assurance submitted to the Department shall include a list showing, for each facility, the Hazardous Waste Facility Identification Number, name, address and the amount of funds for postclosure care assured by the mechanism. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for postclosure care of any of the facilities covered by the mechanism, the Department 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.

(j) Release of the owner or operator from financial assurance requirements for postclosure care.

(1) Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that all postclosure care requirements have been completed for a hazardous waste disposal unit in accordance with the approved postclosure plan, the Department, at the request of the owner or operator, shall notify the owner or operator in writing that maintenance of financial assurance is no longer required for postclosure care of that unit, unless the Department has reason to believe that postclosure care has not been in accordance with the approved postclosure plan. The Department shall provide the owner or operator with a detailed written statement of any such reason to

believe that postclosure care has not been in accordance with the approved postclosure plan.

(2) When transfer of ownership or operational control of a facility occurs, and the new owner or operator has demonstrated to the satisfaction of the Department that the owner or operator is complying with the financial requirements of this article, the Department shall notify the previous owner or operator in writing that they are no longer required to maintain financial assurance for postclosure care of that particular facility.

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.145.

66264.146. 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, corporate guarantee, or alternative mechanism, that meets the specifications for the mechanism in both Section 66264.143 and Section 66264.145. The amount of funds available through the mechanism shall be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of post-closure care.

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25425, Health and Safety Code; 40 CFR Section 264.146.

66264.147. Liability Requirements.

(a) Coverage for sudden accidental occurrences. An owner or operator of each hazardous waste transfer, treatment, storage or disposal facility or a group of such facilities, shall demonstrate to the Department financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden accidental occurrences in the amount of at least S1 million per occurrence per facility with an annual aggregate of at least $2 million per facility, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in subsections (a)(1) through (7) of this section:

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

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in subsection (g) and (h) of this section.

(3) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in subsection (i) of this section.

(4) An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in subsection (j) of this section.

(5) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in subsection (k) of this section.

(6) An owner or operator may meet the requirements of this section by obtaining an alternative financial mechanism, as described in subsection (1) of this section; or

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

(8) An owner or operator shall notify the Department in writing within 30 days.

(A)Whenever a claim for bodily injury or property damages caused by the operation of a hazardous waste transfer, treatment, storage or disposal facility is made against the owner or operator or an instrument providing financial assurance for liability coverage under this section and

(13) whenever the amount of financial assurance for liability coverage under this section provided by a financial instrument authorized by subsections (a)(1) through (a)(7) of this section is reduced.

(b) Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment as defined in Section 66260.10, landfill, as defined in Section 66260.10, land treatment facility as defined in Section 66260.10 or miscellaneous disposal unit which is used to manage hazardous waste, or a group of such facilities, shall demonstrate to the Department financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence per facility, as defined in Section 66260.10, with an annual aggregate of at least S6 million per facility, exclusive of legal defense costs. An owner or operator who must meet the requirements of this

section may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount . of at least $4 million per occurrence per facility and $8 million per facility annual aggregate. This liability coverage may be demonstrated, as specified in subsections (b)(1) through (a)(7) of this section:

(1) An owner or operator may demonstrate the required liability coverage by obtaining liability insurance as specified in subsection (f) of this section.

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in subsections (9) and (h) of this section.

(3) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in subsection (i) of this section.

(4) An owner or operator may meet the requirements of this section by obtaining a payment bond for liability coverage as specified in subsection (j) of this section.

(5) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in subsection (k) of this section.

(6) An owner or operator may meet the requirements of this section by obtaining an alternative financial mechanism, as described in subsection (1) of this section; or

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

(8) An owner or operator shall notify the Department in writing within 30 days (i) whenever a claim for bodily injury or property damages caused by the operation of a hazardous waste transfer, treatment, storage or disposal facility is made against the owner or operator or an instrument providing financial assurance for liability coverage under this section and (ii) whenever the amount

of financial assurance for liability coverage under this section provided by a financial instrument authorized by subsections (b)(1) through (b)(7) of this section is reduced.

(c) Request for variance. If an owner or operator can demonstrate to the satisfaction of the Department that the levels of financial responsibility required by subsection (a) or (b) of this section are not consistent with the degree and duration of risk associated with transfer, treatment, storage or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Department. The request for a variance shall be submitted to the Department as part of the application under Section 66270.14 of this chapter for a facility that does not have a permit, or pursuant to the procedures for permit modification under Section 66271.4 of this chapter for a facility that has a permit. If granted, the variance shall take the form of an adjusted level of required liability coverage, such level to be based on the Department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Department may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the Department to determine a level of financial responsibility other than that required by subsection (a) or (b) of this section. Any request for a variance for a permitted facility will be treated as a request for a permit modification under Section 66270.41(a)(5) and Section 66271.4.

(d) Adjustments by the Department. If the Department determines that the levels of financial responsibility required by subsection (a) or (b) of this section are not consistent with the degree and duration of risk associated with transfer, treatment, storage or disposal at the facility or group of facilities, the Department may adjust the level of financial responsibility required under subsection (a) or (b) of this section as may be necessary to protect human health and the environment. This adjusted level shall be based on the Department'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 Department 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, the Department shall require that an owner or operator of the facility comply with subsection (b) of this section. An owner or operator shall furnish to the Department, within a reasonable time, any information which the Department 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 Section 66270.41(a)(5) and Section 66271.4.

(e) Period of coverage. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the

Department shall notify the owner or operator in writing that he or she is no longer required by this section to maintain liability coverage for that facility, unless the Department has reason to believe that closure has not been in accordance with the approved closure plan.

(f) Liability Insurance.

(1) An owner or operator may demonstrate the required liability coverage by having liability insurance, as specified in this section, and submitting evidence of such insurance to the Department.

(2) At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more states.

(3) Each insurance policy shall be amended by attachment of the Hazardous Waste Facility Liability Endorsement (DHS Form 8108 revised 1/91) or evidenced by a Certificate of Liability Insurance (DHS Form 8107 revised 1/91). If requested by the Department, the owner or operator shall provide a copy of the insurance policy; the copy of the insurance policy shall contain original signatures.

(A) The liability endorsement shall be completed by utilizing only DHS Form 8108 (revised 1/91) which shall be provided by the Department. The liability endorsement shall contain original

signatures and shall be submitted to the Department pursuant to subsection (f)(1) of this section.

(B) The certificate of insurance shall be completed by utilizing only DHS Form 8107 (revised 1/91) which shall be provided by the Department. The certificate of insurance shall contain original signatures and shall be submitted to the Department pursuant to subsection (f)(1) of this section.

(4) An owner or operator of a new facility shall submit the liability endorsement or certificate of insurance to the Department at least 60 days before the date on which hazardous waste is first received for transfer, treatment, storage or disposal. The insurance shall be effective before this initial receipt of hazardous waste.

(g) Financial test for liability coverage.

(1) An owner or operator may satisfy the requirements of this section by demonstrating that he or she passes a financial test as specified in this subsection. To pass this test the owner or operator shall meet the criteria of subsection (g)(1)(A) or (B):

(A) The owner or operator shall have:

1. Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

2. Tangible net worth of at least $10 million; and

3. Assets in the United States amounting to either: (1) At least 90 percent of total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

(B) The owner or operator shall have:

1. A current rating for the 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

2. Tangible net worth of at least $10 million; and

3. Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

4. Assets in the United States amounting to either: (1) At least 90 percent of total assets; or (2) at least six times the amount of liability coverage to be demonstrated by this test.

(2) The phrase "amount of liability coverage" as used in subsection (g)(1) of this section refers to the annual aggregate amounts for which coverage is required under subsections (a) and (b) of this section.

(3) To demonstrate that this test can be met, the owner or operator shall submit the following items to the Department:

(A) A letter signed by the owner's or operator's chief financial officer and worded as specified in DHS Form 8110 (revised 1/91) which shall be provided by the Department. The letter shall be on the official letterhead stationery of the owner or operator, and shall contain an original signature. An owner or operator may use the financial test to demonstrate both assurance for closure or postclosure care, as specified by Sections 66264.143(f), 66264.145(f), 66265.143(e) and 66265.145(e), and liability coverage as specified in subsections (a) and (b) of this section. If an owner or operator is using the financial test to cover both forms of financial responsibility; a separate letter is not required.

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

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

1. The independent certified public accountant 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

2. In connection with that procedure, no matters came to the independent certified public accountant's attention which caused him or her to believe that the specified data should be adjusted.

(4) An owner or operator of a new facility shall submit the items specified in subsection (g)(3) of this section to the Department at least 60 days before the date on which hazardous waste is first received for transfer, treatment, storage or disposal.

(5) After the initial submission of items specified in subsection (g)(3) of this section, the owner or operator shall send updated information to the Department within 90 days after the close of each succeeding fiscal year. This information shall consist of all items specified in subsection (9)(3) of this section.

(6) If the owner or operator no longer meets the requirements of subsection (g)(1) of this section, liability coverage shall be obtained for the entire amount of coverage as described in this section by use of the financial mechanisms described in this section. Notice shall be sent to the Department of the owner's or operator's intent to obtain the required coverage; notice shall be sent by either registered mail or by certified mail within 90 days after any occurence that prevents the owner or operator from meeting the test requirements. Evidence of liability coverage shall be submitted to the Department within 90 days after any occurrence that prevents the owner or operator from meeting the requirements.

(7) The Department may, based on a reasonable belief that the owner or operator no longer meets the requirements of subsection (9)(1) of this section, require reports of financial condition at any time from the owner or operator in addition to those specified in

subsection (g)(3) of this section. If the Department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of subsection (g)(1) of this section, the owner or operator shall provide alternate financial assurance for closure and postclosure care and evidence of the required liability coverage as specified in this article within 30 days after notification of such a finding.

(8) The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his or her report on examination of the owner's or operator's financial statements (see subsection (g)(3)(B) of this section). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Department will evaluate other qualifications on an individual basis. The owner or operator shall provide evidence of liability coverage for the amount required as specified in this article within 30 days after notification of disallowance.

(9) During the period of postclosure care, the Department shall approve a decrease in the current postclosure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Department that the amount of the cost estimate exceeds the remaining cost of postclosure care.

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

(A) An owner or operator substitutes alternate financial assurance for closure and postclosure care and evidence of liability insurance as specified in this article; or

(B) The Department releases the owner or operator from the requirements of this section in accordance with Sections 66264.143(j), 66264.145(j) and 66264.147(f).

(h) Guarantee for liability coverage.

(1) Subject to subsection (h)(2) of this section, an owner or operator may meet the requirements of this section by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor shall be the direct or high-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor shall meet the requirements for owners or operators in subsections (g)(1) through (10) of this section. The corporate guarantee shall conform to the wording as specified by the Department and shall have original signatures. A certified copy of the guarantee shall accompany the items sent to the Department as specified in subsection (g)(3) of this section. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter shall describe the value received in consideration of the corporate guarantee. If the guarantor is a firm with a "substantial business relationship"

with the owner or operator, this letter shall describe this "substantial business relationship" and the value received in consideration of the corporate guarantee. The terms of the corporate guarantee shall provide that:

(A) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor shall do so up to the limits of coverage.

(B) The corporate guarantee shall remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Department. This corporate guarantee shall. not be terminated unless and until the Department approve(s) alternate liability coverage complying with Section 66264.147 and/or Section 66265.147.

(2) (A) In the case of corporations incorporated in states other than California, a guarantee may be used to satisfy the requirements of this section only if the Attorney General or Insurance Commissioner of the State in which the guarantor is incorporated, has submitted a written statement to the Department that a guarantee executed as described in this section is a legally valid and enforceable obligation in that State.

(B) In the case of corporations incorporated outside the United States, a corporate guarantee may be used to satisfy the requirements of this section only if (A) the non-U.S. corporation has identified a registered agent for service of process in the State in which a facility covered by the corporate guarantee is located and in the State in which it has its principal place of business, and (B) the Attorney General or Insurance Commissioner of the State in which a facility covered by the corporate guarantee is located and the State in which the guarantor corporation has its principal place of business, has submitted a written statement to the Department that a corporate guarantee executed as described in this section is a legally valid and enforceable obligation in this State.

(i) Letter of credit for liability coverage:

(1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit that conforms to the requirements of this subsection and submitting a copy of the letter of credit to the Department.

(2) The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or state agency.

(3) The letter of credit shall be worded as specified in DHS Form 8103 (revised 1/91) which shall be provided by the Department. The letter of credit shall contain orginal signatures.

(j) Payment bond for liability coverage:

(1) An owner or operator may satisfy the requirements of this section by obtaining a payment bond that conforms to the requirements of this subsection and submitting a copy of the bond to the Department.

(2) The surety company issuing the bond shall be among those listed as acceptable sureties on Federal bonds in the most recent Circular 570 of the U.S. Department of the Treasury.

(3) The payment bond shall be completed by utilizing only DHS Form 8112 (revised 1/91) which shall be provided by the Department. The payment bond shall contain original signatures.

(4) A payment bond may be used to satisfy the requirements of this section only if the Attorney General or Insurance Commissioner of the State in which the surety is incorporated, has submitted a written statement to the Department that a payment bond executed as described in this section is a legally valid and enforceable obligation in that State.

(k) Trust fund for liability coverage:

(1) An owner or operator may satisfy the requirements of this section by establishing a trust fund that conforms to the requirements of this subsection and submitting an originally signed duplicate of the trust agreement to the Department.

(2) The trustee shall 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.

(3) The trust fund for liability coverage shall be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this section. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, shall either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in this section to cover the difference. For purposes of this subsection, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden and/or nonsudden occurrences required to be provided by the owner or operator by this section, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

(4) The trust agreement shall be completed by utilizing only DHS Form 8100 (revised 1/91) which shall be provided by the Department.

(1) Liability Coverage--Alternative Mechanism.

(1) An owner or operator of facilities which manage solely non-RCRA hazardous waste may demonstrate the required liability coverage by means of a mechanism other than as specified provided that prior to its use the proposed mechanism has been submitted to and approved by the Department. The mechanism shall be at least equivalent to the mechanisms specified in subsections (f), (g), (h), (i), (j) and (k) of this section. The Department shall evaluate the equivalency of a mechanism principally in terms of:

(A) Certainty of the availability of funds for the required liability coverage; and

(B) the amount of funds that will be made available.

The Department may also consider other factors deemed to be appropriate, and may require the owner or operator to submit additional information as is deemed necessary to make the determination.

(2) The owner or operator shall submit to the Department the proposed mechanism together with a letter requesting that the alternate mechanism be considered acceptable for meeting the

requirements of subsections (a) and (b) of this section. The submission shall include the following information:

(A) The name, address and phone number of the issuing institution; and

(B) Hazardous waste facility identification number, name, address and the amount of liability coverage to be provided for each facility; and

(C) The terms of the proposed mechanism (period of coverage, renewal/extension, cancellation).

(3) The Department shall notify the owner or operator in writing of the determination made regarding the proposed mechanism's acceptability in lieu of the other mechanisms specified in subsections (c), (g), (h), (i), (j) and (k) of this section.

(4) If a proposed mechanism is found acceptable, the owner or operator shall submit a fully executed document to the Department. The document shall contain original signatures and shall be accompanied by a formal certification of acknowledgment.

(5) If a proposed mechanism is found acceptable except for the amount of coverage, the owner or operator shall either increase the coverage or obtain other liability coverage as specified in subsections (a) and (b) of this section.

The amount of coverage available through the combination of mechanisms shall at least equal the amounts required by subsections (a) and (b) of this section.

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.

Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.147.

66264.148. Incapacity of Owners or Operators, Guarantors, or Financial Institutions.

(a) An owner or operator shall notify the Department by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in Section 66264.143(f) and Section 66264.145(f) shall make such a notification if named as debtor, as required under the terms of the corporate guarantee (Section 66264.151(h)).

(b) An owner or operator who fulfills the financial assurance or liability coverage requirements by obtaining a trust fund, surety bond, letter of credit, or insurance policy shall be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or a suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator shall establish other financial assurance or liability coverage within 60 days after such an event.

NOTE: Authority cited: Sections 208, 25150, 25159, 25159.5 and 25245, Health and Safety Code.
Reference: Section 25245, Health and Safety Code; 40 CFR Section 264.148.

Article 9. Use and Management of Containers

66264.170. Applicability.

The regulations in this article apply to owners and operators of all hazardous waste facilities that transfer or store containers of hazardous waste, except as Section 66264.1 provides otherwise.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.170.

66264.171. 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 shall transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this chapter.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.171.

66264.172. Compatibility of Waste with Containers.

The owner or operator shall use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be transferred or stored, so that the ability of the container to contain the waste is not impaired.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.172.

66264.173. Management of Containers.

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

(b) A container holding hazardous waste shall not be opened, handled, transferred or stored in a manner which may rupture the container or cause it to leak. Reuse of containers for transportation shall comply with the requirements of the U.S. Department of Transportation regulations including those set forth in 49 CFR Section 173.28.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.173.

66264.174. Inspections.

At least weekly, the owner or operator shall inspect areas used for container storage or transfer, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25195.5, Health and Safety Code; 40 CFR Section 264.174.

66264.175. Containment.

(a) Container transfer and storage areas shall have a containment system that is designed and operated in accordance with subsection (b) of this section.

(b) A containment system shall be designed and operated as follows:

(1) A base shall underlie 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 shall be sloped or the containment system shall be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

(3) The containment system shall have sufficient capacity to contain precipitation from at least a 24-hour, 25-year storm plus 10% of the aggregate volume of all 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 shall be prevented unless the collection system has sufficient excess capacity in addition to

that required in subsection (b) (3) of this section to contain any run-on which might enter the system; and

(5) Spilled or leaked waste and accumulated precipitation shall be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. If the collected material is a hazardous waste under Chapter 11 of this division, it shall be managed as a hazardous waste in accordance with all applicable requirements of Chapters 12 through 16 of this division. 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 Federal Clean Water Act, as amended (33 U.S.C. Section 1342).

(c) The owner or operator shall submit to the Department with the application for a hazardous waste facility permit a written statement signed by an independent, qualified professional engineer, registered in California, that indicates that the containment system is suitably designed to achieve the requirements of this section.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.175.

66264.176. Special Requirements for Ignitable or Reactive Waste.

Containers holding ignitable or reactive waste shall be located at least 15 meters (50 feet) from the facility's property line.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.176.

66264.177. Special Requirements for Incompatible Wastes.

(a) Incompatible wastes, or incompatible wastes and materials (see Appendix V for examples), shall not be placed in the same container, unless Section 66264.17(b) is complied with.

(b) Hazardous waste shall not be placed in an unwashed container that previously held an incompatible waste or material.

(c) A container holding a hazardous waste that is incompatible with any waste or other materials transferred or stored nearby in other containers, piles, open tanks, or surface impoundments shall be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.177.

66264.178. Closure.

At closure, all hazardous waste and hazardous waste residues shall be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues shall be decontaminated or removed. At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with Section 66261.3(e) of this division that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with all applicable requirements of Chapters 12 through 16 of this division.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159, 25159.5 and 25245, Health and Safety Code; 40 CFR Section 264.178.

Article 10. Tank Systems

66264.190. Applicability.

The requirements of this article apply to owners and operators of facilities that use tank systems for transferring, storing or treating hazardous waste except as otherwise provided in subsections (a) and (b) of this section or in Section 66264.1 of this chapter.

(a) Tank systems that are used to transfer, store or treat hazardous waste which contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in Section 66264.193. To demonstrate the absence or presence of free liquids in the transferred/stored/treated waste, EPA Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Publication No. SW-846 Third Edition, November 1986) shall be used.

(b) Tank systems, including sumps, as defined in Section 66260.10, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in Section 66264.193(a) of this article.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.190.

66264.191. Assessment of Existing Tank System's Integrity.

(a) Tanks shall have sufficient shell strength and, for closed tanks, pressure controls (e.g., vents) to assure that they do not collapse or rupture. The Department will review the design of the tanks, including the foundation, structural support, seams and pressure controls and seismic considerations. The Department 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 approving a minimum thickness, the Department shall rely upon appropriate industrial design standards and other available information.

(b) For each tank system which was in existence on or before July 14, 1986, that does not have secondary containment meeting the requirements of Section 66264.193, the owner or operator shall determine that the tank system is not leaking or is unfit for use. Except as provided in subsection (d) of this section, and in addition to the requirements of subsection (f) of this section, the owner or operator shall obtain and keep on file at the facility a written assessment reviewed and certified by an independent, qualified professional engineer, registered in California, in accordance with Section 66270.11(d), that attests to the tank system's integrity by the dates indicated below:

(1) January 12, 1988, for tanks containing RCRA hazardous wastes, unless the owner/operator is a conditionally exempt small quantity generator as defined in 40 CFR Section 261.5, or is a 100 to 1000 kg per month generator as defined in 40 CFR Section 265.201; or

(2) One year after the effective date of these regulations, for tanks containing only non-RCRA hazardous wastes, and tanks containing RCRA hazardous wastes, if the owner/operator is a conditionally exempt small quantity generator or is a 100 to 1000 kg per month generator.

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

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

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

(3) Existing corrosion protection measures;

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

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

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

(B) For other than non-enterable underground tanks and for ancillary equipment, this assessment shall include either a leak test, as described above, or other integrity examination, that is certified by an independent, qualified, professional engineer, registered in California, in accordance with Section 66270.11 (d), that addresses cracks, leaks, corrosion, and erosion; and

(6) Those design requirements and factors listed in subsection (a) of this section.

(d) For tank systems that transfer, store or treat materials that become hazardous wastes subsequent to the dates indicated below, this assessment shall be conducted within 12 months after the date that the waste becomes a hazardous waste:

(1) July 14, 1986, for tanks containing RCRA hazardous wastes, unless the owner/operator is a conditionally exempt small quantity generator as defined in 40 CFR Section 261.5, or is a 100 to 1000 kg per month generator as defined in 40 CFR Section 265.201; or

(2) The effective date of these regulations, for:

(A) Tanks containing only non-RCRA hazardous wastes, and

(B) Tanks containing RCRA hazardous wastes, if the owner/operator is a conditionally exempt small quantity generator or is a 100 to 1000 kg per month generator.

(e) If, as a result of the assessment conducted in accordance with subsection (b) of this section, a tank system is found to be leaking or unfit for use, the owner or operator shall comply with the requirements of Section 66264.196.

(f) Owners or operators of all existing tank systems shall submit to the Department with Part B of the application for a hazardous waste facility permit, a written statement, signed by an independent, qualified professional engineer, registered in California, in accordance with Section 66270.11(d), attesting that the tanks and containment system are suitably designed to achieve the requirements of this article.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.191.

66264.192. Design and Installation of New Tank Systems or Components.

(a) Tanks shall have sufficient shell strength and, for closed tanks, pressure controls (e.g., vents) to assure that they do not collapse or rupture. The Department will review the design of the tanks, including the foundation, structural support, seams and pressure controls and seismic considerations. The Department 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 approving a minimum thickness, the Department shall rely upon appropriate industrial design standards and other available information.

(b) Owners or operators of new tank systems or components shall obtain and submit to the Department, at time of submittal of Part B information, a written assessment, reviewed and certified by an independent, qualified professional engineer, registered in California, in accordance with Section 66270.11 (d), attesting that the tank system has sufficient structural integrity and is acceptable for the transferring, storing and treating of hazardous waste and that the tanks and containment system are suitably designed to achieve the requirements in this article. The assessment shall show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that

the tank system has sufficient structural strength, compatibility with the waste(s) to be transferred, stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. This assessment, which will be used by the Department to review and approve or disapprove the acceptability of the tank system design, shall also include, at a minimum, the following information:

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

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

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

(A) Factors affecting the potential for corrosion, including but not limited to:

1. Soil moisture content;

2. Soil pH;

3. Soil sulfides level;

4. Soil resistivity;

5. Structure to soil potential;

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

7. Existence of stray electric current;

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

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

1. Corrosion-resistant materials of construction such as special alloys, fiberglass reinforced plastic, etc.;

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

3. Electrical isolation devices such as insulating joints, flanges, etc.

(4) For underground tank system components that are likely to be adversely affected by vehicular traffic, a determination of design or

operational measures that will protect the tank system against potential damage;

(5) Design considerations to ensure that:

(A) Tank foundations will maintain the load of a full tank;

(B) Tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone subject to the standards of Section 66264.18 (a); and

(C) Tank systems will withstand the effects of frost heave; and

(6) Those design requirements and factors listed in subsection (a) of this section.

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

(1) Weld breaks;

(2) Punctures;

(3) Scrapes of protective coatings;

(4) Cracks;

(5) Corrosion;

(6) Other structural damage or inadequate construction/installation.

All discrepancies shall be remedied before the tank system is covered, enclosed, or placed in use.

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

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

(f) Ancillary equipment shall be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

(g) The owner or operator shall provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided under subsection (b) (3) of this section, or other corrosion protection if the Department believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated shall be supervised by an independent corrosion expert to ensure proper installation.

(h) The owner or operator shall obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of subsections (c) through (g) of this section, that attest that the tank system was properly designed and installed and that repairs, pursuant to subsections (c) and (e) of this section, were performed. These written statements shall also include the certification statement as required in Section 66270.11 (d) of this division.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.192.

66264.193. Containment and Detection of Releases.

(a) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of this section shall be provided (except as provided in subsections (f) and (g) of this section):

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

(2) For all tank systems which were in existence on or before July 14, 1986, ~~which~~ that have been used to transfer, store or treat EPA Hazardous Waste Nos. F020, F021, F022, F023, F026 and F027, within two years after the dates indicated below:

(A) January 12, 1987, for tanks containing RCRA hazardous wastes, unless the owner/operator is a conditionally exempt small quantity generator as defined in 40 CFR Section 261.5, or is a 100 to 1,000 kg per month generator as defined in 40 CFR Section 265.201; or

(B) The effective date of these regulations for tanks containing RCRA hazardous wastes, if the owner/operator is a conditionally exempt small quantity generator or is a 100 to 1,000 kg per month generator.

(3) For those tank systems of known and documented age, which were in existence on or before July 14, 1986, within two years after

the dates indicated below or when the tank system has reached 15 years of age, whichever comes later:

(A) January 12, 1987, for tanks containing RCRA hazardous wastes, unless the owner/operator is a conditionally exempt small quantity generator as defined in 40 CFR Section 261.5, or is a 100 to 1,000 kg per month generator as defined in 40 CFR Section 265.201; or

(B) The effective date of these regulations, for tanks containing only non-RCRA hazardous wastes, and tanks containing RCRA hazardous wastes, if the owner/operator is a conditionally exempt small quantity generator or is a 100 to 1,000 kg per month generator.

(4) For those existing tank systems which were in existence on or before July 14, 1986, containing RCRA hazardous wastes (unless the owner/operator is a conditionally exempt small quantity generator as defined in 40 CFR Section 261.5, or is a 100 to 1,000 kg per month generator as defined in 40 CFR Section 265.201) for which the age cannot be documented, within 8 years of January 12, 1987; but if the age of the facility is greater than 7 years as of January 12, 1987, secondary containment shall be provided by the time the facility reaches 15 years of age, or within 2 years of January 12, 1987, whichever comes later;

(5) For those tank systems which are in existence on or before the effective date of these regulations containing only non-RCRA hazardous wastes (and for those containing RCRA hazardous wastes, if the owner/operator is a conditionally exempt small quantity generator

or is a 100 to 1,000 kg per month generator) for which the age cannot be documented, within 8 years from effective date of these regulations; but if the age of the facility is greater than 7 years as of the effective date of these regulations, secondary containment shall be provided by the time the facility reaches 15 years of age, or within 2 years from effective date of these regulations, whichever comes later; and

(6) For tank systems that transfer, store or treat materials that become hazardous wastes subsequent to the dates indicated below, within the time intervals required in subsections (a)(1) through (a)(5) of this section, except that the date that a material becomes a hazardous waste shall be used in place of the dates indicated below:

(A) January 12, 1987, for tanks containing RCRA hazardous wastes, unless the owner/operator is a conditionally exempt small quantity generator as defined in 40 CFR Section 261.5, or is a 100 to 1,000 kg per month generator as defined in 40 CFR Section 265.201.; or

(B) The effective date of these regulations, for tanks containing only non-RCRA hazardous wastes, and tanks containing RCRA hazardous wastes, if the owner/operator is a conditionally exempt small quantity generator or is a 100 to 1,000 kg per month generator.

(b) Secondary containment systems shall be:

(1) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, groundwater or surface water at any time during the use of the tank system; and

(2) Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(c) To meet the requirements of subsection (b) of this section, secondary containment systems shall be at a minimum:

(1) Constructed of or lined with materials that are compatible with the wastes(s) to be placed in the tank system and shall have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which it is exposed, climatic conditions and the stress of daily operation (including stresses from nearby vehicular traffic).

(2) Provided with a foundation or base underlying the tanks capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system and capable of preventing failure due to settlement, compression or uplift. This base shall be free of cracks or gaps and sufficiently impervious to contain leaks, spills and accumulated precipitation until the collected material is detected and removed.

(3) Provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the owner or operator can demonstrate to the Department that existing detection technologies or site conditions will not allow detection of a release within 24 hours; and

(4) Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills or precipitation. Spilled or leaked waste and accumulated precipitation shall be removed from the secondary containment system within as timely a manner as is necessary to prevent overflow of the containment system, but within no more than 24 hours, or in as timely a manner as possible to prevent harm to human health and the environment, if the owner or operator can demonstrate to the Department that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours and that overflow of the containment system will not occur.

A) If the collected material is a hazardous waste under Chapter 11 of this division, it shall be managed as a hazardous waste in accordance with all applicable requirements of Chapters 12 through 15 of this division.

(B) If the collected material is discharged through a point source to waters of the United States, the owner or operator shall

comply with the requirements of Sections 301, 304, and 402 of the Federal Clean Water Act, as amended (33 U.S.C. Sections 1311, 1314 and 1342, respectively).

(C) If the collected material is discharged to a Publicly Owned Treatment Works (POTW), the owner or operator shall comply with the requirements of Section 307 of the Federal Clean Water Act, as amended (33 U.S.C. Section 1317).

(D) If the collected material is released to the environment, the owner or operator shall comply with the applicable reporting requirements of Title 40 CFR Part 302.

(d) Secondary containment for tanks shall include one or more of the following devices:

(1) A liner (external to the tank);

(2) A vault;

(3) A double-walled tank; or

(4) An equivalent device as approved by the Department.

(e) In addition to the requirements of subsections (b), (c) and (d) of this section, secondary containment systems shall satisfy the following requirements:

(1) External liner systems shall be:

(A) Designed or operated to contain precipitation from a 24-hour, 25-year storm event plus the greater of 10 percent of the aggregate volume of all tanks or 100 percent of the capacity of the largest tank within its boundary, whichever is greater;

(B) Designed or operated to prevent run-on and infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity, in addition to that required in subsection (e)(1)(A) of this section, to contain run-on and infiltration from a 25-year, 24-hour rainfall event.

(C) Free of cracks or gaps; and

(D) Designed and installed to surround the tank completely and to cover all surrounding earth likely to come into contact with the waste if the waste is released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).

(2) Vault systems shall be:

(A) Designed or operated to contain precipitation from a 24-hour, 25-year storm event plus the greater of 10 percent of the aggregate volume of all tanks or 100 percent of the capacity of the largest tank within its boundary, whichever is greater;

(B) Designed or operated to prevent run-on and infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity, in addition to that required in subsection (e)(2)(A) of this section, to contain run-on and infiltration from a 25-year, 24-hour rainfall event;

(C) Constructed with chemical-resistant water stops in place at all joints (if any);

(D) Provided with an impermeable interior coating or lining that is compatible with the waste being transferred, stored or treated and that will prevent migration of waste into the concrete;

(E) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being transferred, stored or treated:

1. Meets the definition of ignitable waste under Section 66261.21 of this division; or

2. Meets the definition of reactive waste under Section 66261.23 of this division, and may form an ignitable or explosive vapor; and

(F) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

(3) Double-walled tanks shall be:

(A) Designed as an integral structure (i.e., an inner tank completely enveloped within an outer shell) so that any release from the inner tank is contained by the outer shell.

(B) Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell; and

(C) Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours, or at the earliest practicable time, if the owner or operator can demonstrate to the Department, and the Department concludes, that the existing detection technology or site conditions would not allow detection of a release within 24 hours.

(f) Ancillary equipment shall be provided with secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of subsections (b) and (c) of this section except for:

(1) Aboveground piping (exclusive of flanges, joints, valves and other connections) that are visually inspected for leaks on a daily basis;

(2) Welded flanges, welded joints and welded connections, that are visually inspected for leaks on a daily basis;

(3) Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and

(4) Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.

(g) The owner or operator may obtain a variance from the requirements of this section for existing above-ground tanks in place, if the Department finds, as a result of a demonstration by the owner or operator that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituents into the groundwater or surface water at least as effectively as secondary containment during the active life of the tank system, or that in the event of a release that does migrate to groundwater or surface water, no substantial present or potential hazard will be posed to human health or the environment.

(1) In deciding whether to grant a variance based on a demonstration of equivalent protection of groundwater and surface water, the Department will consider:

(A) The nature and quantity of the wastes;

(B) The proposed alternate design and operation;

(C) The hydrogeologic setting of the facility, including the thickness of soils present between the tank system and groundwater, and

(D) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to groundwater or surface water.

(2) In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the Department will consider:

(A) The potential adverse effects on groundwater, surface water and land quality taking into account:

1. The physical and chemical characteristics of the waste in the tank system, including its potential for migration.

2. The hydrogeological characteristics of the facility and surrounding land,

3. The potential for health risks caused by human exposure to waste constituents,

4. The potential for damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents, and

5. The persistence and permanence of the potential adverse effects;

(B) The potential adverse effects of a release on groundwater quality, taking into account:

1. The quantity and quality of groundwater and the direction of groundwater flow,

2. The proximity and withdrawal rates of groundwater users,

3. The current and future uses of groundwater in the area, and

4. The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;

(C) The potential adverse effects of a release on surface water quality, taking into account:

1. The quantity and quality of groundwater and the direction of groundwater flow,

2. The patterns of rainfall in the region,

3. The proximity of the tank system to surface waters,

4. The current and future uses of surface waters in the area and any water quality standards established for those surface waters, and

5. The existing quality of surface water, including other sources of contamination and the cumulative impact on surface water quality; and

(D) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

1. The patterns of rainfall in the region, and

2. The current and future uses of the surrounding land.

(3) The owner or operator of a tank system, for which a variance from secondary containment has been granted in accordance with the requirements of subsection (g)(1) of this section, at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), shall:

(A) Comply with the requirements of Section 66264.196, except subsection (b)(5), and

(B) Decontaminate or remove contaminated soil to the extent necessary to:

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

2. Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water; and

(C) If contaminated soil cannot be removed or decontaminated in accordance with subsection (g)(3)(B) of this section, comply with the requirements of Section 66264.197(b).

(4) The owner or operator of a tank system, for which a variance from secondary containment has been granted in accordance with the requirements of subsection (g)(1) of this section, at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), shall:

(A) Comply with the requirements of Section 66264.196(b); and

(B) Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if groundwater has been contaminated, the owner or operator shall comply with the requirements of Section 66264.197(b); and

(C) If repairing, replacing or reinstalling the tank system, provide secondary containment in accordance with the requirements of subsections (a) through (f) of this section or reapply for a variance from secondary containment and meet the requirements for new tank systems in Section 66264.192 if the tank system is replaced. The owner or operator shall comply with these requirements even if contaminated soil can be decontaminated or removed and groundwater or surface water has not been contaminated.

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

(1) The Department shall be notified in writing by the owner or operator that the facility intends to conduct and submit a demonstration for a variance from secondary containment as allowed in subsection (g) of this section at least 24 months prior to the date that secondary containment is required to be provided in accordance with subsection (a) of this section. Additionally, if a variance is sought from the requirements of Section 66264.193(i)(1), to the extent allowed under subsection (i) of this section, the demonstration shall be submitted to the Department with Part B of the permit application.

(2) As part of the notification, the owner or operator shall also submit to the Department a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration shall address each of the factors listed in subsection (g)(1) or subsection (g)(2) of this section;

(3) The demonstration for a variance shall be completed within 180 days after notifying the Department of an intent to conduct the demonstration; and

(4) If a variance is granted under this subsection, the Department will require the permittee to construct and operate the tank system in the manner that was demonstrated to meet the requirements for the variance.

(i) All tank systems, until such time as secondary containment that meets the requirements of this section is provided, shall comply with the following:

(1) Subsections (c)(2), (c)(4), (e)(1) (A) or (e)(2) (A) (except for tanks that do not contain free liquids), and (e)(1)(B) or (e)(2)(B).

(2) For nonenterable underground tanks, a leak test that meets the requirements of Section 66264.191(c)(5) or other tank integrity method, as approved or required by the Department, shall be conducted at least annually.

(3) For other than nonenterable underground tanks, the owner or operator shall either conduct a leak test as in subsection (i)(2) of this section or develop a schedule and procedure for an assessment of the overall condition of the tank system by an independent, qualified professional engineer, registered in California, in accordance with Section 66270.11(d). The schedule and procedure shall be adequate to

detect obvious cracks, leaks, and corrosion or erosion that may lead to cracks and leaks. The owner or operator shall remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed. The frequency of these assessments shall be based on the material of construction of the tank and its ancillary equipment, the age of the system, the type of corrosion or erosion protection used, the rate of corrosion or erosion observed during the previous inspection and the characteristics of the waste being stored or treated.

(4) For ancillary equipment, a leak test or other integrity assessment as approved by the Department shall be conducted at least annually.

(5) The owner or operator shall maintain on file at the facility a record of the results of the assessments conducted in accordance with subsections (i)(2) through (i)(4) of this section.

(6) If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in subsections (i)(2) through (i)(4) of this section, the owner or operator shall comply with the requirements of Section 66264.196.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.193.

66264.194. General Operating Requirements.

(a) Hazardous wastes or other materials (e.g., treatment reagents) shall not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.

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

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

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

(3) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation from at least a 24-hour, 25-year storm.

(c) The owner or operator shall comply with the requirements of Section 66264.196 if a leak or spill occurs in the tank system.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.194.

66264.195. Inspections.

(a) The owner or operator shall develop and follow a schedule and procedure for inspecting overfill controls and shall inspect the overfill controls at least once each operating day to ensure that they are in good working order.

(b) The owner or operator shall inspect at least once each operating day:

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

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

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

(4) For uncovered tanks, the level of waste in the tank, to ensure compliance with Section 66264.194 (b) (3).

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

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

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

(d) The owner or operator shall document in the operating record of the facility an inspection of those items in subsections (a) through (c) of this section.

(e) As part of the inspection schedule required in Section 66264.15 (b), and in addition to the specific requirements of subsection (a) of this section, the owner or operator shall develop a schedule and procedure for assessing the condition of the tank. The schedule and procedure shall 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 Section 66264.191 (a). Procedures for emptying a tank to allow entry and inspection of the interior shall be established, when necessary, to detect corrosion or erosion of the tank sides and bottom. The frequency of these assessments shall be based on the material of construction of the tank, type of corrosion or erosion observed during previous

inspections and the characteristics of the waste being transferred, treated or stored.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.195.

66264.196. Response to Leaks or Spills and Disposition of Leaking or Unfit-for-Use Tank Systems.

(a) As part of the contingency plan required under this chapter, the owner or operator shall specify the procedures the facility 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.

(b) A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, shall be removed from service immediately, and the owner or operator shall satisfy the following requirements:

(1) General emergency procedures. The owner or operator shall comply with applicable requirements of Section 66264.56 of this division.

(2) Cessation of use; prevention of flow or addition of wastes. The owner or operator shall immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

(3) Removal of waste from tank system or secondary containment system.

(A) If the release was from the tank system, the owner/operator shall, within 24 hours after detection of the leak or, if the

owner/operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

(B) If the material released was to a secondary containment system, all released materials shall be removed within as timely a manner as is necessary to prevent overflow of the containment system, but within no more than 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment if the owner or operator provides the demonstration required by Section 66264.193 (c)(4).

(4) Containment of visible releases to the environment. The owner/operator shall immediately conduct a visual inspection of the release and, based upon that inspection:

(A) Prevent further migration of the leak or spill to soils or surface water; and

(B) Remove, and properly dispose of, any visible contamination of the soil or surface water.

(5) Notifications, reports.

(A) Any release to the environment, except as provided in subsection (b)(5)(B) of this section, shall be reported to the Department within 24 hours of its detection.

(B) A leak or spill of hazardous waste is exempted from the requirements of subsection (b)(5) of this section, but is not exempt from the requirements of Section 66264.56, if it is:

1. Less than or equal to a quantity of one (1) pound, and

2. Immediately contained and cleaned up.

(C) Within 30 days of detection of a release to the environment, a report containing the following information shall be submitted to the Department:

1. Likely route of migration of the release;

2. Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

3. Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data shall be submitted to the Department as soon as they become available.

4. Proximity to downgradient drinking water, surface water, and populated areas; and

5. Description of response actions taken or planned.

(6) Provision of secondary containment, repair, or closure.

(A) Unless the owner/operator satisfies the requirements of subsection (b)(6)(B) through (D) of this section, the tank system shall be closed in accordance with Section 66264.197.

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

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

(D) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner/operator shall provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of Section 66264.193 before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component shall be repaired and may be returned to service without secondary containment as long as the requirements of subsection (b)(7) of this section are satisfied. If a component is replaced to comply with the requirements of this subsection, that component shall satisfy the requirements for new tank systems or components in Sections 66264.192

and 66264.193. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component shall be provided with secondary containment in accordance with Section 66264.193 prior to being returned to use.

(7) Certification of major repairs. If the owner/operator has repaired a tank system in accordance with subsection (b)(6) of this section, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system shall not be returned to service unless the owner/operator has obtained a certification by an independent, qualified, professional engineer, registered in California, in accordance with Section 66270.11(d), that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification shall be submitted to the Department within seven days after returning the tank system to use.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.196.

66264.197. Closure and Post-Closure Care.

(a) At closure of a tank system, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless Section 66261.3 (e) of this division applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems shall meet all of the requirements specified in Articles 7 and 8 of this chapter.

(b) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in subsection (a) of this section, then the owner or operator shall close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills Section 66264.310. In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator shall meet all of the requirements for landfills specified in Articles 7 and 8 of this chapter.

(c) If an owner or operator has a tank system that does not have secondary containment that meets the requirements of Section 66264.193 (b) through (f) and has not been granted a variance from the secondary containment requirements in accordance with Section 66264.193 (g), then:

(1) The closure plan for the tank system shall include both a plan for complying with subsection (a) of this section and a contingent plan for complying with subsection (b) of this section.

(2) A contingent post-closure plan for complying with subsection (b) of this section shall be prepared and submitted as part of the permit application.

(3) The cost estimates calculated for closure and post-closure care shall reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if those costs are greater than the costs of complying with the closure plan prepared for the expected closure under subsection (a) of this section.

(4) Financial assurance shall be based on the cost estimates in subsection (c) (3) of this section.

(5) For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans shall meet all of the closure, post-closure, and financial responsibility requirements for landfills under Articles 7 and 8 of this chapter.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.197.

66264.198. Special Requirements for Ignitable or Reactive Wastes.

(a) Ignitable or reactive waste shall not be placed in tank systems, unless:

(1) The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

(A) The resulting waste, mixture, or dissolved material no longer meets the definition of ignitable or reactive waste under Sections 66261.21 or 66261.23 of this division, and

(B) Section 66264.17(b) is complied with; or

(2) The waste is transferred, stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react; or

(3) The tank system is used solely for emergencies.

(b) The owner or operator of a facility where ignitable or reactive waste is transferred, stored or treated in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code," (1977 or 1981), (incorporated by reference, see Section 66260.11).

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.198.

66264.199. Special Requirements for Incompatible Wastes.

(a) Incompatible wastes, or incompatible wastes and materials, shall not be placed in the same tank system, unless Section 66264.17(b) is complied with.

(b) Hazardous waste shall not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless Section 66264.17(b) is complied with.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.199.

Article 11. Surface Impoundments

66264.220. Applicability.

The regulations in this article apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste except as Section 66264.1 of this chapter provides otherwise.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.220.

66264.221. Design and Operating Requirements.

(a) Any surface impoundment that is not covered by subsection (c) of this section or Section 66265.221 shall have a liner for all portions of the impoundment (except for existing portions of such impoundments). The liner shall be designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the active life (including the closure period) of the impoundment. The liner may be constructed of materials that may allow wastes to migrate into the liner (but not into the adjacent subsurface soil or ground water or surface water) during the active life of the facility, provided that the impoundment is closed in accordance with Section 66264.228 (a) (1). For impoundments that will be closed in accordance with Section 66264.228 (a) (2), the liner shall be constructed of materials that can prevent wastes from migrating into the liner during the active life of the facility. The liner shall be:

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

(2) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the

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

(3) Installed to cover all surrounding earth likely to be in contact with the waste or leachate.

(b) The owner or operator will be exempted from the requirements of subsection (a) of this section if the Department 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 into soil outside the impoundment or into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Department 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 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.

(5) The potential for lateral migration of hazardous constituents which could present a threat to public health or the environment.

(6) Recommendations of the State Water Resources Control Board or the appropriate Regional Water Quality Control Board.

(c) The owner or operator of each new surface impoundment, each new surface impoundment unit at an existing facility, each replacement of an existing surface impoundment unit, and any lateral expansion of an existing surface impoundment unit, constructed after February 2, 1985, shall install two or more liners and a leachate collection system between such liners. The liners and leachate collection system must protect human health and the environment. When an existing surface impoundment is expanded after February 2, 1985, the entire surface impoundment will be treated as a surface impoundment constructed after February 2, 1985. The requirements of this subsection shall apply with respect to all RCRA waste received after the issuance of the permit for units where the part B of the permit application is received by the Department after November 2, 1984. The requirements of this subsection shall apply with respect to all non-RCRA waste received after the issuance of the permit. The requirement for the installation of two or more liners in this subsection may be satisfied by the installation of a top liner designed, operated and constructed of materials to prevent the migration of any constituent into such liner during the period such facility remains in operation (including any post-closure monitoring period), and a lower liner designed, operated, and constructed to prevent the migration of any constituent through such liner during

such period. For the purpose of the preceding sentence, a lower liner shall be deemed to satisfy such requirement if it is constructed of at least a 3-foot thick layer of recompacted clay or other natural material with a permeability of not more than 1X10-7 centimeter per second relative to the waste or leachate to be contained.

(d) The liners shall be designed and constructed to contain the waste and leachate fluids when subjected to the maximum anticipated hydraulic head which will be imposed during disposal operations and the post-closure maintenance period.

(e) The leachate collection and removal system shall:

(1) Be designed, constructed, maintained and operated to collect leachate from the area, and to ensure that there is no buildup of hydraulic head on the liner. The depth of fluid in the collection sump shall be kept at a minimum needed to ensure sufficient pump operation.

(2) Be designed and operated to function without clogging through the active life and scheduled closure of the impoundment area and throughout the post-closure maintenance period; and

(3) Consist of a permeable subdrain layer which covers all portions of the natural or artificial liner expected to be in contact with waste and leachate. The collection system shall be 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 disposal area.

(f) Subsection (c) of this section will not apply if the owner or operator demonstrates to the Department, and the Department finds for such surface impoundment, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as such liners and leachate collection systems.

(g) The double liner requirement set forth in subsection (c) of this section shall be waived by the Department for any monofill, if:

(1) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than exceeding the soluble threshold limit concentration as described in Section 66261.24; and

(2) (A) 1. The monofill has at least one liner for which there is no evidence that such liner is leaking. For the purposes of this subsection, the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, ground water, or surface water at any time during

the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of subsection (c) of this section on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner, at the closure of such impoundment, the owner or operator shall remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment will comply with appropriate post-closure requirements, including but not limited to groundwater monitoring and corrective action;

2. The monofill is located more than one-quarter mile from an underground source of drinking water as defined in Section 66260.10 of this chapter; and

3. The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with permits; or

(A) The owner or operator demonstrates that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.

(h) A surface impoundment shall 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.

(i) A surface impoundment shall 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.

(j) The Department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR 40 Section 264.221.

66264.222-66264.225 [Reserved]

66264.226. Monitoring and Inspection.

(a) During construction and installation, liners (except in the case of existing portions of surface impoundments exempt from Section 66264.221 (a)) and cover systems (e.g., membranes, sheets, or coatings) shall 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 shall 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 shall be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

(b) While a surface impoundment is in operation, it shall 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) The presence of liquids in leak detection systems.

(4) 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 shall obtain a certification from a qualified engineer, registered in California, 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;

(2) Will not fail due to scouring or piping, without dependence on any liner system included in the surface impoundment construction.

(3) Will not fail due to external or internal forces from a maximum credible earthquake or landslide.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.226.

66264.227. Emergency Repairs; Contingency Plans.

(a) A surface impoundment shall be removed from service in accordance with subsection (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 subsection (a) of this section, the owner or operator shall:

(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 Department of the problem in writing within seven days after detecting the problem.

(c) As part of the contingency plan required in Article 4 of this chapter, the owner or operator shall specify a procedure for complying with the requirements of subsection (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 Section 66264.226 (c).

(2) If the impoundment was removed from service as the result of a sudden drop in the liquid level, then:

(A) For any existing portion of the impoundment, a liner shall be installed in compliance with Section 66264.221 (a); and

(B) For any other portion of the impoundment, the repaired liner system shall be certified by a qualified engineer, registered in California, 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 shall be closed in accordance with the provisions of Section 66264.228.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.227.

66264.228. Closure and Postclosure Care.

(a) At closure, the owner or operator shall:

(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 Section 66261.3(d) applies; or

(2) (A) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(B) Stabilize remaining wastes to a bearing capacity sufficient to support final cover; and

(C) Cover the surface impoundment with a final cover designed and constructed to:

1. Prevent the downward entry of water into the closed impoundment throughout a period of at least 100 years.

2. Function with minimum maintenance;

3. Promote drainage and minimize erosion or abrasion of the final 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.

6. Accommodate lateral and vertical shear forces generated by the maximum credible earthquake so that the integrity of the cover is maintained.

7. Preclude ponding of rainfall and surface run-on over the closed area.

(b) If some waste residues, contaminated materials or contaminated soils are left in place at final closure, the owner or operator shall comply with all postclosure requirements contained in Sections 66264.117 through 66264.120, including maintenance and monitoring throughout the postclosure care period (specified in the permit under Section 66264.117). The owner or operator shall:

(1) Close the facility in a manner that will minimize any chance of postclosure release of hazardous waste or discarded hazardous material; facilitate postclosure maintenance, monitoring and emergency response; and require minimum maintenance of containment structures, leachate collection systems and surface drainage collection or diversion systems.

(2) 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;

(3) Maintain and monitor the leachate collection and removal system which also serves as a leak detection system.

(4) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Article 6 of this chapter; and

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

(c) (1) If an owner or operator plans to close a surface impoundment in accordance with subsection (a)(1) of this section, then:

(A) The closure plan for the impoundment under Section 66264.112 shall include both a plan for complying with subsection (a)(1) of this section and a contingent plan for complying with subsection (a)(2) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(B) The owner or operator shall prepare a contingent postclosure plan under Section 66264.118 for complying with subsection (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under Sections 66264.142 and 66264.144 for closure and postclosure care of an impoundment subject to this paragraph shall include the cost of complying with the contingent closure plan and the contingent postclosure plan.

(d) During the postclosure care period, if liquids leak into a leak detection system, the owner or operator shall notify the Department of the leak in writing within seven (7) days after detecting the leak.

(e) If waste is to remain in a unit after closure, the owner or operator shall comply with, and plan for compliance with the following:

(1) The unit shall be compacted before any portion of the final cover is installed.

(2) (Reserved)

(3) (Reserved)

(4) A foundation layer shall be provided for the compacted barrier layer of the final cover. If needed, the foundation layer shall contain herbicide sufficient to prevent vegetative growth, and shall be free of decomposable organic matter. The layer shall be compacted at a moisture content sufficient to achieve the density required to provide adequate support for the nonearthen membrane.

(5) A compacted barrier layer of clean earth shall be provided above the foundation layer, and shall be provided around the unit to a depth as low as the level at which the owner or operator has deposited waste, to prevent lateral migration of waste and gas and vapor from the waste. The layer of earth shall be wholly below the average depth of frost penetration, and shall be compacted at a moisture content sufficient to achieve a percent compaction that has been demonstrated, with the specific cover material to be used, to prevent the downward entry of water into the foundation layer for a period of at least 100 years.

(6) The earthen material shall contain herbicide sufficient to prevent growth of vegetation. The slope of the final top surface of the compacted barrier layer shall be sloped after allowance for settling and subsidence to prevent the build up of hydraulic head.

(7) The owner or operator may use nonearthen materials for the barrier layer provided it is demonstrated to the satisfaction of the Department that a barrier layer of alternative composition will equally impede movement of fluid and be as durable as a compacted earthen barrier.

(8) If hazardous waste is underlain by a liner containing a synthetic membrane, then a synthetic membrane shall be provided in the final cover above the compacted barrier layer. The membrane shall be made of material chemically resistant to the waste at the facility, whether or not contact between the membrane and the waste is anticipated, and shall have thickness and strength sufficient to

withstand the stresses to which it shall be subjected, including shear forces, puncture from rocks or penetration from roots.

(9) If a synthetic membrane is used in the final cover system, the owner or operator shall provide a layer of material above the synthetic membrane of the final cover, and a layer of material below this synthetic membrane, to protect the membrane from damage.

(10) The owner or operator shall provide a water drainage layer, blanket or channel above the compacted barrier layer of the final cover to provide a path for water to exit rapidly.

(11) The owner or operator shall provide a filter layer above the water drainage layer to prevent soils from clogging the drainage layer.

(12) The owner or operator shall provide a layer of top soil of thickness sufficient to support vegetation for erosion controlled deep enough to prevent root penetration into the filter layer. The top soil shall have characteristics to protect the compacted layer against drying that would lead to cracking, to resist erosion and to support vegetation growth.

(13) Permanent disposal areas shall be graded at closure so that with allowance for settling and subsidence, the slope of the land surface above all portions of the cover, shall be sufficient to prevent ponding of water. Such areas shall be graded to drain precipitation away from the disposal area. Portions of the land

surface above the cover unavoidably having slopes great enough to invite erosion which cannot be readily controlled by vegetation shall be protected by gunite, riprap or other material sufficient to provide erosion control.

(14) Unless vegetation on the cover would pose a significant fire hazard unacceptable to the fire prevention authority or would interfere with a planned postclosure use of the site that is acceptable to the Department, the owner or operator shall provide conditions favorable for hearty growth of vegetation that will provide erosion control without forming roots that would penetrate the compacted earth cover, and shall estimate the cost of providing such conditions and vegetation as part of the cost of closure. Vegetation for closed disposal areas shall be selected to require minimum watering and maintenance. Plantings shall not impair the integrity of containment structures or the final cover.

(15) At and after closure, permanent disposal areas shall have drainage systems capable of transporting water from the water drainage layer away from the closed facility and capable of diverting surface runoff away from or around disposal areas, containment structures, leachate collection systems and monitoring facilities. Drainage systems shall be capable of preventing erosion of containment structures. Drainage system components themselves shall be lined or otherwise protected against erosion.

(16) (A) When closing a permanent disposal site, the owner or operator shall provide for installation of permanent benchmarks from

which the horizontal location and elevation of the cover and other containment features, monitoring facilities and drainage features can be determined throughout the entire postclosure care period. All survey work shall conform to accepted survey practices and be performed and certified by a licensed land surveyor or registered professional engineer licensed to practice surveying.

(B) The owner or operator shall submit a copy of the surveyor's notes used to establish the benchmarks described in this subsection in accordance with Section 66264.116.

(17) The owner or operator shall provide in the closure plan predictions of the magnitude of the drops in elevation that will occur at various portions of the top surface of the final cover as a result of settling and subsidence. The prediction shall account for compression of material underlying the liner (or underlying the waste if there is no liner) and compression of the liner, waste, fill and cover. The prediction of the drop in elevation due to compression shall account for immediate settlement, primary consolidation, secondary consolidation and creep, liquefaction and dynamic consolidation due to earthquake loads.

(18) If the following information has not already been submitted to the Department and if dikes and hazardous waste will remain at the site after closure, the owner or operator shall provide in the closure plan proof that the dikes have sufficient structural integrity to withstand forces to which they can be exposed during and after closure, including the following:

(A) Descriptions of topography and site conditions as required by Section 66270.14(b)(18);

(B) Depiction of the design layout, sections and details of the impoundment and its components, including cover, dike, liner, drainage and leak detection system;

(C) A description of, and the results of, stability analyses for the following conditions:

1. Foundation soil bearing failure;

2. Failure in the dike slopes; and

3. Build-up of hydrostatic pressure due to failure of drainage system and cover, considering the potential for piping and erosion.

(D) Strength and compressibility test results pertaining to the dike material;

(E) Descriptions of dike construction and postclosure maintenance procedures with schedules and specifications;

(F) Descriptions of subsurface soil conditions, groundwater levels, bedrock conditions and seismic setting of the site.

(G) Discussion of the occurrence or nonoccurrence of the following factors and the significance of those factors to the integrity of the dikes:

1. Frost, freezing, wind, rain, temperature variations, effects of vegetation and animals and activities of humans.

2. Adversely oriented joints, slickensides or fissured material, faults, seams of soft materials and weak layers.

3. Potential for liquefaction during earthquakes coincident with existence of saturated conditions due to failure of drainage system and cover.

(H) A certification by a professional engineer registered in California that the dikes have sufficient structural integrity to withstand forces to which they can be exposed during and after closure, based on analyses, tests and inspections that include the following:

1. A review of all the geologic, geotechnical, geohydrologic and other pertinent design, construction and service data;

2. A review of all climatic data, and special geologic events, such as earthquakes, which occurred during the entire period the impoundment was in service;

3. A field inspection to detect signs of settlement, subsidence, cracks, scouring, erosion, slides, holes, piping, seepage, sloughing, condition of vegetation, etc.; and

4. A determination if the original design was adequate and a review of possible changes in parameters used in the original design.

(19) The owner or operator shall include in the closure plan an explanation of how the cover, construction procedures and planned postclosure care are designed to accommodate or avoid the effects of differential settlement and consolidation without loss of integrity of the cover.

(f) Before installing the compacted barrier layer of the final cover the owner or operator shall accurately establish the correlation between the desired permeability and the density at which that permeability is achieved. To accomplish this the owner or operator shall:

(1) Provide a representative foundation area for a test compacted barrier layer having drainage conditions representative of the closed facility under the compacted barrier layer;

(2) Install a compacted barrier layer over that test area that has the depth and materials of construction that the compacted barrier layer for the entire landfill is planned to have, and that is compacted in the manner planned for the compacted barrier layer for the entire landfill;

(3) Undertake permeability tests in the test area under saturated conditions that represent the maximum hydraulic head that could be exerted on the compacted barrier layer of the final cover. A sufficient number of tests shall be run to verify the results. A permeability test shall commence after the test apparatus has run for a time long enough to allow the required daily rate of replenishment water to maintain constant head or to follow an asymptotic or constant trend. The rate of evaporation from the test equipment used to determine permeability shall be established;

(4) Undertake a sufficient number of tests in the test area to determine the average density at which permeability complying with subsection (e)(5) of this section is obtained.

(g) The owner or operator shall comply with the following when installing the compacted barrier layer of the final cover:

(1) In each day in which final cover material is compacted, the owner or operator shall establish a grid on the upper surface of each layer compacted that day and randomly conduct density tests. A sufficient number of tests shall be conducted to confirm the effectiveness and uniformity of the compaction.

(2) If the Department indicates areas where compaction tests will be needed, the owner or operator shall undertake such tests in those areas.

(3) If the average of the values of percent compaction from the tests is lower than the average density pursuant to subsection (f)(4) of this section, the entire layer installed on the day represented by the tests shall be removed and replaced with another layer compacted so that compaction tests taken indicate a density higher than the average density determined pursuant to subsection (f)(4) of this section.

(5) An independent, qualified person registered in California as a professional engineer or certified in California as an engineering geologist shall supervise the undertaking of all tests for permeability and percent compaction, shall supervise the construction of the final cover and shall prepare a report to be submitted to the Department which bears his or her signature and the date of the signature, and describes the results of all tests and indicates whether or not the cover, as installed, complies with the requirements of this chapter.

(6) Before starting compaction of earthen material to form the compacted barrier layer of the cover, the owner or operator shall submit to the Department the results of the following determinations, on material to be used for the compacted barrier layer of the final cover:

(A) Percent fines;

(B) Plastic limit, liquid limit, plasticity index and shrinkage factors;

(C) Soil classification;

(D) Carbon content;

(E) Concentration of soluble salts in soil pore water.

(h) All slopes shall be designed and constructed to minimize the potential for failure. Any slope failure occurring within the site shall be promptly stabilized and the Department and the appropriate regional board shall be notified immediately by the owner or operator of such failure and the methods taken for stabilization.

(i) Adequate facilities shall be provided to ensure for a 100 year period that no leachate shall be discharged to surface waters or groundwater, except as authorized by the hazardous waste facility permit.

(j) Hazardous waste and discarded hazardous material contained in the closed facility shall be protected from washout and erosion as the result of tides or floods having a predicted frequency of once in 100 years.

(k) An inspection and monitoring program shall be established at every closed disposal area wherein an independent, qualified engineer registered in California shall annually evaluate and document the condition of all surface improvements, drainage facilities, erosion control facilities, vegetative cover, gas control facilities and monitoring facilities. This program shall also document the presence

of any water or leachate flowing from the disposal area. The engineer shall evaluate the following and the effects of the following:

(1) Condition of access control (fences and gates),

(2) Condition of vegetation,

(3) Erosion,

(4) Cracking,

(5) Disturbance by cold weather,

(6) Seepage,

(7) Slope stability,

(8) Subsidence,

(9) Settlement,

(10) Monitoring the leak detection system, if there is one,

(11) Operation of the leachate collection and removal system,

(12) Monitoring the groundwater monitoring system,

(13) Condition of run-on and run-off control systems, and

(14) Condition of surveyed benchmarks.

The program shall be continued by the owner or operator of the disposal area throughout the postclosure care period. A copy of the annual report containing the above-cited observations shall be filed in a timely manner with the Department and the appropriate regional board.

(m) All constructed features which will remain at permanent disposal areas containing hazardous waste material shall be able to withstand the maximum credible earthquake without significant damage to foundations, structures, waste containment features and features which control leachate, surface drainage, erosion and gas.

(n) (Reserved)

(o) If monitoring equipment or other features which are required to be operable after closure of the facility pursuant to this chapter are rendered inoperable, the owner or operator shall render it operable or replace it with operable equipment or other features.

(p) Postclosure care which the owner or operator shall provide for shall include the conducting of surveys by a licensed land surveyor, to determine the horizontal location and elevation of the cover and other containment features, monitoring facilities and drainage features, and markers installed at the site pursuant to

subsection (e)(16) of this section. Such surveys shall be taken annually.

(q) The owner or operator shall reconstruct the closed facility to restore slopes and other conditions to conform to the requirements of this chapter when movement at the site has caused them not to comply with such requirements.

(r) The owner or operator shall submit annual reports to the Department describing measures undertaken at the site during the postclosure maintenance period.

NOTE: Authority cited: Sections 208, 25150, 25159.5 and 25245, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.228.

66264.229. Special Requirements for Ignitable or Reactive Waste.

Ignitable or reactive waste shall not be placed in a surface impoundment unless the waste and impoundment satisfy all applicable requirements of Chapter 18 of this Division, and:

(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 Sections 66261.21 or 66261.23 of this chapter; and

(2) Section 66264.17(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.

NOTE: Authority cited: Sections 208, 25150 and 25159 Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5 Health and Safety Code; 40 CFR Section 264.229.

66264.230. Special Requirements for Incompatible Wastes.

Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this chapter for examples) shall not be placed in the same surface impoundment, unless Section 66264.17(b) is complied with.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.230.

66264.231. Special Requirements for Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 shall not be placed in a surface impoundment unless the owner or operator operates the surface impoundment in accordance with a management plan for these wastes that is approved by the Department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of this chapter. The factors to be considered are:

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

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

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

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

(b) The Department shall impose additional design, operating, and monitoring requirements for surface impoundments managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 if necessary to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.231.

Article 12. Waste Piles

66264.250. Applicability.

(a) The regulations in this article apply to owners and operators of facilities that store or treat hazardous waste in piles, except as Section 66264.1 provides otherwise.

(b) The regulations in this article do not apply to owners or operators of waste piles that are part of a permitted facility and are closed with wastes left in place. Such waste piles are subject to regulation under Article 14 of this chapter (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 Section 66264.251 or under Article 6 of this chapter, provided that:

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

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

(3) The pile is designed 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 decomposition or other reactions.

NOTE: Authority cited: 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.250.

66264.251. Design and Operating Requirements.

(a) A waste pile (except for an existing portion of a waste pile) shall have:

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

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

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

(C) 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 pile. The Department shall 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 shall be:

(A) Constructed of materials that are:

1. Chemically resistant to the waste managed in the pile and the leachate expected to be generated; and

2. 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

(B) Designed and operated to function without clogging through the scheduled closure of the waste pile.

(b) If the liner is constructed of material that allows waste to migrate into the liner, it shall be designed and constructed in accordance with provisions of Section 66264.221(d).

(c) If the liner is constructed of earth, it shall be at least two feet thick, be installed at a relative compaction of 90 percent, and have permeability no greater than 1 X 10-7 centimeter per second relative to the leachate to be contained.

(d) The leachate collection and removal system shall conform to Section 66264.221.

(e) The owner or operator will be exempted from the requirements of subsection (a) of this section, if the Department 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 into the ground water or surface water at any future time. In deciding whether to grant an exemption, the Department 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;

(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; and

(5) The potential for lateral migration of hazardous constituents which could present a threat to public health or the environment.

(f) The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the

active portion of the pile during peak discharge from at least a 25-year storm.

(g) The owner or operator shall design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(h) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems shall be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(i) If the pile contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the pile to control wind dispersal.

(j) The Department will specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(k) If the Department determines that monitoring in the normally unsaturated zone as required pursuant to Article 6 of this chapter is impracticable, the Department shall require the following when a waste pile is established:

(1) The pile shall be underlain by two liners which are designed and constructed in a manner that prevents the migration of liquids

into or out of the space between the liners. Both liners shall meet all the specifications of subsection (a)(1) of this section.

(2) A leak detection system shall be designed, constructed, maintained and operated between the liners to detect any migration of liquids into the space between the liners.

(3) The pile shall have a leachate collection and removal system above the top liner that is designed, constructed, maintained and operated in accordance with subsection (a)(2) of this section.

(1) If liquid leaks into the leak detection system, the owner or operator shall:

(1) Notify the Department of the leak in writing within seven days after detecting the leak; and

(2) 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 an independent, qualified engineer, registered in California, that, to the best of the engineer's knowledge and opinion, the leak has been stopped.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.251.

66264.254. Monitoring and Inspection.

(a) During construction or installation, liners (except as exempted from Section 66264.251(a)) and cover systems (e.g., membranes, sheets, or coatings) shall 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 shall 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 shall be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

(b) While a waste pile is in operation, it shall 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 liquids in leak detection systems, where installed to comply with Section 66264.251(k);

(4) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

NOTE: Authority cited: Sections 208, 25141 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code.

66264.255 [Reserved]

66264.256. Special Requirements for Ignitable or Reactive Waste.

Ignitable or reactive waste shall not be placed in a waste pile unless: the waste and waste pile satisfy all applicable requirements of Chapter 18 of this Division, and:

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

(1) The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under Sections 66261.21 or 66261.23 of this chapter; and

(2) Section 66264.17(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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.256.

66264.257. Special Requirements for Incompatible Wastes.

(a) Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this part for examples) shall not be placed in the same pile, unless Section 66264.17(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 shall be separated from the other materials, or protected from them by means of a dike, berm, wall, or other device.

(c) Hazardous waste shall not be piled on the same base where incompatible wastes or materials were previously piled, unless the base has been decontaminated sufficiently to ensure compliance with Section 66264.17(b).

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.257.

66264.258 Closure and Post-Closure Care.

(a) At closure, the owner or operator shall 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 Section 66261.3 (d) 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 subsection (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, the owner or operator shall close the facility and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (Section 66264.310).

(c) (1) The owner or operator of a waste pile shall:

(A) Include in the closure plan for the pile under Section 66264.112 both a plan for complying with subsection (a) of this section and a contingent plan for complying with subsection (b) of this section in case not all contaminated subsoils can be practicably removed at closure; and

(B) Prepare a contingent post-closure plan under Section 66264.118 for complying with subsection (b) of this section in case not all contaminated subsoils can be practicably removed at closure.

(2) The cost estimates calculated under Sections 66264.142 and 66264.144 for closure and post-closure care of a pile subject to this subsection shall include the cost of complying with the contingent closure plan and the contingent post-closure plan.

NOTE: Authority cited: Sections 208, 25150, 25159, Health and Safety Code.
Reference: Sections 25150, 25159, 25159.5 and 25245, Health and Safety Code; 40 CFR Section 264.258.

66264.259. Special Requirements for Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 shall not be placed in waste piles unless the owner or operator operates the waste pile in accordance with a management plan for these wastes that is approved by the Department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of this chapter. The factors to be considered are:

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

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

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

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

(b) The Department shall impose additional design, operating, and monitoring requirements for piles managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and, FO27 if necessary to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.259.

Article 13. Land Treatment

66264.270. Applicability.

The regulations in this article apply to owners and operators of facilities that treat or dispose of hazardous waste in land treatment units, except as Section 66264.1 provides otherwise.

NOTE: Authority cited: Sections 208, 25150, and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.270.

66264.271. Treatment Program.

(a) An owner or operator of a facility subject to this article shall 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 Department 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 Section 66264.272;

(2) Design measures and operating practices necessary to maximize the success of degradation, transformation, and immobilization processes in the treatment zone in accordance with Section 66264.273 (a); and

(3) Vadose zone monitoring provisions meeting the requirements of Section 66264.278.

(b) The Department will specify in the facility permit the constituents of concern that shall be degraded, transformed, or immobilized under this article.

(c) The Department will specify the vertical and horizontal dimensions of the treatment zone in the facility permit. The treatment zone is the portion of the vadose 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 shall be:

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

(2) More than 1.5 meters (5 feet) above the highest anticipated elevation of the water table.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159, 25159.5 and 25209.1, Health and Safety Code; 40 CFR Section 264.271.

66264.272. Treatment Demonstration.

(a) For each waste that will be applied to the treatment zone, the owner or operator shall demonstrate, prior to application of the waste, that constituents of concern 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 subsection (a) of this section, the owner or operator shall obtain a treatment or disposal permit under Section 66270.63. The Department shall specify in this permit the testing, analytical, design, and operating requirements (including the duration of the tests and analyses, and, in the case of field tests, the horizontal and vertical dimensions of the treatment zone, monitoring procedures, closure and clean-up activities) necessary to meet the requirements in subsection (c) of this section.

(c) Any field test or laboratory analysis conducted in order to make a demonstration under subsection (a) of this section shall:

(1) Accurately simulate the characteristics and operating conditions for the proposed land treatment unit including:

(A) The characteristics of the waste (including the presence of constituents listed in Appendix VIII of Chapter 11);

(B) The climate in the area;

(C) The topography of the surrounding area;

(D) The characteristics of the soil in the treatment zone (including depth); and

(E) The operating practices to be used at the unit.

(2) Be likely to show that constituents of concern 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:

(A) The characteristics of the waste to be tested;

(B) The operating and monitoring measures taken during the course of the test;

(C) The duration of the test;

(D) The volume of waste used in the test;

(E) In the case of field tests, the potential for migration of constituents of concern to ground water or surface water.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.272.

66264.273. Design and Operating Requirements.

The Department 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 shall design, construct, operate and maintain the unit to maximize the degradation, transformation and immobilization of constituents of concern in the treatment zone. The owner or operator shall design, construct, operate and maintain the unit in accord with all design and operating conditions that were used in the treatment demonstration under Section 66264.272. At a minimum, the Department 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 shall design, construct, operate and maintain the treatment zone to prevent run-off of constituents of concern during the active life of the land treatment unit.

(c) The owner or operator shall 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 shall design, construct, operate and maintain a run-off management system to collect, control and properly manage 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 shall 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 shall manage the unit to control wind dispersal.

(g) The owner or operator shall 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.

(h) The growth of food-chain crops in or on the treatment zone is prohibited.

(i) The owner or operator shall manage the unit to keep the release of airborne contaminants below nuisance levelsor other levels necessary to protect human health or the environment.

(j)(1) Unless granted a variance pursuant to subsection (j)(2) of this section, or exempted pursuant to subsection (l) of this section, every new land treatment unit at a new or existing facility, every land treatment unit which replaces an existing land treatment unit, and every laterally expanded portion of an existing land treatment unit is required to be equipped with two or more liners and a leachate collection system meeting the requirements established in Section 66264.301(c) for new landfills.

(2) The Department shall grant a variance from the requirements of subsection (j)(1) or subsection (k) of this section if the owner or operator demonstrates to the Department and the Department finds all of the following:

(A) The land treatment unit was an existing land treatment unit as of January 1, 1988, and no hazardous constituents identified in Appendix VIII to Chapter 11 of this division have migrated from the treatment zone of the land treatment unit into the vadose zone or into the waters of the State, and no other hazardous constituents

have migrated from the land treatment unit into the vadose zone or into the waters of the State in concentrations which pollute or threaten to pollute the vadose zone or the waters of the State. In making this demonstration the owner or operator shall take a sufficient number of core samples in, beneath and surrounding the treatment zone of the land treatment unit to characterize the chemical constituents in the treatment zone, in the immediate area of the vadose zone surrounding the treatment zone, and in the area of the vadose zone beneath the treatment zone and shall submit groundwater monitoring data sufficient in scope to demonstrate that there has been no migration of hazardous constituents in the vadose zone or into the waters of the State in concentrations which pollute or threaten to pollute the waters of the State. The owner or operator, as an alternative to taking these core samples, may use the data obtained from any land treatment demonstration required by the department pursuant to Section 66264.272 if the data were obtained not more than two years prior to the application for the variance and were sufficient in scope to demonstrate that there has been no migration of hazardous constituents into the vadose zone or into the waters of the State in concentrations which pollute or threaten to pollute the vadose zone or waters of the State.

(B) Notwithstanding the date that the land treatment unit commenced operations, the design and operating practices will prevent the migration of hazardous constituents identified in Appendix VIII to Chapter 11 of this division from the treatment zone of the land treatment unit into the vadose zone or into the waters of the State, and no other hazardous constituents have migrated from the land

treatment unit into the vadose zone or into the waters of the State in concentrations which pollute or threaten to pollute the vadose zone or the waters of the State.

(C) Notwithstanding the date that the land treatment unit commenced operations, the design and operating practices provide for rapid detection and removal or remediation of any hazardous consistuents that migrate from the treatment zone of the land treatment unit into the vadose zone or the waters of the State in concentrations that pollute or threaten to pollute the vadose zone or the waters of the State.

(3) (A) The Department shall renew a variance only in those cases where an owner or operator demonstrates to the Department and the Department finds, both of the following:

1. No hazardous constituents have migrated from the treatment zone of the land treatment unit into the vadose zone or into the waters of the State concentrations which pollute or threaten to pollute the vadose zone or the waters of the State.

2. Continuing the operation of the land treatment unit does not pose a significant threat of hazardous constituents migrating from the land treatment unit into the vadose zone or into the waters of the State in concentrations which pollute or threaten to pollute the vadose zone or the waters of the State.

(B) In making the demonstration for the renewal of a variance pursuant to this subsection, the owner or operator may use field tests, laboratory analysis or operating data.

(4) A variance or a renewal of a variance may be issued for a period not to exceed three years.

(5) Neither the requirements of this section nor the variance provisions of subsection (j)(2) shall relieve the owner or operator from responsibility to comply with all other existing laws and regulations pertinent to land treatment units.

(k) Unless granted a variance pursuant to subsection (j)(2) or exempted under subsection (l) of this section, after January 1, 1990, no person shall discharge hazardous waste into a land treatment unit which has not been equipped with liners and a leachate collection and removal system which satisfy the requirements of subsection (j)(1) of this section.

(l) Land treatment of soil contaminated only with non-RCRA hazardous waste which has been excavated as part of a removal or remedial action at any hazardous substance release site is exempt from the requirements of subsection (j) of this section if all of the following apply:

(1) The Department determines that the land treatment does not pose a threat to public health or safety or the environment.

(2) The land treatment is conducted pursuant to a plan approved by the Department or a cleanup and abatement order issued by a regional water quality control board.

(3) The land treatment is not conducted at an offsite commercial facility.

(4) The land treatment is used only for purposes of removal or remedial action and, upon completion of the land treatment portion of the removal or remedial action, the land treatment unit is closed.

(m) For purposes of this section, the terms "removal", "remedial action", "hazardous substance" and "release" shall be defined in accordance with Article 2 (commencing with Section 25310) of Chapter 6.8 Division 20 of the Health and Safety Code.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159, 25159.5, 25209.2, 25209.3 and 25209.5, Health and Safety Code; 40 CFR Section 264.273.

66264.278. Vadose Zone Monitoring and Response.

In addition to the water quality monitoring and response requirements of Article 6 and the environmental monitoring requirements of Article 17 of this chapter, an owner or operator subject to this article shall establish a vadose zone monitoring program to discharge the following responsibilities:

(a) The owner or operator shall monitor the soil and soil-pore liquid to determine whether constituents of concern migrate out of the treatment zone.

(1) The Department will specify the constituents of concern to be monitored in the facility permit. The constituents of concern to be monitored are those specified under Section 66264.271(b).

(2) The Department may require monitoring for principal constituents of concern in lieu of the constituents specified under Section 66264.271(b). Principal constituents of concern are the 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 Department may establish principal constituents of concern if it finds, based on waste analyses, treatment demonstrations, or other data, that effective degradation, transformation, or immobilization of the constituent will assure treatment at at least equivalent levels for the other constituents of concern in the wastes.

(b) The owner or operator shall install a vadose zone monitoring system that includes soil monitoring using soil cores and soil-pore liquid monitoring using devices such as lysimeters. The vadose zone monitoring system shall 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 shall establish a background concentration for each constituent of concern to be monitored under subsection (a) of this section. The permit will specify the background concentrations for each constituent or specify the procedures to be used to calculate the background concentrations.

(1) Background soil concentrations 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 concentrations shall 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 shall express all background concentrations in a form necessary for the determination of statistically significant increases under subsection (f) of this section.

(4) In taking samples used in the determination of all background concentrations, the owner or operator shall use a vadose zone monitoring system that complies with subsection (b)(1) of this section.

(d) The owner or operator shall conduct soil monitoring and soil-pore liquid monitoring immediately below the treatment zone. The Department will specify the frequency and timing of soil and soil-pore liquid monitoring in the facility permit after considering the water quality monitoring requirements of Article 6 of this chapter, the frequency, timing, and rate of waste application, and the soil permeability. The owner or operator shall express the results of soil and soil-pore liquid monitoring in a form necessary for the determination of statistically significant increases under subsection (f) of this section.

(e) The owner or operator shall 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 shall determine whether there is a statistically significant change over background values concentrations for each constituent of concern to be monitored under subsection (a) of this section below the treatment zone each time the owner or operator conducts soil monitoring and soil-pore liquid monitoring under subsection (d) of this section.

(1) In determining whether a statistically significant increase has occurred, the owner or operator shall compare the value concentration of each constituent, as determined under subsection (d) of this section, to the background concentration for that constituent according to the statistical procedure specified in the facility permit under this subsection.

(2) The owner or operator shall determine whether there has been a statistically significant increase below the treatment zone within a reasonable time period after completion of sampling. The Department 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 shall 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 Department will specify a statistical procedure in the facility permit that it finds:

(A) Is appropriate for the distribution of the data used to establish background concentrations; and

(B) 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) Except as provided in Section 66264.273(1), no person shall place or dispose of hazardous waste in a land treatment unit if any of the following conditions exist:

(1) Hazardous constituents have migrated from the land treatment unit into the vadose zone beneath or surrounding the treatment zone or into the waters beneath or surrounding the treatment zone.

(2) There is evidence that a hazardous constituent in the waste discharged to the land treatment unit has not been or will not be completely degraded, transformed or immobilized in the treatment zone.

(3) There is a significant potential for hazardous constituents to migrate from the land treatment unit into a potential source of drinking water.

(h) The owner or operator shall periodically, at the request of the Department, and at least annually, submit information required by the Department to assure that the conditions set forth in subsections (g)(1) and (g)(2) of this section are not present. The information shall include, but is not limited to the results of soil and soil-pore liquid monitoring conducted under subsection (d) of this section.

(i) If the owner or operator determines pursuant to subsection (f) of this section, that there has been a statistically significant increase in the concentration of a hazardous constituent below the treatment zone, or that either of the conditions set forth in subsections (g)(1) or (g)(2) of this section are detected and confirmed, or that conditions exist that render the owner or operator unable to continue to satisfy the variance requirements of Section 66264.273(j)(2), the owner or operator shall:

(1) Within 72 hours, report to the Department describing the full extent of the owner's or operator's findings, including the identification of all constituents which have shown a statistically significant increase..pp (j) Upon receiving notice pursuant to subsection (i) of this section, or upon independent confirmation by the Department, the Department shall order the owner or operator to cease operating the land treatment unit. The owner or operator shall

not resume operating the land treatment unit and shall close the land treatment unit unless one of the following actions is taken:

(1) The owner or operator completes appropriate removal or remedial actions to the satisfaction of the Department, and the owner or operator submits to the Department, and the Department approves, an application for a permit or a variance modification to modify the operating practices at the facility to maximize the success of degradation, immobilization, or transformation processes in the treatment zone; or

(2) The owner or operator completes appropriate removal or remedial actions, submits to the Department, and the Department approves, an application for a permit or a variance modification to modify the operating practices at the facility to maximize the success of degradation, immobilization, or transformation processes in the treatment zone, and equips the land treatment unit with liners and a leachate collection and removal system that satisfy the requirements of Section 66264.273(j)(1).

(k) All actions taken by an owner or operator pursuant to subsections (j)(1) or (j)(2) of this section shall be completed within a time period specified by the Department, which shall not exceed 18 months after the Department receives notice pursuant to subsection (i)(1) of this section. If the actions are not completed within this time period, the land treatment unit shall be closed, unless granted an extension by the Department due to exceptional circumstances beyond the control of the owner and operator.

(l) If the owner or operator determines, pursuant to subsection (f) of this section, that there is a statistically significant increase of hazardous constituents below the treatment zone, the owner or operator may demonstrate that a source other than the land treatment unit 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 subsection in addition to, or in lieu of the requirements under subsections (j)(1) or (j)(2) of this section, the owner or operator is not relieved of the requirements of subsections (j) and (k) of this section unless the demonstration made under this subsection successfully shows that a source other than the land treatment unit caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation. In making a demonstration under this subsection, the owner or operator shall:

(1) Notify the Department in writing within seven days of determining a statistically significant increase below the treatment zone that the owner or operator intends to make a determination under this subsection;

(2) Within 90 days, submit a report to the Department 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 Department an application for a permit modification to make any appropriate changes to the vadose zone monitoring program at the facility; and

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

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159, 25159.5 and 25209.4, Health and Safety Code; 40 CFR Section 264.278.

66264.279. Recordkeeping.

The owner or operator shall include hazardous waste application dates and rates in the operating record required under Section 66264.73.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.279.

66264.280. Closure and Post-Closure Care.

(a) During the closure period the owner or operator shall:

(1) Continue all operations (including pH control) necessary to maximize degradation, transformation, or immobilization of constituents of concern within the treatment zone as required under Section 66264.273(a), except to the extent such measures are inconsistent with subsection (a)(7) of this section.

(2) Continue all operations in the treatment zone to prevent run-off of constituents of concern as required under Section 66264.273(b);

(3) Maintain the run-on control system required under Section 66264.273(c);

(4) Maintain the run-off management system required under Section 66264.273(d);

(5) Control wind dispersal of hazardous waste if required under Section 264.273(f);

(6) Continue vadose zone monitoring in compliance with Section 66264.278, except that soil-pore liquid monitoring may be terminated after the waste added to the treatment zone has been shown to the satisfaction of the Department to have been completely degraded, immobilized or transformed, but in no event can monitoring be

discontinued in less than 90 days after the last application of waste to the treatment zone; and

Insert (7) from next pg.

(8) ~~(7)~~ 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 constituents of concern in the treatment zone. The vegetative cover shall be capable of maintaining growth without extensive maintenance.

(b) For the purpose of complying with Section 66264.115, when closure is completed the owner or operator may submit to the Department certification by an independent qualified soil scientist or an independent, California Certified Engineering Geologist in lieu of an independent California registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

(c) During the ~~closure period and~~ post-closure care period the owner or operator shall:

(1) Continue all operations (including pH control) necessary to enhance degradation and transformation and sustain immobilization of constituents of concern in the treatment 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 Section 66264.273(c);

(4) Maintain the run-off management system required under Section 66264.273(d);

(5) Control wind dispersal of hazardous waste if required under Section 66264.273(f);

(6) Continue vadose zone monitoring in compliance with Section 66264.278 and Section 66264.280 (a)(6); and

(7) Control of the release of airborne contaminants to below hazardous or nuisance levels or other levels as necessary to protect human health or the environment.

(d) The owner or operator is not subject to regulation under subsections (a)(7) and (c) of this section if the Department finds that the level of constituents of concern in the treatment zone soil does not exceed the background value of those constituents by an amount that is statistically significant when using the test specified in subsection (d)(3) of this section and that the waste in the treatment zone has been shown to the satisfaction of the Department to have been completely degraded, transformed or immobilized. The owner or operator may submit such a demonstration to the Department at any time during the closure or post-closure care periods. For the purposes of this subsection:

(1) The owner or operator shall establish background soil values and determine whether there is a statistically significant increase over those values for all constituents of concern specified in the facility permit under Section 66264.271(b).

(A) Background soil concentrations may be based on a one-time sampling of a background plot having characteristics similar to those of the treatment zone where soil has not been contacted by constituents of waste.

(B) The owner or operator shall express background values and values for constituents of concern in the treatment zone in a form necessary for the determination of statistically significant increases under subsection (d)(3) of this section.

(2) In taking samples used in the determination of background and treatment zone concentrations, the owner or operator shall 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 shall compare the concentration of each constituent in the treatment zone to the background concentration 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 shall use a statistical procedure that:

(A) Is appropriate for the distribution of the data used to establish background concentrations; and

(B) Provides a reasonable balance between the probability of falsely identifying a statistically significant increase for a constituent of concern in the treatment zone and the probability of failing to identify a statistically significant increase in the treatment zone.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159, 25159.5 and 25245, Health and Safety Code; 40 CFR Section 264.280.

66264.281. Special Requirements for Ignitable or Reactive Waste.

The owner or operator shall not apply ignitable or reactive waste to the treatment zone unless the waste and the treatment zone meet all applicable requirements of Chapter 18 of this Division, and:

(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 Sections 66261.21 or 66261.23 of this chapter; and

(2) Section 66264.17(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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.281.

66264.282. Special Requirements for Incompatible Wastes.

The owner or operator shall 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 Section 66264.17(b) is complied with.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.282.

66264.283. Special Requirements for Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26 and, FO27 shall not be placed in a land treatment unit unless the owner or operator operates the facility in accordance with a management plan for these wastes that is approved by the Department pursuant to the standards set out in this subsection, and in accord with all other applicable requirements of this chapter. The factors to be considered are:

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

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

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

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

(b) The Department shall impose additional design, operating, and monitoring requirements for land treatment facilities managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 if necessary to reduce the possibility of migration of these wastes to ground

water, surface water, soils outside of the treatment zone, or air so as to protect human health and the environment.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.283.

66264.284-66264.299 [Reserved]

Article 14. Landfills

66264.300. Applicability.

The regulations in this article apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as Section 66264.1 provides otherwise.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.300.

66264.301. Design and Operating Requirements.

(a) Any landfill that is not covered by subsection (c) of this section or 66265.301(a) of this chapter shall have a liner system for all portions of the landfill (except for existing portions). The liner system shall 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) and during post-closure care period of the landfill. The liner shall be constructed of materials that prevent wastes from passing into the liner during the active life of the facility. The liner shall be:

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

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

(C) 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 Department 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 shall be:

(A) Constructed of materials that are:

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

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

(B) Designed and operated to function without clogging through the scheduled closure and post-closure period of the landfill.

(b) The owner or operator shall be exempted from the requirements of paragraph (a) of this section if the Department 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 constituents of concern (see Section 66264.93) into the ground water or surface water at any future time.

In deciding whether to grant an exemption, the Department will consider the factors listed in Section 66264.301(d)(1 through 5).

(c) The owner or operator of each new landfill, each new landfill unit at an existing facility, each replacement of an existing landfill unit, and each lateral expansion of an existing landfill unit, shall install two or more liners and a leachate collection system above and between the liners. The liners and leachate collection systems shall protect human health and the environment. The requirements of this subsection shall apply with respect to all RCRA waste received after the issuance of the permit for units where the part B of the permit application is received by the Department after November 8, 1984. The requirement for the installation of two or more liners in this subsection may be satisfied by the installation of a top liner designed, operated and constructed of materials to prevent the migration of any constituent into such liner during the period such facility remains in operation (including any post-closure monitoring period), and a lower liner designed, operated, and constructed to prevent the migration of any constituent through such liner during such period. For the purpose of the preceding sentence, a lower liner shall be deemed to satisfy such requirement if it is constructed of at least a 3-foot thick layer of recompacted clay or other natural material with a permeability of no more than 1X10-7 centimeter per second relative to the leachate to be contained.

(d) The Department shall grant an owner or operator an exemption from the requirements of subsection (c) if the owner or operator

demonstrates to the Department, and the Department finds for such landfill, that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous constituent into the ground water or surface water or surrounding soils at any future time. In deciding whether to grant an exemption, the Department 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;

(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;

(5) The potential for lateral migration of hazardous constituents which could present a threat to public health or the environment.

(e) The double liner requirement set forth in subsection (c) of this section shall be waived by the Department for any monofill, if:

(1) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes

hazardous for reasons other than exceeding the soluble threshold limit concentration as described in Section 66261.24; and

(2) (A) 1. The monofill has at least one liner for which there is no evidence that such liner is leaking;

2. The monofill is located more than one-quarter mile from an underground source of drinking water as that term is defined in Section 66260.10; and

3. The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with hazardous waste facility permits; or

(B) The owner or operator demonstrates to the satisfaction of the Department, that the monofill is located, designed and operated so as to assure that there will be no migration of any hazardous constituent into ground water, surface water, or surrounding soils at any future time.

(f) The owner or operator shall design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

(g) The owner or operator shall design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(h) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(i) If the landfill contains any particulate matter which may be subject to wind dispersal, the owner or operator shall cover or otherwise manage the landfill to control wind dispersal.

(j) The Department shall specify in the permit all design and operating practices that are necessary to ensure that the requirements of this section are satisfied.

(k) The landfill shall be designed, constructed, operated and maintained to enable the facility to meet the closure and post-closure requirements of Section 66264.310.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.301.

66264.302 [Reserved]

66264.303. Monitoring and Inspection.

(a) During construction or installation, liners (except in the case of existing portions of landfills exempt from 66264.301(a)) and cover systems (e.g., membranes, sheets, or coatings) shall 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 shall 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 shall be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the liner or cover.

(b) While a landfill is in operation, it shall 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;

(3) The presence of liquids in leak detection systems; and

(4) The presence of leachate in and proper functioning of leachate collection and removal systems, where present.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.303.

66264.309. Surveying and Recordkeeping.

The owner or operator of a landfill shall maintain the following items in the operating record required under Section 66264.73:

(a) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks with horizontal and vertical controls; and

(b) The contents of each cell and the approximate location of each hazardous waste type within each cell.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.309.

66264.310. Closure and Post-Closure Care.

(a) At final closure of the landfill or upon closure of any cell, the owner or operator shall cover the landfill or cell with a final cover designed and constructed to:

(1) Prevent the downward entry of water into the closed landfill throughout a period of at least 100 years;

(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;

(5) Accommodate lateral and vertical shear forces generated by the maximum credible earthquake so that the integrity of the cover is maintained;

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

(7) Conform to the provisions of subsections (e) through (r) of Section 66264.228, except that the Department shall grant a variance from any requirement of subsections (e) through (r) which the owner or operator demonstrates to the satisfaction of the Department is not

necessary to protect public health, water quality or other environmental quality.

(b) After final closure, the owner or operator must comply with all post-closure requirements contained in Sections 66264.117 through 66264.120, including maintenance and monitoring throughout the post-closure care period specified in the permit under Section 66264.117. 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) Continue to operate the leachate collection and removal system until leachate is no longer detected;

(3) Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Article 6 of this chapter;

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

(5) Protect and maintain surveyed benchmarks used in complying with Section 66264.309.

(c) Unless the owner or operator can demonstrate to the satisfaction of the Department that significant amounts of toxic or

flammable gas or vapor will not be emitted by waste and that no gas will be emitted that is capable of disrupting the cover or causing other property damage, the owner or operator shall provide a control system designed to prevent migration of gas.

The control system shall be designed to collect gases that are emitted from the buried waste and convey gas or vapor to a flare, incinerator or treatment device that will render the gas or vapor harmless to public health or safety, or to a collection system that allows gas to be exported for use or treatment elsewhere. Any gas collection system used shall be designed to withstand pressures that may result from overburden weight of structures that may overlie the cover, and traffic that may occur.

(d) If gas or vapor that can be expected to be emitted from buried waste after closure would be flammable or toxic, the owner shall describe in the closure plan measures to render such gases or vapors harmless, or export gas from the site, for as many years as they would be emitted from the waste, and shall estimate the cost of such measures as part of the cost of closure and post-closure care of the facility. In that case, the closure plan shall provide a map showing:

(1) The number, spacing and locations of wells to be used for gas extraction;

(2) The location and spacing of piping. Also in that case, the closure plan shall describe the equipment and capability of

equipment, to be provided to render gases or vapor harmless or export gas for use or treatment elsewhere.

If pumping would be needed to assure that such gas is withdrawn at a rate sufficient to avoid hazardous accumulation of gas or vapor or uncontrolled migration of such gas or vapor or uncontrolled migration of such gas or vapor from the facility, the owner or operator shall describe measures to provide such pumping for as many years as such gas or vapor will be emitted from the waste, and shall estimate the cost of such measures as part of the cost of closure and post-closure care of the facility. The closure plan shall in that case describe the type of pump, volume of gas the pump can move per unit time, and the estimated distances from the pump from which gas can be extracted from the landfill. The owner or operator shall provide such measures as needed.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159, 25159.5 and 25245, Health and Safety Code; 40 CFR Section 264.310.

66264.311 [Reserved]

66264.312. Special Requirements for Ignitable or Reactive Waste.

(a) Except as provided in Section 66264.316, ignitable or reactive waste shall not be placed in a landfill, unless the waste and landfill meet all applicable requirements of Chapter 18 of this Division, and 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 66261.21 or 66261.23 of this chapter; and

(2) Section 66264.17(b) is complied with.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.312.

66264.313. Special Requirements for Incompatible Wastes.

Incompatible wastes, or incompatible wastes and materials, (see Appendix V of this chapter for examples) shall not be placed in the same landfill cell, unless subsection 66264.17(b) is complied with.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.313.

66264.314. Special Requirements for Bulk and Containerized Liquids.

(a) Effective February 2, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not absorbents have been added) in any landfill is prohibited.

(b) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the facility shall use Method 9095 (as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods--EPA publication SW-846, Third Edition), except that the representative sample size shall be 100 milliliters and a 400 micron standard conical filter shall be used in lieu of the 60 mesh filter described in Method 9095.

(c) Containers holding free liquids shall 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 Section 66264.316 and is disposed of in accordance with Section 66264.316.

(d) Effective November 8, 1985 the placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the Department, or the Department determines, that:

(1) The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under interim status, which contains, or may reasonably be anticipated to contain, hazardous waste; and

(2) Placement in such owner or operator's landfill will not present a risk of contamination of any underground source of drinking water (as that term is defined in Section 66260.10).

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159, 25159.5 and 25179.5, Health and Safety Code; 40 CFR Section 264.314.

66264.315. Special Requirements for Containers.

Unless they are very small, such as an ampule, containers shall 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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.315.

66264.316. 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 shall be packaged in non-leaking inside containers. The inside containers shall 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 shall be tightly and securely sealed. The inside containers shall 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 shall not be capable of reacting dangerously with, being decomposed by, or being ignited by the

contents of the inside containers in accordance with Section 66264.17 (b).

(d) Incompatible wastes, as defined in Article 1 of this chapter, shall not be placed in the same outside container.

(e) Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in Section 66261.23 (a) (5) of this chapter, shall be treated or rendered non-reactive prior to packaging in accordance with subsections (a) through (d) of this section. Cyanide and sulfide-bearing reactive waste may be packed in accordance with subsections (a) through (d) of this section without first being treated or rendered non-reactive provided that the cyanide concentration is less than 1000 mg/l .

(f) Such disposal is in compliance with the requirements of Chapter 18 of the Division. Persons who incinerate lab packs according to the requirements of Section 66268.42(c)(1) may use fiber drums in place of metal outer containers. Such fiber drums must meet DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements of subsection (b) of this section.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.316.

66264.317. Special Requirements for Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27.

(a) Hazardous Wastes FO20, FO21, FO22, FO23, FO26, and FO27 shall not be placed in a landfill unless the owner or operator operates the landfill in accord with a management plan for these wastes that is approved by the Department pursuant to the standards set out in this paragraph, and in accord with all other applicable requirements of this part. The factors to be considered are:

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

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

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

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

(b) The Department shall impose additional design, operating, and monitoring requirements for landfills managing hazardous wastes FO20, FO21, FO22, FO23, FO26, and FO27 if necessary to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.317.

66264.318 Special Requirements for Nonliquid Waste.

(a)(1) Effective October 12, 1991, all nonliquid hazardous waste, bulk or containerized, must contain less than 50 percent moisture by weight prior to disposal in a hazardous waste landfill.

(a)(2) The requirements in (a)(1) must be met by treatment as defined in Health and Safety Code Section 25179.3(j).

The moisture content shall be determined by pulverizing the entire sample coarsely on a clean surface by hand, using rubber gloves. Twenty-five to 50 grams shall be placed in a prepared evaporating dish and weighed. The sample shall then be placed in an oven at 103 to 105 degrees centigrade for 1 hour. The dish shall be cooled in a desiccator to 20 degrees centigrade for 1 hour and then reweighed. The cycle of drying, cooling, and weighing shall be repeated until a constant weight is obtained or until the weight loss is less than 4 percent of the previous weight.

(b) The calculation in subsection (a) shall be in accordance with the following formula:

Percent Moisture = [(A-B)/(A-C)] X 100

Where:

A = Weight of evaporating dish and original sample, grams

B = Weight of evaporating dish and oven dried sample, grams

C = Weight of evaporating dish, grams.

(c) Lab Packs as defined in Section 66264.316 are exempt from Section 66264.318(a).

NOTE: Authority cited: Section 208, 25179.5, Health and Safety Code.
Reference: Sections 25159, 25159.5, 25179.5(b) and 25179.9 Health and Safety Code.

66264.319-339 [Reserved]

Article 15. Incinerators

66264.340. Applicability.

(a) The regulations in this article apply to owners or operators of facilities that incinerate hazardous waste, except as 66264.1 provides otherwise. The following facility owners or operators are considered to incinerate hazardous waste:

(1) Owners or operators of hazardous waste incinerators (as defined in Section 66260.10; and

(2) Owners or operators who burn hazardous waste in boilers or in industrial furnaces.

(b) After consideration of the waste analysis included with Part B of the permit application, the Department, in establishing the permit conditions, shall exempt the applicant from all requirements of this article except Sections 66264.341 (Waste analysis) and 66264.351 (Closure),

(1) If the Department finds that the waste to be burned is:

(A) Listed as a hazardous waste in Article 4 of Chapter 11 of this division solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

(B) Listed as a hazardous waste in Article 4 of Chapter 11 of this division solely because it is reactive (Hazard Code R) for characteristics other than those listed in Section 66261.33 (a) (4) and (a)(5), and will not be burned when other hazardous wastes are present in the combustion zone; or

(C) 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 Article 3 of Chapter 11 of this division; or

(D) A hazardous waste solely because it possesses any of the reactivity characteristics described by Section 66261.23 (a)(1), (a)(2), (a)(3), (a)(6), (a)(7), and (a)(8), 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 Appendix VIII of Chapter 11 of this division, which would reasonably be expected to be in the waste.

(c) If the waste to be burned is one which is described by subsections (b)(1) (A), (b)(1)(B), (b)(1)(C), or (b)(1)(D) of this section and contains insignificant concentrations of the hazardous constituents listed in Appendix VIII to Chapter 11 of this division, then the Department shall, in establishing permit conditions, exempt the applicant from all requirements of this article, except Sections 66264.341 (Waste analysis) and 66264.351 (Closure), after consideration of the waste analysis included with Part B of the

permit application, unless the Department 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 Section 66270.62 (Short term and incinerator permits).

NOTE: Authority cited: Sections 208 and 25159, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.340.

66264.341. Waste Analysis.

(a) As a portion of the trial burn plan required by Section 66270.62, or with Part B of the permit application, the owner or operator shall have included an analysis of the waste feed sufficient to provide all information required by Section 66270.62 (b) or 66270.19. Owners or operators of new hazardous waste incinerators shall provide the information required by Section 66270.62 (c) or Section 66270.19 to the greatest extent possible.

(b) Throughout normal operation, the owner or operator shall conduct sufficient waste analysis to verify that waste feed to the incinerator is within the physical and chemical composition limits specified in that owner or operator's permit (under Section 66264.345 (b)).

NOTE: Authority cited: Sections 208 and 25159, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.341.

66264.342. Principal Organic Hazardous Constituents (POHCs).

(a) Principal Organic Hazardous Constituents (POHCs) in the waste feed shall be treated to the extent required by the performance standard of Section 66264.343.

(b) (1) One or more POHCs will be specified in the facility's permit, from among those consituents listed in Appendix VIII and Appendix X to Chapter 11 of this division, for each waste feed to be burned. This specification will be based on the degree of difficulty of incineration of the organic constituents in the waste and on their concentration or mass in the waste feed, considering the results of waste analyses and trial burns or alternative data submitted with Part B of the facility's permit application. Organic constituents which represent the greatest degree of difficulty of incineration will be those most likely to be designated as POHCs. Constituents are more likely to be designated as POHCs if they are present in large quantities or concentrations in the waste.

(2) Trial POHCs will be designated for performance of trial burns in accordance with the procedure specified in Section 66270.62 for obtaining trial burn permits.

NOTE: Authority cited: Sections 208 and 25159, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.341.

66264.343. Performance Standards.

An incinerator burning hazardous waste shall be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under Section 66264.345, it will meet the following performance standards:

(a) (1) Except as provided in subsection (a) (2) of this section, an incinerator burning hazardous waste shall achieve a destruction and removal efficiency (DRE) of 99.99% for each principal organic hazardous constituent (POHC) designated (under Section 66264.342) 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.

(2) An incinerator burning hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27 shall achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal organic hazardous constituent (POHC) designated under Section 66264.342) in its permit. This performance shall be demonstrated on POHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each POHC from the equation in Section 66264.343 (a) (1). In addition, the owner or operator of the incinerator shall notify the Department of that owner or operator's intent to incinerate hazardous wastes FO20, FO21, FO22, FO23, FO26, or FO27.

(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) shall 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 shall not emit particulate matter in excess of 180 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) when corrected for the amount of oxygen in the stack gas according to the formula:

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

Where Pc is the corrected concentration of particulate matter, Pm is the measured concentration of particulate matter, and Y is the measured concentration of oxygen in the stack gas, using the Orsat method for oxygen analysis of dry flue gas, presented in Part 60, Appendix A (Method 3), of 40 CFR. This correction procedure is to be used by all hazardous waste incinerators except those operating under conditions of oxygen enrichment. For these facilities, the Department 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 Section 66264.345) 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 Section 66270.41.

NOTE: Authority cited: Sections 208 and 25159.5, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.343.

66264.344. Hazardous Waste Incinerator Permits.

(a) The owner or operator of a hazardous waste incinerator may burn only wastes specified in the owner or operator's permit and only under operating conditions specified for those wastes under Section 66264.345, except:

(1) In approved trial burns under Section 66270.62; or

(2) Under exemptions created by Section 66264.340.

(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 Section 66270.19.

(c) The permit for a new hazardous waste incinerator shall establish appropriate conditions for each of the applicable requirements of this article, including but not limited to allowable waste feeds and operating conditions necessary to meet the requirements of Section 66264.345, 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 subsection (c) (2) of this section,

not to exceed a duration of 720 hours operating time for treatment of hazardous waste, the operating requirements shall be those most likely to ensure compliance with the performance standards of Section 66264.343, based on the Department's engineering judgment. The Department may extend the duration of this period once for up to 720 additional hours when good cause for the extension is demonstrated by the applicant.

(2) For the duration of the trial burn, the operating requirements shall be sufficient to demonstrate compliance with the performance standards of Section 66264.343 and shall 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 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 Department, the operating requirements shall be those most likely to ensure compliance with the performance standards of Section 66264.343, based on the Department's engineering judgement.

(4) For the remaining duration of the permit, the operating requirements shall be those demonstrated, in a trial burn or by alternative data specified in Section 66270.19 (c), as sufficient to ensure compliance with the performance standards of Section 66264.343.

NOTE: Authority cited: Sections 208 and 25159, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.344.

66264.345 Operating Requirements.

(a) An incinerator shall be operated in accordance with operating requirements specified in the permit. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data as specified in Section 66264.344 (b) and included with Part B of a facility's permit application) to be sufficient to comply with the performance standards of Section 66264.343.

(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 Section 66264.343) 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 other operating requirements as are necessary to ensure that the performance standards of Section 66264.343 are met.

(c) During start-up and shut-down of an incinerator, hazardous waste (except wastes exempted in accordance with Section 66264.340) shall not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the permit.

(d) Fugitive emissions from the combustion zone shall 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 alternate means of control demonstrated (with Part B of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.

(e) An incinerator shall be operated with a functioning system to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under subsection (a) of this section.

(f) An incinerator shall cease operation when changes in waste feed, incinerator design, or operating conditions exceed limits designated in its permit.

NOTE: Authority cited: Sections 208 and 25159, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.345.

66264.346 [Reserved]

66264.347 Monitoring and Inspections.

(a) The owner or operator shall 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 shall be monitored on a continuous basis.

(2) CO shall 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 Department, sampling and analysis of the waste and exhaust emissions shall be conducted to verify that the operating requirements established in the permit achieve the performance standards of Section 66264.343.

(b) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) shall 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 shall be tested at least weekly to verify operability, unless the applicant demonstrates to the Department that weekly inspections will unduly restrict or upset operations and that less frequent inspection will be adequate. At a minimum, operational testing shall be conducted at least monthly.

(d) This monitoring and inspection data shall be recorded and the records shall be placed in the operating log required by Section 66264.73.

NOTE: Authority cited: Sections 208 and 25159, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.347.

66264.348 [Reserved]

66264.349 [Reserved]

66264.351 Closure.

At closure the owner or operator shall remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site.

At closure, as throughout the operating period, unless the owner or operator can demonstrate, in accordance with Section 66261.3 (d), that the residue removed from the incinerator is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and shall manage it in accordance with applicable requirements of this division.

NOTE: Authority cited: Sections 208 and 25159, Health and Safety Code.
Reference cited: Sections 25159.5 and 25200, Health and Safety Code, and 40 CFR Section 264.351.

Article 16. Miscellaneous Units

66264.600. Applicability.

The requirements in this article apply to owners and operators of facilities that transfer, treat, store, or dispose of hazardous waste in miscellaneous units, except as Section 66264.1 provides otherwise.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.600.

66264.601. Environmental Performance Standards.

A miscellaneous unit shall be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Permits for miscellaneous units shall contain such terms and provisions as necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous waste constituents from the unit. Permit terms and provisions shall include those requirements of Articles 9 through 15 of this chapter, Chapter 20, 40 CFR Part 146, and Article 5.5 of Chapter 6.5 of Division 20 of the Health and Safety Code that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:

(a) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents, hazardous constituents, or reaction products, in the ground water or subsurface environment, considering:

(1) The volume and physical and chemical characteristics of the waste in the unit, including its potential for migration through soil, liners, or other containing structures;

(2) The hydrologic and geologic characteristics of the unit and the surrounding area;

(3) The existing quality of ground water and soil-pore liquid and gas, including other sources of pollution and contamination and their cumulative impact on the ground water and the normally unsaturated zone;

(4) The quantity and direction of groundwater flow;

(5) The proximity to and withdrawal rate of current and potential ground/water users;

(6) The patterns of land use in the region;

(7) The potential for deposition or migration of waste constituents, hazardous constituents, or reaction products, into subsurface physical structures, and into the root zone of food-chain crops and other vegetation;

(8) The potential for health risks caused by human exposure to constituents of concern; and

(9) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to constituents of concern;

(b) Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents, hazardous constituents, or reaction products, in surface water, or wetlands or on the soil surface considering:

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

(2) The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;

(3) The hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit;

(4) The patterns of precipitation in the region;

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

(6) The proximity of the unit to surface waters;

(7) The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;

(8) The existing quality of surface waters and surface soils, including other sources of pollution and contamination and their cumulative impact on surface waters and surface soils;

(9) The patterns of land use in the region;

(10) The potential for health risks caused by human exposure to constituents of concern; and

(11) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to constituents of concern.

(c) Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents, hazardous constituents, or reaction products, in the air, considering:

(1) The volume and physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols, and particulates;

(2) The effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air;

(3) The operating characteristics of the unit;

(4) The atmospheric, meteorologic, and topographical characteristics of the unit and the surrounding area;

(5) The existing quality of the air, including other sources of pollution and contamination and their cumulative impact on the air;

(6) The potential for health risks caused by human exposure to constituents of concern; and

(7) The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to constituents of concern.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.601.

66264.602. Monitoring, Analysis, Inspection, Response, Reporting, and Corrective Action.

Monitoring, testing, analytical data, inspections, response, and reporting procedures and frequency shall ensure compliance with Sections 66264.15, 66264.33, 66264.75, 66264.76, 66264.77, 66264.601 and 66264.801 as well as meet any additional requirements needed to protect human health and the environment as specified in the permit.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.602.

66264.603. Post-Closure Care.

A miscellaneous unit that is a disposal unit shall be maintained in a manner that complies with Section 66264.601 during the post-closure care period. In addition, if a transfer, treatment, or storage unit has contaminated soils or ground water that cannot be completely removed or decontaminated during closure, then that unit shall also meet the requirements of Section 66264.601 during post-closure care. The post-closure plan under Section 66264.118 shall specify the procedures that will be used to satisfy this requirement.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.603.

Article 17. Environmental Monitoring and Response Programs for Air, Soil, and Soil-pore Gas for Permitted Facilities

66264.700. Applicability to Permitted Facilities.

(a) The regulations in this article apply to owners and operators of permitted facilities that treat, store, recycle or dispose of hazardous waste. The owner or operator shall satisfy the requirements of this article for all wastes (or constituents thereof) contained in any regulated unit that receives hazardous waste after February 2, 1985. Any waste or waste constituent migrating beyond the regulated unit, as determined by monitoring at any monitoring point for air or soil-pore gas established in accordance with Section 66264.705, is assumed to originate from a regulated unit unless the owner or operator demonstrates to the satisfaction of the Department that such waste or waste constituent originated from another source.

(b) The owner or operator is not subject to regulation under this article if the Department finds, pursuant to Section 66264.280(d), that the treatment zone of a land treatment unit does not contain levels of hazardous constituents that are above background levels of those constitutents by an amount that is statistically significant, and if an unsaturated zone monitoring program meeting the requirements of Section 66264.278 has not shown a statistically significant increase in hazardous constitutents below the treatment zone during the active life of the unit. An exemption under this subsection can only relieve an owner or operator of responsibility to

meet the requirements of this article during the post-closure care period.

(c) The owner or operator is not subject to regulation under this article if the owner or operator demonstrates to the satisfaction of the Department that hazardous waste will not migrate from a regulated unit during the active life of the unit (including the closure period) and the post-closure care period specified under Section 66264.117. The demonstration that liquid will not migrate shall be certified by an independent certified engineering geologist or civil engineer registered in California. The demonstration that gas or airborne solids will not migrate shall be certified by a scientist, or engineer registered in California, qualified to make such a demonstration. In order to provide an adequate margin of safety in the prediction of potential migration of liquid, the owner or operator shall base any predictions made under this subsection on assumptions that maximize the rate of liquid migration.

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

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

(2) Apply during the post closure care period under Section 66264.117 of Article 7 of this chapter and during any

compliance period under Section 662[redacted]96 of Article 6 of this chapter.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.701. Required Programs.

(a) Owners and operators subject to this article shall conduct a monitoring and response program as follows:

(1) Whenever there is a statistically significant increase under section 66264.707(b) for any hazardous constituents under Section 66264.703 from a regulated unit at any monitoring point under Section 66264.705, or at another location at which environmental monitoring is undertaken pursuant to state requirements, the owner or operator shall institute a compliance monitoring program under Section 66264.708.

(2) Whenever the environmental protection standard under Section 66264.702 is exceeded, or when a concentration specified for soil-pore gas or open-air downwind from the hazardous waste facility, is exceeded, the owner or operator shall institute a corrective action program under Section 66264.708.

(3) In all other cases, the owner or operator shall institute a detection monitoring program under Section 66264.706.

(b) The Department will specify in the facility permit the specific elements of the monitoring and response program. The Department shall include one or more of the programs identified in subsection (a) of this section in the facility permit as may be necessary to protect human health or 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 Department will consider the potential adverse effects on human health or the environment that might occur before final administrative action could be taken on a permit modification application to incorporate such a program.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.702. Environmental Protection Standard.

(a) The owner or operator shall comply with conditions specified in the facility permit that are designed to ensure that hazardous constituents, under Section 66264.703 entering soil or air from a regulated unit, do not exceed the concentration limits under Section 66264.704 cited by the Department as maximum acceptable concentrations in soil, soil-pore gas, air, or on the land surface.

(b) The owner or operator shall not cause the concentration of a hazardous constituent in soil, soil-pore gas or air outside the unit to exceed a concentration limit under Section 66264.704 specified in the facility permit as maximum acceptable concentrations in soil, soil-pore gas, air, or on the land surface.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.703. Hazardous Constituents.

(a) The Department will specify in the facility permit the hazardous constituents to which the environmental protection standard of Section 66264.702 applies. Constituents specified in the permit will be limited to constituents reasonably expected to be in or derived from waste contained in a regulated unit.

(b) The Department shall not specify in the facility permit constituents the Department considers not capable of posing a substantial present or potential hazard to human health or the environment and that are not useful as an indicator of migration of hazardous waste. In deciding which constituents to cite in the facility permit, the Department will consider the following:

(1) Potential effects on human health or the environment that can result from migration of waste constituents from a regulated unit considering:

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

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

(C) The current and estimated future uses of the area;

(D) Any existing contamination or pollution, including other sources and their cumulative impact;

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

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

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

(2) Potential adverse effects on surface and ground water quality; and

(3) Capability of the substance to act as an indicator of the possible presence of a hazardous constituent of hazardous waste.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.704. Concentration Limits.

(a) The facility permit shall specify concentration limits for soil, soil-pore gas, and open-air downwind from the regulated unit, for hazardous constituents established under Section 66264.703.

(b) The concentration limit for a hazardous constituent in soil outside the regulated unit shall not exceed the background concentration of that constituent in the soil unless an alternate concentration limit that is higher than background concentration for soil is established by the Department under subsection (e) of this section.

(c) The concentration limit for a hazardous constituent in open-air immediately downwind from the regulated unit:

(1) Shall not exceed an ambient air quality standard established by the California Air Resources Board; and

(2) Shall not exceed a concentration limit for a hazardous constituent established by the Department to protect human health or the environment.

(d) The concentration limit for a hazardous constituent in soil-pore gas outside the regulated unit shall not exceed the background concentration in soil-pore gas unless a concentration limit greater than background is established for soil-pore gas by the Department under subsection (e) of this section.

(e) The Department shall establish an alternate concentration limit for a hazardous constituent if it is found 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 Department will consider any or all of the factors listed under Section 66264.703(b).

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.705. Monitoring Points.

The Department will specify in the facility permit the monitoring points at which monitoring must be conducted by the owner or operator and at which the environmental protection standard of Section 66264.702 applies. Monitoring points shall be suitable for sampling any substance that may have migrated from the regulated unit, and shall be located close enough to the regulated unit to provide an early indication of contaminant migration.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.706. Detection Monitoring Program.

An owner or operator required to establish a detection monitoring program under this article shall, at a minimum, discharge the responsibilities specified in subsections (a) through (f) of this section concerning monitoring of air and soil-pore gas.

(a) The owner or operator shall assure that monitoring and corrective action measures necessary to achieve compliance with the environmental protection standard under Section 66264.702 are taken as specified in the permit or in an order issued by the Department.

(b) The owner or operator of a regulated unit that contains hazardous waste or discarded hazardous material that contains a volatile toxic substance or a hazardous material that can become airborne, or that can decompose or react to form a volatile toxic substance or toxic gas, shall follow methods prescribed by the Department to provide for representative sampling and analysis of air upwind and at the disposal area, and of soil-pore gas at monitoring points under Section 66264.705, established by the owner or operator to the satisfaction of the Department. Vapor and gas monitoring wells shall be covered with collecton chambers approved by the Department. The owner or operator shall provide, inside the collection chambers, probes or equivalent methodologies that actively sense the concentration of substances specified by the Department. If specified by the Department, the owner or operator shall provide instrumentation that provides continuous recording of concentrations of substances in open air and in the atmosphere of vapor wells.

(c) Samples will be analyzed for those substances specified in the permit. Unless the Department specifies in the permit parameters and constituents for which samples described in subsection (b) of this section shall be analyzed, the owner or operator shall analyze the samples to determine the concentration of all constituents that cause waste at the regulated unit to be hazardous waste. The Department will specify for the regulated unit the location and frequency of monitoring and the type of statistical analysis that will be used. The owner or operator shall submit a report to the Department that indicates the results of the analysis and the concentrations of constituents in the air and soil-pore gas sampled. The report shall be submitted to the Department within 30 days of the date analyses are completed.

(d) If the owner or operator determines that there is an increase of hazardous constituents at any monitoring point under Section 66264.705, the owner or operator shall:

(1) Notify the Department of this finding in writing within seven days of the date such determination is made. The notification shall indicate what constituents have shown statistically significant increases.

(2) Within 90 days of the determination, submit to the Department an application for a permit modification to modify the facility or operating practices at the facility.

(e) If the owner or operator determines that there is an increase of hazardous constituents at any monitoring point under Section 66264.705, the owner or operator may demonstrate that a source other than the regulated unit 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 subsection in addition to, or in lieu of, submitting a permit modification application under subsection (d)(2) of this section, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in subsection (d)(2) of this section unless the demonstration made under this subsection shows to the satisfaction of the Department that a source other than the regulated unit caused the increase or that the increase resulted from an error in sampling, analysis or evaluation. In making a demonstration under this subsection, the owner or operator shall:

(1) Notify the Department in writing within seven days of determining an increase at any monitoring point that the owner or operator intends to make a determination under this subsection;

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

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

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

(f) If the owner or operator determines that the detection monitoring program under this article does not satisfy the requirements of this section, the owner or operator shall, within 90 days of determining the increase, submit an application for a permit modification to make any appropriate changes to the program.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.707. Compliance Monitoring Program.

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

(a) The owner or operator shall perform monitoring the Department specifies to determine whether regulated units are in compliance with the environmental protection standard under Section 66264.702, or to determine the vertical and horizontal extent to which a constituent of hazardous waste has migrated from a regulated unit. The Department will specify the environmental protection standard in the facility permit, including:

(1) A list of the hazardous constituents identified under Section 66264.703;

(2) Concentration limits under Section 66264.704 for each of those hazardous constituents; and

(3) The monitoring points under Section 66264.705.

(b) If stipulated by the Department, the owner or operator shall determine the concentration of hazardous constituents in the unsaturated zone or in the air. The owner or operator shall express the concentration at each sampling station in a form necessary for the determination of increases. The owner or operator shall submit

data obtained from monitoring to the Department within 30 days after it is obtained.

(c) If the owner or operator determines that the environmental protection standard is being exceeded at any monitoring point established under Section 66264.705 or any other type and location of sampling station, the owner or operator shall:

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

(2) Submit to the Department an application for a permit modification to establish a corrective action program meeting the requirements of Section 66264.708 within 180 days of the determination, or within 90 days if an engineering feasibility study has been previously submitted to the Department. The application shall, at a minimum, include the following information:

(A) A detailed description of corrective actions that will achieve compliance with the environmental protection standard specified in the permit under subsection (a) of this section.

(B) A plan for an environmental monitoring program that will demonstrate the effectiveness of the corrective action to the satisfaction of the Department. Such a monitoring program may be based on a compliance monitoring program developed to meet the requirements of this section.

(d) If the owner or operator determines that the environmental protection standard is being exceeded at any monitoring point established under Section 66264.705, the owner or operator 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 subsection in addition to, or in lieu of, submitting a permit modification application under subsection (c)(2) of this section, the owner or operator is not relieved of the requirement to submit a permit modification application within the time specified in subsection (c)(2) of this section unless the demonstration made under this subsection shows to the satisfaction of the Department that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis or evaluation. In making a demonstration under this subsection, the owner or operator shall:

(1) Notify the Department in writing within seven days of the determination that the owner or operator intends to make a demonstration under this subsection.

(2) Within 90 days of the determination, submit a report to the Department 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 of the determination, submit to the Department an application for a permit modification to make any appropriate changes to the compliance monitoring program at the facility.

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

(e) If the owner or operator determines that the compliance monitoring program does not satisfy the requirements of this section, the owner or operator shall, within 90 days of the determination, submit an application for a permit modification to make any appropriate changes to the program.

(f) The owner or operator shall assure the Department that monitoring and corrective action measures are taken as necessary to achieve compliance with the environmental protection standard under Section 66264.702 as specified in the permit or in an order issued by the Department.

(g) When the Department has determined that a constituent of hazardous waste has migrated from a regulated unit, the Department shall require the owner or operator to obtain samples of soil from specified depths and locations, and to chemically analyze such samples as necessary to determine the distances and depths through which constituents of hazardous waste have migrated from the regulated unit.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.

Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

66264.708. Corrective Action Program.

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

(a) The owner or operator shall take corrective action to ensure that regulated units are in compliance with the environmental protection standard under Section 66264.702. The Department will specify the environmental protection standard in the facility permit, including:

(1) A list of the hazardous constituents identified under Section 66264.703;

(2) Concentration limits under Section 66264.704 for each of those hazardous constituents; and

(3) The monitoring points under Section 66264.705.

(b) The owner or operator shall implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the monitoring points established under Section 66264.705 by removing the hazardous waste constituents or treating them in place or providing other effective measures. The permit will specify the specific measures that will be taken.

(c) The owner or operator shall begin corrective action within a reasonable time period after the environmental protection standard is exceeded. The Department will specify that time period in the facility permit. If a facility permit includes a corrective action program under this section in addition to a compliance monitoring program under Section 66264.707, the permit will specify when the corrective action will begin, and such a requirement will operate in lieu of Section 66264.707(c)(2).

(d) In conjunction with a corrective action program established under this section, the owner or operator shall establish and implement an environmental monitoring program to demonstrate the effectiveness of the corrective action program. Such a monitoring program may be based on the requirements for a compliance monitoring program under Section 66264.707 and shall be as effective as that program in determining compliance with the environmental protection standard under Section 66264.702 and in determining the success of a corrective action program under subsection (e) of this section.

(e) In addition to the other requirements of this section, the owner or operator shall conduct a corrective action program to remove or treat in place any hazardous constituents under Section 66264.703 of this article that have caused, or could cause, the environmental protection standard to be exceeded, or take other action specified by the Department to reduce the concentration of hazardous constituents under Section 66264.703 to levels below their respective concentration limits specified pursuant to this chapter, and to prevent subsequent exceedance of those levels by hazardous waste

remaining at the regulated unit. The permit will specify the measures to be taken.

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

(2) Corrective action measures under this subsection may be terminated once the concentration of hazardous constituents under Section 66264.703 is reduced to levels below their respective concentration limits under Section 66264.704, and it is not likely that hazardous waste remaining at the regulated unit will cause a concentration limit under Section 66264.704 to be exceeded.

(f) The owner or operator shall continue corrective action measures as necessary to ensure that the environmental protection standard is not exceeded. If the owner or operator is conducting corrective action under this section at the end of the post-closure care period or at the end of any compliance period established under Section 66264.96 of Article 6, the owner or operator shall continue that corrective action for as long as necessary to achieve compliance with the environmental protection standard under Section 66264.702. The owner or operator may terminate corrective action measures under this section taken beyond the end of the post-closure care period or any compliance period established under Section 66264.96 of Article 6 if the owner or operator demonstrates, to the satisfaction of the Department, based on data from the environmental monitoring program under subsection (d) of this section, that the environmental

protection standard of Section 66264.702 has not been exceeded during the last three consecutive years.

(g) The owner or operator shall report in writing to the Department on the effectiveness of the corrective action program established under this section. The owner or operator shall submit these reports semiannually.

(h) If the owner or operator determines that the corrective action program does not satisfy the requirements of this section, the owner or operator shall, within 90 days of making such determination, submit an application for a permit modification to make any appropriate changes to the program.

NOTE: Authority cited: Section 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150 (a), 25159, 25159.5 and 25245, Health and Safety Code.

Article 19. Corrective Action for Solid Waste Management Units

66264.800. Applicability

(a) The regulations in this article apply to owners or operators of permitted hazardous waste facilities. The owner or operator must satisfy the requirements of this article for all wastes (or constituents thereof) contained in solid waste management units at the facility, regardless of the time at which waste was placed in such units. All solid waste management units shall comply with the requirements of this article.

(b) The regulations under this article apply during the active life of the facility (including the closure period). After closure of the facility, the regulations in this article:

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

(2) Apply during the post-closure care period under 66264.117 of Article 7 of this chapter and during any compliance period under Section 66264.96 of Article 6 of this chapter.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code.

66264.801. Corrective Action.

Corrective action shall be addressed in the permit as required by Section 25200.10, Health and Safety Code.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159 and 25159.5, Health and Safety Code; 40 CFR Section 264.101.

Appendix I-Recordkeeping Instructions

The recordkeeping provisions of Section 66264.73 specify that an owner or operator shall keep a written operating record at the facility. This appendix provides additional instructions for keeping portions of the operating record. See Section 66264.73(b) for additional recordkeeping requirements.

The following information shall 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, transferred, treated, stored, or disposed of at the facility which include the following:

(1) A description by its common name and any applicable EPA Hazardous Waste Number or California Hazardous Waste Number from Chapter 11 of this division which apply to the waste. The waste description also shall include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Chapter 11, Article 4 or Appendix XII of this division, the description also shall include the process that produced it (for example, solid filter cake from production of ---, EPA Hazardous Waste Number W051).

Each hazardous waste listed in Chapter 11, Article 4, of this division, and each hazardous waste characteristic defined in Chapter 11, Article 3, of this division, has a four-digit EPA

Hazardous Waste Number and/or a three-digit California Hazardous Waste Number assigned to it. This number shall 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 shall include all applicable EPA and California Hazardous Waste Numbers.

(2) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1;

TABLE 1

Unit of measure	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.

(3) The method(s) (by handling code(s) as specified in Table 2) and date(s) of treatment, storage, or disposal.

TABLE 2-Handling Codes for Treatment, Storage, and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

1. Storage

S01 Container (barrel, drum, etc.)
S02 Tank
S03 Waste pile
S04 Surface impoundment
S05 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 Detoxification
T30 Ion exchange
T31 Neutralization
T32 Ozonation
T33 Photolysis
T34 Other (specify)

(c) Physical Treatment

(1) Separation of components

T35 Centrifugation
T36 Clarification
T37 Coagulation
T38 Decanting
T39 Encapsulation
T40 Filtration
T41 Flocculation
T42 Flotation
T43 Foaming
T44 Sedimentation
T45 Thickening
T46 Ultrafiltration
T47 Other (specify)

(2) Removal of Specific Components

T48 Absorption-molecular sieve
T49 Activated carbon
T50 Blending
T51 Catalysis
T52 Crystallization
T53 Dialysis
T54 Distillation
T55 Electrodialysis
T56 Electrolysis
T57 Evaporation
T58 High gradient magnetic separation
T59 Leaching
T60 Liquid ion exchange
T61 Liquid-liquid extraction
T62 Reverse osmosis
T63 Solvent recovery
T64 Stripping
T65 Sand filter
T66 Other (specify)

(d) Biological Treatment

T67 Activated sludge
T68 Aerobic lagoon
T69 Aerobic tank
T70 Anaerobic 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

D82 Ocean disposal
D83 Surface impoundment (to be closed as a landfill)
D85 Other (specify)

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25159 and 25159.5, Health and Safety Code; 40 CFR Part 264, Appendix I.

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 transfer, 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 shall, as the regulations require, adequately analyze all wastes so as to avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A

Acetylene sludge
Alkaline caustic liquids
Alkaline cleaner
Alkaline corrosive liquids
Alkaline corrosive battery fluid
Caustic wastewater
Lime sludge and other corrosive alkalies
Lime wastewater
Lime and water
Spent caustic

Group 1-B

Acid sludge
Acid and water
Battery acid
Chemical cleaners
Electrolyte, acid
Etching acid liquid or solvent
Pickling liquor and other corrosive acids
Spent acid
Spent mixed acid
Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

Group 2-A

Aluminum
Beryllium
Calcium
Lithium
Magnesium
Potassium
Sodium
Zinc powder
Other reactive metals and metal hydrides

Group 2-B

Any waste in Group 1-A or

1-B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A

Alcohols

Water

Group 3-B

Any concentrated waste in Groups 1-A or 1-B
Calcium
Lithium
Metal hydrides
Potassium
SO2Cl2, SOCl2, PCl3, CH3SiCl3
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.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 208, 25159 and 25159.5, Health and Safety Code, 40 CFR Part 264, Appendix V.

Appendix IX--Ground-Water Monitoring List 1/

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Acenaphthene.....	83-32-9	Acenaphthylene, 1,2-dihydro-.....	8100	200
			8270	10
Acenaphthylene...	208-96-8	Acenaphthylene.....	8100	200
			8270	10
Acetone.....	67-64-1	2-Propanone.....	8240	100
Acetophenone.....	98-86-2	Ethanone, 1-phenyl-...	8270	10
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile.....	8015	100
2-Acetylamino-fluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-.....	8270	10
Acrolein.....	107-02-8	2-Propenal.....	8030	5
			8240	5
Acrylonitrile....	107-13-1	2-Propenenitrile.....	8030	5
			8240	5
Aldrin.....	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1a,4a,4aB,5a,8a,8aB)-.....	8080	0.05
			8270	10
Allyl chloride...	107-05-1	1-Propene, 3-chloro-	8010	5
			8240	100

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
4-Aminobiphenyl..	92-67-1	[1,1'-Biphenyl]-4-amine.....	8270	10
Aniline.....	62-53-3	Benzenamine.....	8270	10
Anthracene.....	120-12-7	Anthracene.....	8100	200
			8270	10
Antimony.....	(Total)	Antimony.....	6010	300
			7040	2,000
			7041	30
Aramite.....	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl) phenoxy]-1-methyl-ethyl ester.....	8270	10
Arsenic.....	(Total)	Arsenic.....	6010	500
			7060	10
			7061	20
Barium.....	(Total)	Barium.....	6010	20
			7080	1,000
Benzene.....	71-43-2	Benzene.....	8020	2
			8240	5
Benzo[a] anthracene; Benzanthracene	56-55-3	Benz[a]anthracene.....	8100	200
			8270	10
Benzo[b] fluoranthene..	205-99-2	Benz[e]acephenan-	8100	200

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		thrylene.....	8270	10
Benzo[k]fluoran-				
thene.....	207-08-9	Benzo[k]fluoranthene	8100	200
			8270	10
Benzo[ghi]				
perylene.....	191-24-2	Benzo[ghi]perylene....	8100	200
			8270	10
Benzo[a]pyrene..	50-32-8	Benzo[a]pyrene.....	8100	200
			8270	10
Benzyl alcohol..	100-51-6	Benzenemethanol.....	8270	20
Beryllium.....	(Total)	Beryllium.....	6010	3Ø3
			7090	50
			7091	2
alpha-BHC.....	319-84-6	Cyclohexane, 1,2,3,4,		
		5,6-hexachloro-,(1a,		
		2a,3B,4a,5B,6B)-....	8080	0.05
			8250	10
beta-BHC.....	319-85-7	Cyclohexane, 1,2,3,4,		
		5,6,-hexachloro-,		
		(a,2B,3a,4B,5a,6B)-	8080	0.05
			8250	40
delta-BHC.....	319-86-8	Cyclohexane, 1,2,3,4,		
		5,6-hexachloro-,(1a,		
		2a,3a,4B,5a,6B)-....	8080	0.1
			8250	30
gamma-BHC;				

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Lindane.....	58-89-9	Cyclohexane, 1,2,3,4, 5,6,-hexachloro-, (1a,2a,3B,4a,5a,6B)-	8080	0.05
			8250	10
Bis(2-chloro-ethoxy)methane	111-91-1	Ethane, 1,1'-[methyl-enebis(oxy)]bis [2-chloro-.....	8270	10
Bis(2-chloro-ethyl)ether...	111-44-4	Ethane, 1,1'-oxybis [2-chloro-.....	8270	10
Bis(2-chloro-1-methylethyl) ether; 2,2'-Di-chlorodiiso-propyl ether..	108-60-1	Propane, 2,2'-oxybis [1-chloro-.....	8010	100
			8270	10
Bis(2-ethylhexyl) phthalate.....	117-81-7	1,2-Benzenedicar-boxylic acid, bis (2-ethylhexyl)ester	8060	20
			8270	10
Bromodichlorome-thane.....	75-27-4	Methane, bromodi-chloro-.....	8010	1

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
			8240	5
Bromoform; Tribromo-methane.....	75-25-2	Methane, tribromo-....	8010	2
			8240	5
4-Bromophenyl phenyl ether...	101-55-3	Benzene, 1-bromo-4-phenoxy-.....	8270	10
Butyl benzyl phthalate; Benzyl butyl phthalate.....	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenyl-methyl ester.....	8060	5
			8270	10
Cadmium.....	(Total)	Cadmium.....	6010	40
			7130	50
			7131	1
Carbon disulfide	75-15-0	Carbon disulfide.....	8240	5
Carbon tetra-chloride	56-23-5	Methane, tetrachloro-	8010	1
			8240	5
Chlordane.....	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-.....	8080	0.1

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
			8250	10
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8270	20
Chlorobenzene..	108-90-7	Benzene, chloro-.....	8010	2
			8020	2
			8240	5
Chlorobenzilate	510-15-6	Benzeneneacetic acid, 4-chloro-a-(4-chloro-phenyl)-a-hydroxy-,ethyl ester.....	8270	10
p-Chloro-m-cresol.....	59-50-7	Phenol, 4-chloro-3-methyl-.....	8040	5
			8270	20
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-.....	8010	5
			8240	10
Chloroform.....	67-66-3	Methane, trichloro-...	8010	0.5
			8240	5
2-Chloronaphthalene.....	91-58-7	Naphthalene, 2-chloro-.....	8120	10
			8270	10
2-Chlorophenol	95-57-8	Phenol,2-chloro-.....	8040	5
			8270	10
4-Chlorophenyl phenyl ether..	7005-72-3	Benzene, 1-chloro-4-		

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		phenoxy-.....	8270	10
Chloroprene.....	126-99-8	1,3-Butadiene,2-		
		chloro-.....	8010	50
			8240	5
Chromium.....	(Total)	Chromium.....	6010	70
			7190	500
			7191	10
Chrysene.....	218-01-9	Chrysene.....	8100	200
			8270	10
Cobalt.....	(Total)	Cobalt.....	6010	70
			7200	500
			7201	10
Copper.....	(Total)	Copper.....	6010	60
			7210	200
m-Cresol.....	108-39-4	Phenol,3-methyl-.....	8270	10
o-Cresol.....	95-48-7	Phenol,2-methyl-.....	8270	10
p-Cresol.....	106-44-5	Phenol,4-methyl-.....	8270	10
Cyanide.....	57-12-5	Cyanide.....	9010	40
2,4-D;2,4-Di-				
chlorophenoxy-				
acetic acid...	94-75-7	Acetic acid, (2,4-di-		
		chlorophenoxy)-.....	8150	10
4,4'-DDD.....	72-54-8	Benzene 1,1'-(2,2-di-		
		chloroethylidene)		
		bis[4-chloro-.....	8080	0.1
			8270	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
4,4'-DDE.....	72-55-9	Benzene 1,1'-(dichloroethylidene) bis[4-chloro-.....	8080	0.05
			8270	10
4,4'-DDT.....	50-29-3	Benzene 1,1'-(2,2,2-trichloroethylidene) bis[4-chloro-.....	8080	0.1
			8270	10
Diallate.....	2303-16-4	Carbamothioic acid, bis (1-methylethyl)- , S-(2,3-dichloro-2-propenyl) ester.....	8270	10
Dibenz[a,h] anthracene....	53-70-3	Dibenz[a,h]anthracene	8100	200
			8270	10
Dibenzofuran....	132-64-9	Dibenzofuran.....	8270	10
Dibromochloro-methane; Chlorodibromo-methane.....	124-48-1	Methane, dibromo-chloro-.....	8010	1
			8240	5
1,2-Dibromo-3-chloropropane; DBCP.....	96-12-8	Propane, 1,2-dibromo-3-chloro-.....	8010	100

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
			8240	5
			8270	10
1,2-Dibromoethane; Ethylene dibromide.....	106-93-4	Ethane, 1,2-dibromo-	8010	10
			8240	5
Di-n-butyl phthalate.....	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester.....	8060	5
			8270	10
o-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-	8010	2
			8020	5
			8120	10
			8270	10
m-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro-	8010	5
			8020	5
			8120	10
			8270	10
p-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-	8010	2
			8020	5
			8120	15
			8270	10
3,3'-Dichlorobenzidine.....	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-		

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		dichloro-.....	8270	20
trans-1,4-Dichloro-2-butene.....	110-57-6	2-Butene, 1,4-dichloro-, (E)-.....	8240	5
Dichlorodifluoromethane.....	75-71-8	Methane, dichlorodifluoro-.....	8010	10
			8240	5
1,1-Dichloroethane.....	75-34-3	Ethane, 1,1-dichloro-	8010	1
			8240	5
1,2-Dichloroethane; Ethylene dichloride...	107-06-2	Ethane, 1,2-dichloro-	8010	0.5
			8240	5
1,1-Dichloroethylene; Vinylidene chloride.....	75-35-4	Ethene, 1,1-dichloro-	8010	1
			8240	5
trans-1,2-Dichloroethylene.....	156-60-5	Ethene, 1,2-dichloro-,(E)-.....	8010	1

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
			8240	5
2,4-Dichloro-				
phenol.....	120-83-2	Phenol, 2,4-dichloro-	8040	5
			8270	10
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-		
		dichloro-.....	8270	10
1,2-Dichloro				
propane.....	78-87-5	Propane, 1,2-		
		dichloro-.....	8010	0.5
			8240	5
cis-1,3-Dichloro-				
propene.....	10061-01-5	1-Propene, 1,3-		
		dichloro-, (Z)-.....	8010	20
			8240	5
trans-1,3-				
Dichloropropene	10061-02-6	1-Propene, 1,3-		
		dichloro-,(E)-.....	8010	5
			8240	5
Dieldrin.....	60-57-1	2,7:3,6-Dimethanon-		
		aphth[2,3-b]oxirene,		
		3,4,5,6,9,9,-hexa-		
		chloro-1a,2,2a,3,6,		
		6a,7,7a-octahydro-,		
		(1aa,2B,2aa,3B,6B,		
		6aa,7B,7aa)-.....	8080	0.05
			8270	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Diethyl phthalate.....	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester.....	8060	5
			8270	10
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin.....	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.....	8270	10
Dimethoate.....	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester...	8270	10
p-(Dimethylamino) azobenzene....	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	8270	10
7,12-Dimethylbenz [a]anthracene	57-97-6	Benz[a]anthracene, 7, 12-dimethyl-.....	8270	10
3,3'-Dimethylbenzidine.....	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl-.....	8270	10
alpha,alpha-Dim-				

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
ethylphenethyl-amine.....	122-09-8	Benzeneethanamine, a,a-dimethyl-.....	8270	10
2,4-Dimethyl-phenol.....	105-67-9	Phenol, 2,4-dimethyl-	8040	5
			8270	10
Dimethyl phthalate.....	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester.....	8060	5
			8270	10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-	8270	10
4,6-Dinitro-o-cresol.....	534-52-1	Phenol, 2-methyl-4,6-dinitro-.....	8040	150
			8270	50
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-	8040	150
			8270	50
2,4-Dinitroto-luene.....	121-14-2	Benzene, 1-methyl-2, 4-dinitro-.....	8090	0.2
			8270	10
2,6-Dinitroto-luene.....	606-20-2	Benzene, 2-methly-1,3-dinitro-.....	8090	0.1
			8270	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150	1
			8270	10
Di-n-octyl phthalate.....	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester.....	8060	30
			8270	10
1,4-Dioxane.....	123-91-1	1,4-Dioxane.....	8015	150
Diphenylamine...	122-39-4	Benzenamine, N-phenyl-	8270	10
Disulfoton.....	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)- S-[2-ethyl]ester.....	8140	2
			8270	10
Endosulfan I....	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a. hexahydro-,3-oxide, (3a,5aB,6a,9a,9aB)-	8080	0.1
			8250	10
Endosulfan II...	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin,		

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		6,7,8,9,10,10-hexa-		
		chloro- 1,5,5a,6,9,		
		9a-hexahydro-, 3-		
		oxide, (3a,5aa,6B,		
		9B,9aa)-.....	8080	0.05
Endosulfan				
sulfate.....	1031-07-8	6,9-Methano-2,4,3-		
		benzodioxathiepin,		
		6,7,8,9,10,10-hexa-		
		chloro- 1,5,5a,6,9,		
		9a-hexahydro-, 3,3-		
		dioxide.....	8080	0.5
			8270	10
Endrin.....	72-20-8	2,7:3,6-Dimethanon-		
		aphth[2,3-b]oxirene,		
		3,4,5,6,9,9-hexa-		
		chloro-1a,2,2a,3,6,		
		6a,7,7a-octahydro-,		
		(1aa,2B,2aB,3a,6a,		
		6aB,7B,7aa)-.....	8080-	0.1
			8250	10
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclo-		
		penta[cd]pentalene-		
		5-carboxaldehyde,2,		
		2a,3,3,4,7-hexa-		
		chlorodecahydro-,		

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		(1a,2B,2aB,4B,4aB,		
		5B,6aB,6bB,7R*)-....	8080	0.2
			8270	10
Ethylbenzene....	100-41-4	Benzene, ethyl-.....	8020	2
			8240	5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015	10
			8240	5
			8270	10
Ethyl methane-sulfonate.....	62-50-0	Methanesulfonic acid, ethyl ester.....	8270	10
Famphur.....	52-85-7	Phosphorothioic acid, O-[4-[(dimethyl-amino)sulfonyl] phenyl]-O,O-dimethyl ester.....	8270	10
Fluoranthene....	206-44-0	Fluoranthene.....	8100	200
			8270	10
Fluorene.....	86-73-7	9H-Fluorene.....	8100	200
			8270	10
Heptachlor.....	76-44-8	4,7-Methano-1H- indene, 1,4,5,6,7,8,8-hepta-chloro-3a,4,7,7a-tetrahydro-.....	8080	0.05

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
			8270	10
Heptachlor epoxide.....	1024-57-3	2,5-Methano-2H-indeno [1,2-b]oxirene, 2,3, 4,5,6,7,7-hepta- chloro-1a,1b,5,5a,6, 6a,-hexahydro-, (1aa,1bB,2a,5a,5aB, 6B,6aa).....	8080	1
			8270	10
Hexachlorobenzene	118-74-1	Benzene, hexachloro-	8120	0.5
			8270	10
Hexachlorobu- tadiene.....	87-68-3	1,3-Butadiene, 1,1,2, 3,4,4-hexachloro-...	8120	5
			8270	10
Hexachlorocyclo- pentadiene....	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexa- chloro-.....	8120	5
			8270	10
Hexachloroethane	67-72-1	Ethane, hexachloro-	8120	0.5
			8270	10
Hexachlorophene	70-30-4	Phenol, 2,2'-methyl- enebis[3,4,6-tri- chloro-.....	8270	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3, 3-hexachloro-.....	8270	10
2-Hexanone.....	591-78-6	2-Hexanone.....	8240	50
Indeno(1,2,3-cd) pyrene.....	193-39-5	Indeno[1,2,3-cd]pyrene	8100	200
			8270	10
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8015	50
Isodrin.....	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4, 10,10-hexachloro-1, 4,4a,5,8,8a hexahydro-(1a,4a,4aB,5B,8B ,8aB)-.....	8270	10
Isophorone.....	78-59-1	2-Cyclohexen-1-one, 3,5,5,-trimethyl-...	8090	60
			8270	10
Isosafrole.....	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-.....	8270	10
Kepone.....	143-50-0	1,3,4-Metheno-2H-cyclobuta- [cd]pentalen-2-one,1,1a,3,3a, 4,5,5,5a,5b,6-decachlorooctahydro-	8270	10
Lead.....	(Total)	Lead.....	6010	40
			7420	1,000
			7421	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Mercury.....	(Total)	Mercury.....	7470	2
Methacryloni-				
trile.....	126-98-7	2-Propenenitrile,2-		
		methyl-.....	8015	5
			8240	5
Methapyrilene...	91-80-5	1,2,Ethanediamine, N,N		
		-dimethyl-N'-2-pyri-		
		dinyl-N'-(2-thienyl		
		methyl)-.....	8270	10
Methoxychlor....	72-43-5	Benzene, 1,1'-(2,2,2,		
		trichloroethylidene)		
		bis[4-methoxy-.....	8080	2
			8270	10
Methyl bromide;				
Bromomøethane	74-83-9	Methane, bromo-.....	8010	20
			8240	10
Methyl chloride;				
Chloromethane	74-87-3	Methane, chloro-.....	8010	1
			8240	10
3-Methylcholan-				
threne.....	56-49-5	Benz[j]aceanthrylene,		
		1,2-dihydro-3-methyl	8270	10
Methylene				
bromide;				
Dibromomethane	74-95-3	Methane, dibromo.....	8010	15
			8240	5

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-....	8010	5
			8240	5
Methyl ethyl ketone; MEK	78-93-3	2-Butanone.....	8015	10
			8240	100
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-.....	8010	40
			8240	5
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester.....	8015	2
			8240	5
Methyl methanesulfonate.....	66-27-3	Methanesulfonic acid, methyl ester.....	8270	10
2-Methylnaphthalene.....	91-57-6	Naphthalene, 2-methyl-.....	8270	10
Methyl parathion; Parathion methyl.....	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	8140	0.5

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
			8270	10
4-Methyl-2-pentanone; Methyl isobutyl ketone.....	108-10-1	2-Pentanone, 4-methyl-	8015	5
			8240	50
Naphthalene.....	91-20-3	Naphthalene.....	8100	200
			8270	10
1,4-Naphthoquinone.....	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine.....	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine.....	8270	10
Nickel.....	(Total)	Nickel.....	6010	50
			7520	400
o-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline	100-01-6	Benzenamine, 4-nitro-	8270	50
Nitrobenzene....	98-95-3	Benzene, nitro-.....	8090	40
			8270	10
o-Nitrophenol...	88-75-5	Phenol, 2-nitro-.....	8040	5
			8270	10
p-Nitrophenol...	100-02-7	Phenol, 4-nitro.....	8040	10
			8270	50
4-Nitroquinoline 1-oxide	56-57-5	Quinoline, 4-nitro-, 1-oxide.....	8270	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
N-Nitrosodi-n-butylamine....	924-16-3	1-Butanamine, N-butyl-N-nitroso-....	8270	10
N-Nitrosodiethylamine.....	55-18-5	Ethanamine, N-ethyl-N-nitroso-.....	8270	10
N-Nitrosodimethylamine...	62-75-9	Methanamine, N-methyl-N-nitroso-.....	8270	10
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-.....	8270	10
N-Nitrosodipropylamine; Di-n-propylnitrosamine.....	621-64-7	1-Propanamine, N-nitroso-N-propyl-.....	8270	10
N-Nitrosomethylethylamine....	10595-95-6	Ethanamine, N-methyl-N-nitroso-.....	8270	10
N-Nitrosomorpholine.....	59-89-2	Morpholine, 4-nitroso-	8270	10
N-Nitrosopiperidine.....	100-75-4	Piperidine, 1-nitroso-	8270	10
N-Nitrosopyrrolidine.....	930-55-2	Pyrrolidine, 1-nitro-		

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		so-.....	8270	10
5-Nitro-o-				
toluidine.....	99-55-8	Benzenamine, 2-methyl-		
		5-nitro-.....	8270	10
Parathion.....	56-38-2	Phosphorothioic acid,		
		O,O-diethyl-O-(4-		
		nitrophenyl) ester	8270	10
Polychlorinated				
biphenyls;				
PCBs.....	See Note 7	1,1'-Biphenyl, chloro		
		derivatives.....	8080	50
			8250	100
Polychlorinated				
dibenzo-p-				
dioxins; PCDDs	See Note 8	Dibenzo[b,e][1,4]		
		dioxin, chloro		
		derivatives.....	8280	0.01
Polychlorinated				
dibenzofurans;				
PCDFs.....	See Note 9	Dibenzofuran, chloro		
		derivatives.....	8280	0.01
Pentachloro-				
benzene.....	608-93-5	Benzene, pentachloro-	8270	10
Pentachloro-				
ethane.....	76-01-7	Ethane, pentachloro...	8240	5
			8270	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Pentachloronitro-benzene.....	82-68-8	Benzene, pentachloro-nitro-.....	8270	10
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040	5
			8270	50
Phenacetin.....	62-44-2	Acetamide, N-(4-ethoxyphenyl).....	8270	10
Phenanthrene....	85-01-8	Phenanthrene.....	8100	200
			8270	10
Phenol.....	108-95-2	Phenol.....	8040	1
			8270	10
p-Phenylenedi-amine.....	106-50-3	1,4 Benzenediamine....	8270	10
Phorate.....	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester.....	8140	2
			8270	10
2-Picoline.....	109-06-8	Pyridine, 2-methyl-...	8240	5
			8270	10
Pronamide.....	23950-58-5	Benzamide, 3,5-di-chloro-N-(1,1-di-methyl-2-propynyl)-	8270	10
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile.....	8015	60
			8240	5

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Pyrene.....	129-00-0	Pyrene.....	8100	200
			8270	10
Pyridine.....	110-86-1	Pyridine.....	8240	5
			8270	10
Safrole.....	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-.....	8270	10
Selenium.....	(Total)	Selenium.....	6010	750
			7740	20
			7741	20
Silver.....	(Total)	Silver.....	6010	70
			7760	100
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichloro-phenoxy)-.....	8150	2
Styrene.....	100-42-5	Benzene, ethenyl-.....	8020	1
			8240	5
Sulfide.....	18496-25-8	Sulfide.....	9030	10,000
2,4,5-T; 2,4,5-Trichlorophen-oxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
2,3,7,8-TCDD; 2,3,7,8-Tetra-chlorodibenzo-p-dioxin.....	1746-01-6	Dibenzo[b,e][1,4] dioxin, 2,3,7,8-		

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		tetrachloro-.....	8280	0.005
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-.....	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-.....	8010	5
			8240	5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-.....	8010	0.5
			8240	5
Tetrachloroethylene; Perchloroethylene; Tetrachloroethene	127-18-4	Ethene, tetrachloro-	8010	0.5
			8240	5
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-.....	8270	10
Tetraethyl dithiopyrophosphate; Sulfotepp.....	3689-24-5	Thiodiphosphoric acid ([(HO)2/P(S)]2/O), tetraethyl ester....	8270	10

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Thallium.....	(Total)	Thallium.....	6010	400
			7840	1,000
			7841	10
Tin.....	(Total)	Tin.....	7870	8,000
Toluene.....	108-88-3	Benzene, methyl-.....	8020	2
			8240	5
o-Toluidine.....	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene.....	8001-35-2	Toxaphene.....	8080	2
			8250	10
1,2,4-Trichloro-benzene.....	120-82-1	Benzene, 1,2,4-trichloro-.....	8270	10
1,1,1-Trichloro-ethane; Methyl-chloroform....	71-55-6	Ethane, 1,1,1,-trichloro-.....	8240	5
1,1,2-Trichloro-ethane.....	79-00-5	Ethane, 1,1,2-trichloro-.....	8010	0.2
			8240	5
Trichloroethyl-ene; Trichloro-ethene.....	79-01-6	Ethene, trichloro-....	8010	1
			8240	5
Trichlorofluoro-methane.....	75-69-4	Methane, trichloro-		

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
		fluoro-.....	8010	10
			8240	5
2,4,5-Trichloro-				
phenol.....	95-95-4	Phenol, 2,4,5-tri-		
		chloro-.....	8270	10
2,4,6-Trichloro-				
phenol.....	88-06-2	Phenol, 2,4,6-tri-		
		chloro-.....	8040	5
			8270	10
1,2,3-Trichloro-				
propane.....	96-18-4	Propane, 1,2,3-tri-		
		chloro.....	8010	10
			8240	5
O,O,O-Triethyl				
phosphorothio-				
ate.....	126-68-1	Phosphorothioic acid,		
		O,O,O-triethyl		
		ester.....	8270	10
sym-Trinitro-				
benzene.....	99-35-4	Benzene, 1,3,5-tri-		
		nitro-.....	8270	10
Vanadium.....	(Total)	Vanadium.....	6010	80
			7910	2,000
			7911	40
Vinyl acetate...	108-05-4	Acetic acid, ethenyl		
		ester.....	8240	5

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/
Vinyl chloride	75-01-4	Ethene, chloro-.....	8010	2
			8240	10
Xylene (total)	1330-20-7	Benzene, dimethyl-....	8020	5
			8240	5
Zinc.....	(Total)	Zinc.....	6010	20
			7950	50

1/ The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.

2/ Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

3/ Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

4/ CAS index names are those used in the 9th Cumulative Index.

5/ Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

6/ Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be reliably determined within specified limits of precision and accuracy by the

Common name2/	CAS RN3/	Chemical abstracts service index name4/	Suggested methods5/	PQL (ug/L)6/

indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

7/ Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1016 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11 096-82-5). The PQL shown is an average value for PCB congeners.

8/ This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins. The PQL shown is an average value for PCDD congeners.

9/ This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans. The PQL shown is an average value for PCDF congeners.

NOTE: Authority cited: Sections 208, 25150 and 25159, Health and Safety Code.
Reference: Sections 25150, 25159, and 25159.5, Health and Safety Code; 40 CFR Part 264, Appendix IX.