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**Chapter 854: STANDARDS FOR HAZARDOUS WASTE FACILITIES**

SUMMARY: This ~~rule~~ Chapter specifies the standards applicable to the establishment, construction, alteration and operation of waste facilities for hazardous waste in Maine.

- 1. Legal Authority.** This ~~Chapter~~ rule is promulgated under 38 M.R.S.A. §§~~Section~~ 1301, *et seq.* through 1319-Y, which prohibits the establishment, construction, alteration or operation of a waste facility for hazardous waste without a license and authorizes the Board of Environmental Protection (Board) to adopt rules establishing standards for the licensing of these facilities.

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NOTE: Pursuant to 38 M.R.S. § 341-A, Sections (2) and (4), the term "Department" is defined to include the Board of Environmental Protection and the Commissioner of the Department of Environmental Protection (Commissioner). The term "Board" is used in this Chapter in reference to the Board or a Board action, generally related to the Board's issuance of a full hazardous waste facility license (rather than an abbreviated license which is issued by the Commissioner under 06-096 C.M.R. ch. 856, § 11(A)). The term "Department" is generally used in this Chapter in reference to the Commissioner (or the Commissioner's designee) and to the administration, oversight or monitoring of compliance with the standards of this Chapter and the terms and conditions of licenses issued by the Board.

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- 2. Preamble.** It is the purpose of the Department of Environmental Protection (Department), consistent with legislative policy, to provide necessary controls over hazardous waste facilities so as to ensure the protection of public health, safety, welfare and the environment.

The Board of ~~Environmental Protection~~ will administer this ~~Chapter~~ rule in a conservative fashion because it recognizes that many unknowns remain about the short-term and long-term impacts of hazardous waste to public health and natural ecosystems. The intent of this ~~Chapter~~ rule is to protect the public health, safety, and general welfare and the environment; the burden of proof ~~shall~~ rests with each applicant seeking a license for a waste facility for hazardous waste to affirmatively demonstrate that the intent of this ~~Chapter~~ rule will be met at all times.

- 3. Definitions.** For purposes of this ~~Chapter~~ rule, terms not defined in this section ~~shall~~ have the meaning given them in 38 M.R.S.A., §§~~Sections~~ 361-A and 1303-C, and in other chapters of the *Hazardous Waste Management Rules*, 06-096 C.M.R. chs. 850 – 858. The following terms as used in this ~~Chapter~~ rule ~~shall~~ have the following meaning unless the context indicates otherwise.

**A. Aboveground tank.** "Aboveground tank" means a device meeting the definition of "tank" which is situated in such a way that the entire surface area of the tank is completely above the plane of the adjacent surrounding surface and the entire surface area of the tank (including the tank bottom) can be visually inspected.

**B. Active Life.** "Active life" means the period from the initial receipt of hazardous waste at the facility until the Department receives certification of final closure.

**C. Ancillary equipment.** "Ancillary equipment" means any device including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps, that is used to distribute, meter, or control the flow of hazardous waste from its point of generation to a storage or treatment tank(s), between

hazardous waste storage or treatment tanks to a point of disposal on-site, or to a point of shipment for disposal offsite.

- ED. Claims made policy.** "Claims made policy" means an insurance policy that provides coverage for an occurrence for which a claim arising out of the occurrence is made during the term of the policy or any extension thereof.
- E. Component.** "Component" means either the tank or ancillary equipment of a tank system.
- F. Container.** "Container" means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.
- G. Corrosion expert.** "Corrosion expert" means a person who, ~~by reason of his~~ has knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience and is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be certified as being qualified by the National Association of Corrosion Engineers (NACE) or a licensed ~~registered~~ professional engineer who has certification or licensing that includes education and experience in corrosion control on buried or submerged metal piping systems and metal tanks.
- H. Dike.** "Dike" means a berm, embankment or ridge of either natural or man-made materials used to prevent the lateral movement of liquids, sludges, solids or other materials.
- I. Existing tank system.** "Existing tank system" or "existing component" means a tank system or component used for the storage or treatment of hazardous waste that is in operation, or which installation has commenced on or prior to July 14, 1986. Installation will be considered to have commenced if the owner or operator has obtained all Federal, State, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system and if either (1) a continuous on-site physical construction or installation program has begun, or (2) the owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for physical construction of the site or installation of the tank system to be completed within a reasonable time.
- J. Final Closure.** "Final closure" means the closure of all hazardous waste management units at the facility in accordance with all applicable requirements so that hazardous waste management activities are no longer conducted, except as provided in ~~Chapter~~ Standards for Generators of Hazardous Waste, 06-096 C.M.R. ch. 851, § ~~Section~~ 8(B).
- K. Food chain crops.** "Food chain crops" means tobacco, crops grown for human consumption, and crops grown for feed for animals whose products are consumed by humans.
- L. Freeboard.** "Freeboard" means the vertical distance between the top edge of a tank or surface impoundment dike and the surface of the waste contained therein.
- M. Hazardous waste incinerator.** "Hazardous waste incinerator" means an enclosed device using controlled flame combustion, a purpose of which is to thermally break down hazardous waste. Examples of incinerators are rotary kiln, fluidized bed, and liquid injection incinerators, cement kilns and boilers used to thermally treat hazardous waste.
- N. Hazardous Waste Management Unit.** "Hazardous waste management unit" as is defined in 40 C.F.R. § 260.10.

- O. Hydraulic conductivity.** "Hydraulic conductivity" means a recognized measure of water permeability under standard conditions of hydraulic head.
- P. Inground tank.** "Inground tank" means a device meeting the definition of tank whereby a portion of the tank wall is situated to any degree within the ground, thereby preventing visual inspection of that external surface area of the tank that is in the ground.
- Q. Installation inspector.** Installation inspector means a person who ~~by reason of his~~ has knowledge of the physical sciences and the principles of engineering, acquired by a professional education and related practical experience, and is qualified to supervise the installation of tank systems.
- R. Landfill.** "Landfill" is defined as is defined in 40 C.F.R. § 260.10.
- S. Land treatment.** "Land treatment" means the treatment of hazardous waste by application onto or incorporation into the soil surface so that the waste is rendered nonhazardous by soil processes. A land treatment facility is a disposal facility if the waste will remain after use of the facility ceases.
- T. Leachate.** "Leachate" means any liquid or semi-liquid, including any suspended components therein, that has percolated through or drained from hazardous waste.
- U. Leak detection system.** "Leak detection system" means a system capable of detecting the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary containment structure. Such a system must employ operational controls (e.g., daily visual inspections) or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure.
- V. Abbreviated License.** "Abbreviated License" means authorization to establish, construct, alter or operate a facility upon and for so long as the facility is in compliance with requirements established by *Licensing of Hazardous Waste Facilities*, 06-096 C.M.R. ch. ~~Chapter~~ 856, §~~Section~~ 11.
- W. Miscellaneous unit.** "Miscellaneous unit" means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, waste pile, land treatment unit, landfill, incinerator (including boiler or industrial furnace), or underground injection well.
- X. Mobile treatment facility.** "Mobile treatment facility" means a facility or unit capable of being moved and operated at hazardous waste sites for a limited period of time at a generator's site. In order to qualify as a "mobile treatment facility" units located at generator sites must be operational at more than one site in a calendar year.
- Y. New tank system.** "New tank system" means a tank system or component that will be used for the storage or treatment of hazardous waste and for which installation has commenced after July 14, 1986.
- Z. On ground tank.** "On ground tank" means a device meeting the definition of tank which is situated in such a way that the bottom of the tank is on the same level as the adjacent surrounding surface so that the external tank bottom cannot be visually inspected.

- AA. Partial Closure.** "Partial closure" means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of *Interim Licenses for Waste Facilities for Hazardous Waste*, 06-096 C.M.R. ch. ~~Chapter~~ 855 and 06-096 C.M.R. ch. 856 at a facility that contains other active hazardous waste management units.
- BB. Principal hazardous constituents (PHC).** "Principal hazardous constituents" (PHC) means the hazardous constituents identified in *Identification of Hazardous Waste*, 06-096 C.M.R. ch. ~~Chapter~~ 850, Appendix VIII.
- CC. Representative sample.** "Representative sample" means a sample of a universe or whole which can be expected and demonstrated to exhibit the average properties of the universe or whole.
- DD. Run-off.** "Run-off" means any rainwater, leachate or other liquid that drains from any part of the facility property over land, including land which is part of the facility property as defined in 06-096 C.M.R. ch. ~~Chapter~~ 856, §~~Section~~ 3 and land which is not.
- EE. Run-on.** "Run-on" means any rainwater, leachate or other liquid that drains onto any part of the facility property over land, including land which is part of the facility property as defined in 06-096 C.M.R. ch. ~~Chapter~~ 856, §~~Section~~ 3 and land which is not.
- FF. Seepage lagoon.** "Seepage lagoon" means any lagoon in which seepage of liquid hazardous waste or leachate through its base or sides is the intended method of disposal of liquids from the lagoon.
- GG. Storage.** "Storage" means the containment of hazardous waste, either on a temporary basis or for a period of years, in such a manner as not to constitute disposal of the hazardous waste.
- HH. -Sump.** "Sump" means any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serve to collect hazardous waste for transport to hazardous waste storage, treatment, or disposal facilities; except that as used in the landfill, surface impoundment, and waste pile rules, "sump" means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system.
- II. Surface impoundment.** "Surface impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation or diked area formed primarily of earthen materials, although it may be lined with man-made materials, which is designed to hold or holds an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well. Examples of surface impoundments are holding, storage, treatment, settling and aeration pits, ponds and lagoons.
- JJ. Tank.** "Tank" means a stationary device designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials which provide structural support.
- KK. Tank system.** "Tank system" means a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system.
- LL. Thermal treatment.** "Thermal treatment" means the treatment of hazardous waste in a device which uses elevated temperatures as the primary means to change the chemical, physical or biological character or composition of the hazardous waste. Examples of thermal treatment processes are incineration, molten salt, pyrolysis, calcination, wet air oxidation and microwave discharge.

**MM. Treatment.** "Treatment" means any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to handle; or amenable for recovery, amenable for storage, or reduced in volume.

**NN. Trust fund.** "Trust fund" means a trust, established by the owner or operator of a hazardous waste facility and administered by a financial institution with fiduciary responsibility to carry out the terms of the trust, in which funds are held for the purpose of assuring proper closure and/or post-closure care of the facility, as applicable.

**OO. Underground injection.** "Underground injection" means the subsurface emplacement of fluids through a bored, dug, drilled or driven well, or a subsurface waste disposal system including, but not limited to, a septic tank, cesspool, drainage field, seepage lagoon, salt dome formation, salt bed formation, underground mine or cave.

**PP. Underground tank.** "Underground tank" means a device meeting the definition of tank whose entire surface area is totally below the surface of and covered by the ground.

**QQ. Unfit for use tank system.** "Unfit for use tank system" means a tank system that has been determined through an integrity assessment or other inspection to be no longer capable of storing or treating hazardous waste without posing a threat of release of hazardous waste to the environment.

**RR. Waste pile.** "Waste pile" means any non-containerized accumulation of solid, nonflowing hazardous waste that is used for storage of the waste prior to treatment or disposal.

**SS. Zone of saturation.** "Zone of saturation" means that part of the earth's crust in which all voids are filled with water.

- 4. References to Federal Regulations.** Portions of this ~~Chapter~~rule refer to federal regulations of the United States Environmental Protection Agency (EPA). Unless otherwise specified, the federal regulations referenced are those ~~interim final or final~~ regulations ~~revised as of~~ as amended up to July 1, 1988, 2019 as they appeared in volume 40 of the Code of Federal Regulations (C.F.R.) and are hereby incorporated by reference. Where specifically stated, the terms of a referenced federal regulation are hereby ~~adopted~~ incorporated as terms of this ~~Chapter~~rule, except that in regulations incorporated thereby, "EPA" shall mean "the Maine Department of Environmental Protection—(DEP)"; "Administrator", "Regional Administrator" and "Director" shall mean "the Maine Board of Environmental Protection, the Commissioner of the Department of Environmental Protection or its the Commissioner's designated representative, as applicable", and the references to terms or phrases including "treat", "store", and/or "dispose" shall mean "handle". In addition, where the terms of federal regulations hereby incorporated by reference differ from or are inconsistent with other terms of this Chapter or 06-096 C.M.R. chs. ~~Chapters~~ 850\_- 860, the more stringent of the requirements shall apply. Other changes to regulations incorporated hereby are as expressly made in this ~~Chapter~~rule.

## 5. Environmental Performance Standards

- A.** All hazardous waste facilities ~~shall~~ must be located, designed, constructed, altered, operated, maintained and closed in a manner that will assure protection of human health and welfare and the

environment. Protection of human health and welfare and the environment ~~shall include~~, but is not ~~be~~-limited to:

- (1) Prevention of adverse effects on ground water quality considering:
  - (a) The volume and physical and chemical characteristics of the waste in the facility, including its potential for migration through soil or through synthetic liner materials;
  - (b) The hydrogeological characteristics of the facility and surrounding land;
  - (c) The quantity, quality and directions of ground water flow;
  - (d) The proximity and withdrawal rates of ground water users;
  - (e) The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water;
  - (f) The potential for health risks caused by human exposure to waste constituents;
  - (g) The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents;
  - (h) The persistence and permanence of the potential adverse effects; and
- (2) Prevention of adverse effects on surface water quality considering:
  - (a) The volume and physical and chemical characteristics of the waste in the facility;
  - (b) The hydrogeological characteristics of the facility and surrounding land, including the topography of the area around the facility;
  - (c) The quantity, quality and directions of ground water flow;
  - (d) The patterns of rainfall in the region;
  - (e) The proximity of the facility to surface waters;
  - (f) The uses of nearby surface waters and any water quality standards established for those surface waters;
  - (g) The existing quality of surface water, including other sources of contamination and their cumulative impact on surface water;
  - (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;
  - (j) The persistence and permanence of the potential adverse effects; and
- (3) Prevention of adverse effects on air quality, considering:



- (a) The volume and physical and chemical characteristics of the waste in the facility, including its potential for volatilization and wind dispersal;
  - (b) The existing quality of the air, including other sources of contamination and their cumulative impact on the air;
  - (c) The potential for health risks caused by human exposure to waste constituents;
  - (d) The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents;
  - (e) The persistence and permanence of the potential adverse effects; and
- (4) Prevention of adverse effects due to migration of waste constituents in the subsurface environment, considering:
- (a) The volume and physical and chemical characteristics of the waste in the facility, including its potential for migration through soil;
  - (b) The geologic characteristics of the facility and surrounding land;
  - (c) The patterns of land use in the region;
  - (d) The potential for migration of waste constituents into subsurface physical structures;
  - (e) The potential for migration of waste constituents into the root zone of food chain crops and other vegetation;
  - (f) The potential for health risks caused by human exposure to waste constituents;
  - (g) The potential damage to wildlife, crops, vegetation and physical structures caused by exposure to waste constituents; and
  - (h) The persistence and permanence of the potential adverse effects.
- B.** The treatment or disposal of hazardous waste at a facility by means of evaporation is prohibited.
- C.** The burning of hazardous waste in a cast iron and fire-tube boiler or in a boiler having a capacity level of less than 25 million Btu per hour is prohibited.
- D.** The disposal of hazardous waste within the coastal waters of this State is prohibited. In addition, the disposal of hazardous waste in any ocean waters by a resident of this state is prohibited except that this prohibition ~~shall~~does not apply to ocean waters which are within the jurisdiction of another state.
- E.** The placement of any hazardous waste into any salt dome formation, salt bed formation, underground mine or cave, and the underground injection of hazardous waste, is prohibited.

## 6. General Standards

- A. The standards set forth in this section are applicable to all waste facilities for hazardous waste, except as specifically provided otherwise in this Chapter or in ~~Chapter 06-096 C.M.R. ch. 856~~. An applicant for a license must demonstrate in the application that the facility has been designed, will be established, constructed or altered and will operate in compliance with these standards. A licensee must operate the facility so as to comply with these standards.
- B. The plans, specifications, descriptions and other documentation submitted by the applicant in support of ~~his~~ the application and approved by the Board in issuing the license constitute terms of the license which must be complied with by the licensee. These plans, specifications, descriptions and other documentation include, without limitation, those required by ~~Chapter 06-096 C.M.R. ch. 856, §~~ Section 10 and this Chapter.
- C. The facility must be established, constructed, altered and operated in compliance with the following requirements:
- (1) This Chapter;
  - (2) 40 C.F.R. § 264.12, Required Notices, ~~which is hereby adopted and incorporated by reference, provided, however, except~~ that the phrase "of this Part and Part 270 of this chapter" in 40 C.F.R. § 264.12(c) shall mean "of this Chapter and Chapter 06-096 C.M.R. ch. 856";
  - (3) 40 C.F.R. § 264.13, as revised on August 17, 1988 (53 FR 31211), General Waste Analysis, ~~which is hereby adopted and incorporated by reference, provided, however, except~~ that all references to 40 C.F.R. Part 268 or sections or subparts thereof shall mean "Chapter 06-096 C.M.R. ch. 852", all references to "this part" shall mean "this Chapter", the phrase "Part 270 and Part 124 of this chapter" found in 40 C.F.R. § 264.113(d) when referenced in 40 C.F.R. § 264.13(a)(1) shall mean "Chapter 06-096 C.M.R. ch. 856", all references to "Part 261" shall mean "Chapter 06-096 C.M.R. ch. 850", the references to "40 C.F.R. §§ Sections 264.17, 264.314, 264.341, 264.1034(d), 264.1063(d), 264.1083" shall mean this Chapter and the reference to 40 C.F.R. § 268.72 of this Chapter" shall mean "this Chapter and Chapter 06-096 C.M.R. ch. 852", and the phrase "reference to 40 C.F.R. § Section 260.22 of this Chapter" in 40 C.F.R. § 264.13(b)(7)(iii) shall mean "Chapter 06-096 C.M.R. ch. 850";
  - (4) 40 C.F.R. § 264.14, Security, ~~which is hereby adopted and incorporated by reference~~;
  - (5) The daily inspection requirements of ~~Chapter 06-096 C.M.R. ch. 856, §~~ Section 10(B)(3) and General Inspection Requirements of 40 C.F.R. §§ 264.15(a), 264.15(b)(1)-(4), 264.15(c) and 264.15(d), - General Inspection Requirements, ~~which is hereby adopted and incorporated by reference, provided, however, except~~ that any references to sections of 40 C.F.R. Part 264 shall mean "this Chapter";
  - (6) 40 C.F.R. § 264.16, Personnel Training, ~~which is hereby adopted and incorporated by reference~~. In addition, the training program must be approved by the Department prior to operation of the facility;
  - (7) 40 C.F.R. § 264.19, Construction quality assurance program, as applicable to all surface impoundments, waste piles, and landfill units, except that references to provisions of Part 264 mean analogous provisions of this Chapter and references to Part 270 shall mean Chapter 856.
  - (87) 40 C.F.R. §§ 264.17, 264.31-264.37, Preparedness and Prevention, ~~which are hereby adopted and incorporated by reference, provided, however, except~~ that references to "Section 40

C.F.R. § 264.13" shall mean "~~sub~~Section 6(C)(3) ~~above~~ of this Chapter". In addition, the precautions required to be taken by 40 C.F.R. § 264.17 must meet applicable requirements of codes, standards and rules of the Department of Public Safety (State Fire Marshal's Office); the aid agreements required by 40 C.F.R. § 264.37 must be in writing, on file with each party to the agreement and with the Department, readily accessible to facility personnel, and reviewed and updated annually; and the facility owner or operator shall provide copies of the agreement to all parties thereto and shall file a copy with the Department prior to the commencement of operation of the facility and upon each update of the agreement;

- (98) 40 C.F.R. §§ 264.51-264.56, Contingency Plan and Emergency Procedures, ~~which are hereby adopted and incorporated by reference, provided, however, except~~ that the reference in 40 C.F.R. § 264.52(b) to "Part 112 of this chapter, ~~or Part 1510 of Chapter V~~" shall read "Part 112 ~~or Part 1510~~ of EPA regulations";

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NOTE: Applicable facilities must also comply with ~~Chapter 06-096 C.M.R. ch. 856, §Section 13(A)(14).~~

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- (109) ~~—~~The owner or operator must keep a written record at the facility. The following information must be recorded, as it becomes available, and maintained in the operating record as required in 40 C.F.R. § 264.73 and Appendix I to 40 C.F.R. Part 264 ~~until closure of the facility:~~

- (a) A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by Appendix I to 40 C.F.R. Part 264, ~~which is hereby adopted and incorporated by reference, provided except~~ that references to 40 C.F.R. § ~~Section~~ 264.73 shall mean "this subsectionSection 6(C)(10) of this Chapter", and references to "Part 261 of this chapter" or sections or subparts thereof shall mean "~~Chapter 06-096 C.M.R. ch. 850~~";
- (b) The information specified in 40 C.F.R. § 264.73(b)(2)-(196) ~~as revised on August 17, 1988 (53 FR 31211), which is hereby adopted and incorporated by reference, provided, however, except~~ that all references to Part 264 or subparts or sections thereof shall mean "the applicable provisions of this Chapter and all references to Part 268 or subparts or sections thereof shall mean the applicable provisions of Chapter 06-096 C.M.R. ch. 852";
- (110) ~~40 C.F.R. § 264.74, Availability, Retention, and Disposition of Records, which is hereby adopted and incorporated by reference, provided, however, except~~ that the reference to "40 C.F.R. § ~~section~~ 264.73(b)(2)" shall mean "~~subsection~~Section 6(C)(109)(b) ~~above~~ of this Chapter";
- (121) ~~40 C.F.R. § 264.75, Annual Report, which is hereby adopted and incorporated by reference, provided, however, except~~ that references to sections within 40 C.F.R. Part 264 shall mean "~~this Chapter~~ 854", other comparable forms may be required by the Department, and the report must be prepared and submitted annually no later than March 1<sup>st</sup> for the preceding calendar year;
- (132) ~~40 C.F.R. § 264.76, Unmanifested Waste Report, which is hereby adopted and incorporated by reference, provided, however, except~~ that the reference to "40 C.F.R. § ~~Section~~ 263.20(e)(2)" shall mean "Section Hazardous Waste Manifest Requirements, 06-096 C.M.R. ch. 857, 7B § 8(B) of Chapter 857", and the phrase "if the waste is not excluded from the

manifest requirement by this chapter" is ~~deleted~~reference to 40 CFR 261.5 shall mean "Section 3(A)(5) of Chapter 850";

- (143) ~~-In addition to submitting annual reports and unmanifested waste reports as specified in subSections 6(C)(124) and 6(C)(132) of this Chapterabove, the owner/operator must comply with 40 C.F.R. § 264.77 and also report to the Department any releases, fires, and explosions as specified in subSection 6(C)(89) of this Chapterabove, and report to the Department any facility closures, and other reports-information as mandated in other provisions ofrequired by this Chapter; and other or reports, concerning quantities and handling of hazardous waste, as deemed necessary by the Department for effective management of wastes, including reports concerning quantities and handling of hazardous waste;-~~
- (154) ~~-06-096 C.M.R. ch. Chapter 857; Manifest Requirements; and all applicable requirements of transboundary movement of hazardous waste in accordance with 40 C.F.R. § 262 Subpart H;~~
- (165) 40 C.F.R. §§ 264.111-264.115, closure for all facilities, and 40 C.F.R. §§ 264.116-264.120 post-closure requirements for all disposal facilities, and waste piles, surface impoundments, and tanks closing as landfills, ~~as those provisions were revised on September 2, 1988 (53 FR 34086), Closure and Post Closure Care, which are hereby adopted and incorporated by reference, provided, however,except that:~~
- (a) ~~R~~references to other sections or subparts of 40 ~~CFR~~C.F.R. Part 264 shall mean "this Chapter";
  - (b) ~~R~~references to 40 ~~CFR~~C.F.R. Part 270 or Part 124, or sections or subparts thereof, shall mean "~~Chapter 06-096 C.M.R. ch. 856~~";
  - (c) ~~R~~references to 40 ~~CFR~~C.F.R. Part 262 shall mean "~~Chapter 06-096 C.M.R. ch. 851~~";
  - (d) 40 ~~CFR~~C.F.R. §§ 264.112(b)(8), 264.112(c)(2)(iv), 264.112(e), 264.118(b)(4) and 264.118(d)(2)(iv) shall be deleted;
  - (e) ~~C~~ertification of closure of any unit (not just land disposal units as provided in 40 ~~CFR~~C.F.R. § 264.115) used to handle hazardous wastes shall ~~be~~is required within 60 days of completion of closure; and
  - (f) ~~T~~he notification of closure required by 40 ~~CFR~~C.F.R. § 264.112(d) shall ~~must~~be provided at least 180 days prior to the date on which closure is expected to begin.
- (176) ~~-The financial requirements of 40 CFR § 264.141-264.143 and 264.147-264.151 for all facilities, and 40 CFR § 264.144-264.146 for all facilities subject to post-closure requirements, as those provisions were revised on September 1, 1988 (53 FR 33950), which are hereby adopted and incorporated by reference, provided, howeverexcept that:~~
- (a) ~~R~~references to other sections or subparts of 40 ~~CFR~~C.F.R. Part 264 shall mean "this Chapter";
  - (b) ~~R~~references to sections or subparts of 40 ~~CFR~~C.F.R. Part 265 shall mean "~~Chapter 06-096 C.M.R. ch. 855~~";

- (c) ~~R~~ferences to "section 3008 of RCRA" shall mean "applicable Board or Department procedures";
- (d) ~~R~~ferences to sections or subparts of 40 ~~C~~F~~R~~C~~.~~F~~.~~R~~.~~ Parts 124 or 270 shall mean "~~Chapter~~ 06-096 C.M.R. ch. 856"; ~~and.~~
- (e) Liability coverage ~~shall~~ must not be demonstrated through a financial test or corporate guarantee, therefore 40 ~~C~~F~~R~~C~~.~~F~~.~~R~~.~~ §§ 264.147(a)(2), 264.147(b)(2) ~~and (3)~~, 264.147(f), and 264.147(g); and 40 ~~C~~F~~R~~C~~.~~F~~.~~R~~.~~ §§ 264.151(g) and (h)(2) ~~shall be~~ deleted and are not incorporated by reference; and combinations of coverage ~~must~~ shall not include the financial test or corporate guarantee.
- (f) When a financial test is selected as the method of providing closure or post-closure assurance, the applicant must include in the application the most current copy of Form 10K as filed with the Securities and Exchange Commission or equivalent financial information. A current copy of Form 10K or equivalent financial information must be submitted to the Department with the annual fee each year for the term of the license.
- (g) Any trust agreement must provide that the trustee is prohibited from investing trust funds in Commodities, Real Estate Investment Trusts (REITs), Corporate or Municipal Bonds which have not received the highest rating by Moody's Investment Service or Standard & Poor's, equity shares of firms which are not subject to regulation by the Securities and Exchange Commission, Foreign Currency speculation or in any other investment vehicle that is not consistent with the "Prudent Investor~~Man~~" concept as it would apply to assuring that funds are available for carrying out a future activity with vital public interest. The agreement must also provide that primary consideration in making investments must be given to prompt liquidity and face value of assets held in trust.
- (h) The owner or operator must pay into a closure or post-closure trust fund according to the following requirements:
- (i) The owner or operator shall deposit 25 percent of the sum required into the trust fund on the date ~~the~~ this facility license is issued. The license is not effective until the deposit is made.
  - (ii) The remaining 75 percent of the sum required, adjusted for inflation, must be deposited in the trust fund in equal installments on or prior to the anniversary of the date upon which the license was issued, in each remaining year of the term of the license. The license remains in effect only if each deposit is made. The obligation to make deposits ceases only upon an approved transfer of the license or upon full payment.
  - (iii) After the last annual deposit to the trust fund, subsequent annual deposits to account for inflation must be made over the life of the facility. The license remains in effect only if these deposits are made. The obligation to make deposits ceases only upon an approved transfer of the license or upon accomplishment of closure.
  - (iv) If the ~~Department~~ Board determines that the costs of closure or post-closure are increased, it may require the owner or operator to deposit additional funds into the trust fund by single deposit or according to a schedule. If according to a schedule, adjustment for inflation must be made for each deposit after the first. The license remains in effect only if the additional deposits are made. The obligation to make

deposits ceases only upon an approved transfer of the license or full payment or upon accomplishment of closure or termination of the post-closure care period.

- (v) If a license is suspended or revoked, the ~~Department Board~~ may require deposits to be made according to Section 6(C)(17)(h)(i), (ii), (iii), and through (iv) above of this Chapter or may impose an accelerated schedule or may require immediate full payment, with adjustment for estimated inflation.
- (vi) When computing the annual inflation adjustment for closure or post-closure trust funds, the owner or operator must use the Implicit Price Deflator for Gross National Product as published by the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce in "Survey of Current Business."

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NOTE: ~~Sample Example~~ Computation:

~~1980-2020(Q1) Implicit Price Deflator 113.375177.36 = 1.09\*~~  
~~1979-2019(Q1) Implicit Price Deflator 111.388162.77~~  
~~113.375/111.388 = 1.018\*~~ Adjustment Factor

Assuming that the initial closure cost estimate, prepared in ~~1979~~2019, was \$250,000, then ~~\$250,000 x 1.09~~1.018 = \$27,250~~254,500~~ (new adjusted closure cost requirement). The licensee would then be required to adjust the monetary value of the funding instrument to reflect the new adjusted monetary amount, or portion thereof. The Implicit Price Deflator values used in this example are based on an index number in which year 2012 = 100. BEA periodically updates the index year.

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- (i) The owner or operator must submit with ~~the~~this application and must submit annually thereafter proof of liability insurance for the facility for sudden and accidental occurrences. Coverage must be provided during active life and closure and, where wastes will remain on the facility property after closure, during the post-closure period. The level of coverage must be at least one million dollars per occurrence and two million dollars annual aggregate, unless because of a greater risk a higher minimum is required by the Board for a particular facility.

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NOTE: The liability insurance requirements (40 C.F.R. § 264.147) are in addition to the financial assurance requirements for closure (40 C.F.R. § 264.143) and post-closure (40 C.F.R. §§ 264.145).

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- (j) The owner or operator of a facility that utilizes a landfill, land treatment, surface impoundment or underground storage in tanks to handle hazardous waste or of a facility where hazardous waste will or is likely to remain on the facility property after closure must submit with ~~the~~this application and must submit annually thereafter proof of liability insurance for the facility for non-sudden and accidental occurrences. Coverage must be provided during active life and for so long as any waste remains on the facility property but for no longer than the post-closure period. The level of coverage must be at least three million dollars per occurrence and six million dollars annual aggregate, unless because of a greater risk a higher minimum is required by the Board for a particular facility.

- (k) Wording of liability insurance endorsements must be identical to the wording contained in 40 ~~CFRC.F.R.~~ § 264.151(i) except that subparagraph 2(b) ~~of the endorsement must~~shall read: "The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any such payment made by the Insurer."
- (l) All liability insurance coverage amounts must be exclusive of legal defense costs.
- (m) A financial test may not be utilized in lieu of liability insurance nor may an owner or operator self-insure. If liability insurance is unavailable, a \$2,000,000 letter of credit drawn on a reputable bank, the terms of which the ~~Board~~Department must approve, may be utilized in lieu of liability insurance for sudden and accidental occurrences.
- (n) If a liability insurance policy is written as a "claims made" policy, an endorsement must provide for a discovery period of at least twelve (12) months beyond the date of expiration or cancellation of the policy. The endorsement must also provide that the underwriter will notify the public according to the requirements below:
- (i) At least sixty (60) days prior to the date upon which the policy will expire or be canceled, give written notification to all owners of property abutting the facility and to the chief elected official in the municipality in which the facility is located and in each of the municipalities immediately abutting the municipality in which the facility is located, that insurance for the facility will expire or be canceled, giving date of expiration or cancellation, and that claims against the insured must be filed within twelve (12) months from the date of expiration or cancellation, specifying where and how claims can be filed;
- (ii) During the first, third, sixth and ninth month subsequent to the date of expiration or cancellation, place in each of the State's major newspapers (Portland Press Herald, Bangor Daily News, Lewiston Sun, Kennebec Journal, and Waterville Sentinel) and in all local newspapers published or widely distributed in the municipality where the facility is located an advertisement designed to attract notice and containing the information specified in (i): above.

(187) 06-096 C.M.R. ch. Chapter 851, §§Section 8-(A) & 8(B), Pre-Transport Requirements.

(198) 40 ~~CFRC.F.R.~~ § 264.101, Corrective Action for Solid Waste Management Units, which is hereby adopted and incorporated by reference.

(20) Applicable air emission standards of 40 C.F.R. Part 264, Subparts AA, BB, and CC and all other requirements of this Chapter.

NOTE: If any standard of 40 C.F.R. Part 264, Subparts AA, BB, and CC conflicts with any requirement of this Chapter, including the "Additional Standards Applicable to Hazardous Waste Incinerators" in Section 13 of this Chapter, then the facility must comply with the more stringent requirement.

(21) When environmental investigation or monitoring data, or reports interpreting environmental investigation or monitoring data, are submitted to the Department, the submittal must be accompanied by one or more electronic Environmental Data Deliverables (EDDs)

containing all data in formats specified by the Department in accordance with Maine's Uniform Electronic Transaction Act, 10 M.R.S. § 9418 (2)(A). This applies to data for all environmental media and waste materials. The data includes but is not limited to laboratory analytical data, field analytical data and monitoring parameters, water level and water flow data.

- D. No person shall own or operate a waste facility for hazardous waste without having obtained a hazardous waste facility identification number specific to the site.
- ~~(1)~~ The identification number ~~must~~ shall be comprised of the identification number assigned to the facility by the U.S. Environmental Protection Agency (EPA) ~~and/or the Department, including any state-specific identifying number or letter as may be assigned by the Department.~~

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NOTE: An owner or operator must apply to EPA for an identification number in accordance with the EPA notification procedures ~~described in 45 Federal Register 12746~~ of 40 C.F.R. § 264.11.

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- E. An applicant must demonstrate in ~~the~~his application sufficient financial capacity, including projections of utilization of the facility by hazardous waste generators, to construct, operate and maintain all aspects of the facility in accordance with requirements of statute and rules. A licensee must maintain sufficient financial capacity for the term of the license, including any renewal license, and at the time of renewal must demonstrate sufficient current financial capacity including current projections of utilization of the facility during the renewal term.
- F. For a facility at which hazardous waste will be disposed, the applicant must demonstrate that the volume of waste and the risks related to its handling will have been reduced to the maximum practical extent. A licensee must operate the facility to meet this requirement during the term of the license, including renewal thereof, and at time of renewal must provide a current demonstration that the requirement is met.
- ~~For an on-site facility, the applicant shall comply with this requirement first by toxics use reduction, as described in 38 MRSA section 2302, subsection 1, then by waste reduction, as defined in 38 MRSA section 2302, subsection 3, then by treatment and volume reduction prior to disposal.~~

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NOTE: Pursuant to 38 M.R.S.A. 2304, Subsection 3(B)(1)(d), hazardous waste generated as a result of remedial/corrective actions or facility closures required by law or undertaken to protect employee health and safety, public health and safety, or the environment, is exempt from this requirement.

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~~— A licensee must operate the facility to meet this requirement during the term of the license, including renewal thereof, and at time of renewal must provide a current demonstration that the requirement is met.~~

- G. An application for a mobile treatment facility may consist of two phases:
- (1) The first consisting of general operational, structural features, and generic siting criteria.
  - (2) The second consisting of site specific operating and siting features.

## 7. Facility Location in Certain Areas



**A. Prohibition.** No person shall establish, construct, alter, or operate a waste facility for hazardous waste, except as noted, where the facility is or would be located:

- (1) On land defined as a wetland under statutes or regulations administered by the Department, Department of Agriculture, Conservation and Forestry, Department of Inland Fisheries & Wildlife, or Department of Marine Resources, ~~or the State Planning Office~~; or
- (2) Within any 100--year flood plain so designated by the Federal Emergency Management Insurance Agency or within the level of any documented flood of a greater magnitude. This prohibition ~~shall~~ does not apply to a facility where hazardous waste is not handled in a landfill, land treatment unit, miscellaneous unit, surface impoundment or waste pile or to any interimly-licensed (under 06-096 C.M.R. ch. Chapter 855) storage or treatment facility in use on the effective date of this Chapterrule; or
- (3) So that it overlies any portion of a surface or subsurface sand and gravel aquifer or a high yield bedrock aquifer. This prohibition ~~shall apply~~ sy to a facility where hazardous waste is handled in a surface impoundment, landfill, underground tank, or waste pile or a facility where hazardous waste is treated utilizing land treatment techniques; or

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NOTE: Maps prepared by the Department of Agriculture, Conservation and Forestry (Maine Geological Survey) may provide guidance as to the location of sand and gravel and bedrock aquifers within the State of Maine.

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- (4) Within the boundaries of a state or federal park or designated wilderness area. This prohibition ~~shall~~ does not apply to a storage facility (Section 12 of this Chapterrule);

**B. Rebuttable Presumption.** A waste facility for hazardous waste located as set forth below is presumed to pose serious threats to public health or welfare or to the environment such that a license for a facility cannot be issued. The presumption applies if:

- (1) The facility property is located on land defined as a wetland under statutes or regulations administered by the Department, Department of Agriculture, Conservation and Forestry, Department of Inland Fisheries & Wildlife, or Department of Marine Resources, ~~or the State Planning Office~~; or
- (2) The facility or facility property is located within 300 feet of any 100--year flood plain so designated by the Federal Emergency Management Insurance Agency or within 300 feet of the level of any documented flood of a greater magnitude. Evidence that the facility will be constructed or operated in compliance with the special requirements for facilities located in a flood plain is not an adequate basis for rebutting the presumption against such siting. However, the presumption may not be rebutted unless the applicant demonstrates along with its other offer of evidence rebutting the presumption that the facility will meet all applicable standards; or
- (3) The facility or facility property overlies any portion of a surface or subsurface sand and gravel aquifer or its primary recharge zone or a high yield bedrock aquifer; or
- (4) The facility or facility property is located within one mile upgradient of any underground source of public drinking water, or within the watershed of a surface water source of public drinking water, or within 1,000 feet of any source of potable water for humans or livestock; or

- (5) The facility or facility property is located such that it may pose a threat to fisheries or wildlife or other natural resources in an area including a sanctuary, refuge, or preserve designated as such under statutes or regulations administered by the Departments of Inland Fisheries & Wildlife or Marine Resources; a state or federal park, sanctuary, or designated wilderness area, or a critical area identified as such under statutes or regulations administered by the Natural Areas Program of the Maine Department of Agriculture, Conservation, and Forestry ~~State Planning Office~~, or to fish in a fish hatchery; or
- (6) The facility property is located within the boundaries of a state or federal park or designated wilderness area.

An applicant seeking a license to establish, construct, alter, or operate a facility in such a location must overcome this presumption by persuasive evidence that the facility is unique in some way that allows for compliance with the intent of this Chapter ~~rule~~.

## 8. Additional Standards Applicable to Hazardous Waste Landfills

### A. Performance Standards

- (1) Landfills are regarded by the Board as the least preferable method of hazardous waste handling. While it is expected that the expense of landfilling will discourage its use, the Board, prior to approval of any application for a hazardous waste landfill, will consider whether alternative preferred method(s) exist for handling a waste proposed to be landfilled.
- (2) A hazardous waste landfill must be designed, constructed, and installed to prevent any migration of wastes out of the landfill to adjacent subsurface soil or ground water or surface water at any time during the life, including the post-closure period, of the landfill.
- (3) A hazardous waste landfill must be established, constructed, altered and operated to meet the following performance standards:
- (a) ~~No~~ ~~A~~ landfilled hazardous waste or constituent or derivative thereof ~~must not~~ ~~shall~~ appear in ground or surface waters at a concentration above background level, or above current public health drinking water standards for Maine, including the "Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016" ~~Maximum Exposure Guidelines~~, or standards for aquatic toxicity, whichever is most stringent. Background levels ~~shall~~ ~~must~~ be those established by the pre-construction analysis required by ~~Chapter 06-096 C.M.R. ch. 856, §Section 10(C)(10+)(g)~~ or of the upgradient monitoring well required by Section 8(D)(1) ~~below of this Chapter~~, whichever is lower.

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NOTE: Drinking water and aquatic toxicity standards are obtained from current manuals including but not limited to: State of Maine Rules of the Department of Health and Human Services relating to Drinking Water; "Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016"; "Drinking Water and Health" published by the National Research Council Academy of Sciences; "Suggested No-Adverse Response Levels (SNARLs)" as determined by the Environmental Protection Agency; "Ambient Water Quality Criteria" manuals, published by the Environmental Protection Agency.

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(b) ~~No~~ A landfilled hazardous waste or constituent or derivative thereof, ~~must not~~ shall appear in the atmosphere in concentrations significantly above the background level ~~nor exceed~~ current ambient air quality standards for Maine at any time. Background levels ~~shall~~ must be established by monitoring or demonstrated to have been previously established by monitoring.

**B. Design.** The facility must comply with the provisions of 40 C.F.R. §§ 264.301(a), 264.301(c), and 264.301(fg)-(jk) are hereby adopted and incorporated by reference, provided however, that in addition to the following:

(1) All new, replacement, or expanded portions of a landfill established in the State of Maine must be at least double-lined and have systems for leachate collection and removal, run-on and run-off control and wind dispersal control that meet or exceed the specifications in 40 C.F.R. § 264.301(c) and (g)-(k). The two liners are referred to below as

~~(a) the bottom liner, which lies adjacent to subsoil deposits; and~~

~~(b) the top liner, which is in contact with the landfilled waste.~~

(2) A landfill must have at least two impervious liners of or equivalent to:

~~(a) a~~ a synthetic top liner (e.g., geomembrane), which is underneath the landfilled waste and is designed and constructed of materials to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

~~(a)(b) a~~ a composite bottom liner, which is underneath the top synthetic liner and overtop the subsoil and consists of at least two components, including an upper synthetic component designed and constructed of materials (e.g., geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period and a lower component of recompacted clay of a minimum of five-ten (105) feet thick, with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec. or less, and, in addition, have a minimum of ten (10) feet of similar deposits beneath the bottom liner.

~~If a the suitably low permeability clay lower component liner cannot meet be produced this standard by recompaction, its permeability must be decreased by addition of bentonite or other approved sealing compounds to meet the standard.; or,~~

~~(b) a synthetic top and bottom liner and, in addition, have a minimum of ten (10) feet of similar clay deposits as specified in (a) above, beneath it.~~

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~~NOTE: Proper siting on low permeability deposits is the single most important design criterion. Siting in a favorable hydrologic setting is also an important design criterion, ground water discharge zones being considered the most favorable.~~

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(3) Where the landfill is located in a ground water discharge zone, the applicant must evaluate the potential for upward rupture of the liner or basal layer and design the landfill so as to prevent such a rupture.

(4) Any synthetic liner approved by the Board and installed after December 31, 1993 must be a minimum thickness of 80 mil's, and be able to meet the following criteria:

- (a) Meet National Sanitary Foundation (NSF) Standard #54 specifications, if one exists for the proposed material; and
- (b) Meet required performance specifications for the proposed project application.
- ~~(5) At a minimum, synthetic liners must be used in lieu of clay liners if the clay cannot be made sufficiently impermeable or if organic solvents are to be handled in the landfill.~~
- (56) Any synthetic liner proposed for use ~~must~~shall meet all of the following criteria. A synthetic liner must:
  - (a) Be of adequate strength and durability to ensure mechanical integrity during emplacement, freeze-thaw cycles in the underlying soils and operation of the facility; and
  - (b) Be of uniform thickness and free from thin spots, cracks, tears, blisters and foreign particles; and
  - (c) Be resistant to attack from soil bacteria, fungus, burrowing animals and birds; and
  - (d) Be resistant to ozone cracking, sun weathering and stiffening in frosty conditions; and
  - (e) Be able to withstand extreme heat either by itself or in combination with a protective layer of earthen material; and
  - (f) Be compatible with and unaffected by hazardous waste(s) which may be landfilled at the facility and any constituents or derivatives thereof; and
  - (g) Be impermeably sealed in the field, without defects in the seams between sections or in the parent material itself; and
  - (h) Be properly installed on a base which is both smooth and structurally capable of supporting the entire landfill; and
  - (i) Be covered by a sufficient layer of well-graded fine soil material (not less than six inches in depth) so as to prevent damage to the liner due to facility operation, such as the movement of heavy equipment used at the site.
  - (j) Be installed to cover all surrounding earth likely to be in contact with a waste or leachate; and
  - (k) Be able to generate sufficient friction force between itself and the surrounding materials in order to maintain a short term factor of safety of 1.25 and a long term factor of safety of 1.50; and
  - (l) Be able to meet the manufacturer's minimum specifications for the material being proposed for use.

Manufacturers' specifications on the standard leak rate of the liner must be specified in the application.

- ~~(7) The applicant must develop a Quality Assurance Plan (QAP) in order to ensure that design specifications and performance requirements for all hazardous waste facility components are met during construction. The QAP shall clearly describe the Construction Quality Control (CQC) and Construction Quality Assurance (CQA) measures to be implemented during construction. The QAP shall include, but not be limited to, the following:~~
- ~~(a) A description of the responsibility and authority of organizations and personnel involved in permitting, designing, and constructing the facility;~~
  - ~~(b) The qualifications of the CQC/CQA personnel;~~
  - ~~(c) The observations and tests to be used to ensure that the construction or installation meets or exceeds all design criteria, plans, and specifications for each hazardous waste facility component;~~
  - ~~(d) The sampling activities, sample size, methods for determining sample locations, frequency of sampling, acceptance and rejection criteria, and methods for ensuring that corrective measures are implemented;~~
  - ~~(e) Recordkeeping and reporting requirements for CQC/CQA activities;~~
  - ~~(f) An assessment of construction equipment and manpower skills necessary to achieve design specifications and performance requirements; and~~
  - ~~(g) A list and description of required manufacturers' product certification, installation certifications, and warranties.~~
- (68) A leachate detection, collection, and removal system must be installed immediately above the top synthetic liner to assure that leachate is collected and removed. In addition, a leachate detection, collection and removal system must be installed between the top synthetic liner and bottom composite liners.
- (79) The leachate detection, collection and removal system must be constructed such that:
- (a) ~~T~~he system immediately above the top synthetic liner must be designed, constructed, maintained, and operated to collect and remove leachate from the landfill during the active life and post-closure care period. The design of the collection and removal system ~~must~~shall be such that no more than 30 cm (1 foot) of leachate ~~shall~~is permitted to accumulate on the top synthetic liner at any one time.
  - (b) ~~T~~he leachate collection system between the top synthetic liners and the bottom composite liner must be designed, constructed, maintained, and operated to detect, collect, and remove liquids that may leak through the top synthetic liner during the active life and post-closure care period and meet the specifications for the action leakage rate approved for the landfill in accordance with 40 C.F.R. § 264.302 and the requirements of 40 C.F.R. § 264.301(c)(3)(i)-(v), including at a minimum:
    - (i) Constructed with a bottom slope of one percent or more;

- (ii) Constructed of granular drainage material with a hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-5}$  m<sup>2</sup>/sec or more;
- (iii) Constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the surface impoundment;
- (iv) Designed and operated to function without clogging during the active life and post-closure care period; and
- (v) Constructed with sumps and liquid removal methods of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s) and each sump and removal system must provide a method for measuring and recording the volume of liquids present and removed.

~~(c) The leachate collection systems must be constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the landfill; and designed and operated to function without clogging during the active life and post closure care period.~~

- (810) The applicant must evaluate the potential for generation of gas within buried wastes. If a potential for build up or explosion of gases exists, a gas discharge system capable of collecting gases must be designed into the landfill cover system.
- (911) The applicant must evaluate the compaction and consolidation of materials placed within the landfill. If compaction could result in ponding of drainage on the final cover system, an impermeable plastic cap or cover liner must be used to prevent infiltration. Otherwise, the final cover may be a layer of re-compacted clay at least 2 feet thick with a hydraulic conductivity of less than  $1 \times 10^{-7}$  cm/sec.

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NOTE: Design of the closure cap/final cover system is integral to the design of a landfill.

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- (1012) A sand and gravel drain layer must be placed over the final cover system.
- (113) Final cover must be protected from disruption. Disruption due to frost heaving and penetration by burrowing rodents must be prevented by grading the site with soil material and at least six inches of topsoil. Disruption by plant roots must be prevented by the planting of shallow-rooted vegetation and its maintenance in perpetuity. The final grade of the landfill surface must be between two and ten percent grade.
- (124) The applicant must evaluate the earthquake risk. The applicant must show that the facility is designed so that any disruption due to earthquake will not cause any performance standard to be violated.

(135) A buffer zone of at least 200 feet must be designed and maintained between the boundaries of the facility property and the boundaries of the landfill and of any other area of the property where hazardous waste will be handled.

(146) Fugitive emissions, including volatile organic compounds, from the facility must be controlled in accordance with a plan approved by the Board.

**C. Operation.** The facility must comply with the provisions of 40 ~~CFR~~C.F.R. §§ 264.302, 264.303, 264.304, 264.312, ~~254~~264.313, 264.316 and 264.317, ~~are hereby adopted and incorporated by reference, provided however, except that references to 40 C.F.R. Part 268 or sections thereof mean 06-096 C.M.R. ch. 852 and:~~

(1) Run-on must be diverted away from the facility.

(2) Run-off from the facility must be collected, analyzed and managed according to a design and plan approved by the Board.

(3) Cover material, sufficient to control odors, dispersion by wind and excessive water infiltration into a hazardous landfill cell, must be placed daily or after the landfill has received new wastes, whichever is the longer period.

(4) Access to active portions of the facility must be restricted to facility personnel needed for operation or management and to authorized federal, state and local officials while in performance of their official duties.

(5) ~~No~~ Liquid waste ~~must not~~ shall be placed in a landfill except in accordance with 40 C.F.R. § 264.314 and the following:

(a) Bulk or non-containerized liquid hazardous or nonhazardous waste, or hazardous or nonhazardous waste containing free liquids, must not be placed in a landfill unless, before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically, so that free liquids are no longer present and that the wastes are altered in such a way so that the materials that have absorbed or adsorbed the liquids will not biodegrade or release liquids when compressed.

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NOTE: ~~The paint filter method specified in Chapter 850, Appendix XI will generally be used to determine liquid content for the purposes of this section.~~

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(b) Containers holding hazardous or nonhazardous free liquids must not be placed in a landfill unless:

(i) all free liquid has been removed by decanting or other methods, or solidified so that no free liquid is present, or otherwise eliminated in such a way that the materials that have absorbed or adsorbed the liquids will not biodegrade or release liquids when compressed; or

(ii) the container is a lab pack as defined in 40 ~~CFR~~C.F.R. § 264.316 and is disposed of in accordance with 40 ~~CFR~~C.F.R. § 264.316.

- (c) To demonstrate the absence or presence of free liquids Method 9095B (Paint Filter Liquids Test) in EPA Publication SW-846 must be used in either a containerized or a bulk waste, the test method referenced in 850, Appendix XI of the Department's rules shall apply.
- (6) Incompatible wastes must not be placed in the same landfill cell and must be separated horizontally by such barriers as will prevent any mixing of them in accordance with a plan approved by the Department. Vertical landfilling of incompatible wastes is prohibited.
- (7) Containers placed in landfills must be:
- (a) At least 90 percent full; or
  - (b) Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial.
- (8) Leachate must be removed from the leachate collection system either continuously or with sufficient regularity that no hydraulic head builds up within it.
- (a) An action leakage rate, representing the maximum design flow rate that the leak detection system can remove without fluid head on the bottom liner exceeding one foot, must be identified.
  - (b) Liquids removed from the leachate collection system must be recorded weekly and converted to an average daily flow rate in gallons per acre per day at each sump where liquid is removed and used to determine exceedances of the action leakage rate.
  - (c) Owners or operators must have an approved response action plan specifying response actions to be taken in the event the action leakage rate has been exceeded. The response action plan must comply with 40 C.F.R. § 264.304.
- D. Ground Water Protection.** Ground water beneath and adjacent to the facility ~~must~~ shall be protected and monitored in accordance with the requirements of:
- (1) ~~This rule~~ Chapter, including the following:
- (a) A minimum of four wells, sampled at levels specified or approved by the Department, are required to monitor ground water quality. At least one monitoring well ~~must~~ shall be located hydraulically upgradient from the landfill and three downgradient. The downgradient wells ~~must~~ shall be located as close to the landfill as possible without disturbing the design or operational systems.
  - (b) Monitoring wells must, at a minimum, be packed and cased through surficial deposits and screened where appropriate flow zones exist. The top of the well casing must be sealed to prevent contamination of ground water by run-off. Materials used in construction must not affect water quality.
  - (c) Water level measurements must be taken and sampling and analysis must be performed by the operator according to a schedule specified or approved by the Department. Additional sampling may be required if the performance standards are not being met. Water levels and results of analyses must be sent to the Department within ten working days of being taken or performed.



- (d) Analysis of samples must be performed by a laboratory certified by the State of Maine or the U.S. Environmental Protection Agency.
- (e) A final set of monitoring well specifications must be sent to the Department upon completion of well installation, showing:
- (i) ~~e~~Exact location of monitoring wells;
  - (ii) ~~e~~Elevation of the land surface and the top of the well casing to the nearest tenth of a foot;
  - (iii) ~~d~~Depth to the bottom of the well;
  - (iv) ~~s~~Screened interval (depth to top and bottom of well screen);
  - (v) ~~t~~Type and size of casing;
  - (vi) ~~t~~Type and size of screen; and
  - (vii) ~~—t~~Type and grain size of packing, grouting and other sealing materials, and fluids used in drilling.
- (2) ~~40 CFR C.F.R. § 264.93 and §§ 264.95-264.100 as those provisions were on October 11, 1988 (53 FR 39720), which are hereby adopted and incorporated by reference, provided, however, except~~ that references to 40 CFR C.F.R. §§ 264.92 or 264.94 or portions thereof shall mean the performance standards of Section 8(A) of this ~~rule~~ Chapter and ~~no~~ no variance from these standards shall ~~bear~~ not be allowed, references to 40 CFR C.F.R. Part 261 shall mean ~~Chapter 06-096 C.M.R. ch. 850, the reference to "Section 144.8 of this chapter" in 40 CFR C.F.R. 264.93(c) shall mean "40 CFR C.F.R. 144.8", and references to Appendix IX of Part 264 shall mean Appendix IX of this Chapter.~~
- (3) Assurance of financial responsibility for corrective action must be provided in accordance with Section 6(C)(~~17~~6) of this ~~rule~~ Chapter.
- (4) For the purposes of this section, "detection" is defined as statistically significant evidence of contamination, and "exceedence" is defined as statistically significant evidence of increased contamination.
- E. Surface Water Monitoring.** The Board or Department may require surface waters within or adjacent to a facility or facility property to be monitored in accordance with a plan approved by the Board or Department, as applicable.

**F. Air Monitoring**

- (1) Emissions, including fugitive emissions, from the facility ~~must~~ shall be monitored in accordance with a plan approved by the Board.
- (2) If, at any time during operation, closure or post-closure of the facility, the monitoring demonstrates that the performance standards are not being met, a corrective action program

must be implemented, details of which must be specified or approved by the Board or Department, as applicable.

### G. Surveying and Recordkeeping

- (1) The owner or operator of a hazardous waste landfill facility must prepare and keep current a map showing the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks, the contents of each cell and the total amount and location of each type of hazardous waste within each cell. In addition, the owner or operator must keep a record of all repairs, accidents and abatement measures taken.
- (2) The map and record must be maintained in the facility operating record and kept current for as long as the facility is operated and must be kept at the facility. The Department may require that a current copy of the map and record be kept on file with the Department. Upon closure the map and the record must be delivered to the Department.

**H. Closure and Post-Closure Requirements.** The facility must comply with the requirements of 40 CFR C.F.R. § 264.310, are hereby adopted and incorporated by reference, provided however, except that references to other sections or subparts of 40 CFR C.F.R. Part 264 shall mean "this Chapter". Furthermore, in the closure and post-closure plans, the owner or operator must address the following objectives and indicate how they will be achieved:

- (1) Control of pollutant migration from the facility via ground water, surface water, and air;
- (2) Control of surface water infiltration, including prevention of pooling; and
- (3) Prevention of erosion.
- (4) The owner or operator must consider at least the following factors in addressing the closure and post-closure care objectives of this section:
  - (a) Type and amount of hazardous waste and hazardous waste constituents in the landfill;
  - (b) The mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;
  - (c) Site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to ground water, surface water, and drinking water sources);
  - (d) Climate, including amount, frequency, and pH of precipitation;
  - (e) Characteristics of the cover including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and
  - (f) Geological and soil profiles and surface and subsurface hydrology of the site.
- (5) During the post-closure care period, the owner or operator of a hazardous waste landfill must, at a minimum:

(a) Maintain the function and integrity of the final cover as specified in the approved closure plan; and

(b) Maintain and monitor the leachate collection, removal, and treatment system (if there is one present in the landfill) to prevent excess accumulation of leachate in the system.

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NOTE: If the collected leachate is a hazardous waste under 06-096 C.M.R. ch. ~~Chapter~~ 850, it must be managed as a hazardous waste in accordance with all applicable requirements of these rules.

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## 9. Additional Standards for Hazardous Waste Surface Impoundments

**A. Performance Standards.** A hazardous waste surface impoundment which is existing, new or laterally expanded must be established, constructed, altered and operated to meet the following performance standards:

- (1) A surface impoundment must be designed, constructed, and installed to prevent any migration of wastes out of the impoundment to the adjacent subsurface soil or ground water or surface water at any time during the life, including the post-closure period, of the impoundment.
- (2) ~~No~~ An impounded hazardous waste or constituent or derivative thereof ~~must not~~ shall appear in ground water or surface water at a concentration above background level, or above current public health drinking water standards for Maine, including the "Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016" ~~Maximum Exposure Guidelines~~, or standards for aquatic toxicity, whichever is most stringent. Background levels ~~shall~~ must be those established by the preconstruction analysis required by ~~Chapter 06-096 C.M.R. ch. 856, §Section 10(C)(104)(g)~~ or of the upgradient monitoring well required by Section 8(D)(1) of this ~~rule~~ Chapter, whichever is lower.

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NOTE: Drinking water and aquatic toxicity standards are obtained from current manuals including but not limited to: State of Maine Rules of the Department of Health and Human Services relating to Drinking Water; "Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016"; "Drinking Water and Health" published by the National Research Council Academy of Sciences; "Suggested No-Adverse Response Levels (SNARLs)" as determined by the Environmental Protection Agency; "Ambient Water Quality Criteria" manuals, published by the Environmental Protection Agency.

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- (3) ~~No~~ An impounded hazardous waste or constituent or derivative thereof ~~must not~~ shall appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed current ambient air quality standards for Maine at any time. Background levels ~~must~~ shall be established by monitoring or demonstrated to have been previously established by monitoring.
- (4) An applicant seeking a license to treat hazardous waste in a surface impoundment must demonstrate to the satisfaction of the Board that:
  - (a) ~~The~~ The waste is capable of being treated in a surface impoundment using the process proposed, based upon a trial test (a bench or small-scale pilot test) that determines the treatment technique, its effectiveness, and any limiting factors;
  - (b) The design measures and operating procedures will maximize the success of the treatment;

- (c) ~~T~~he facility design and components are compatible with the hazardous waste and the treatment process; and
- (d) ~~T~~he treatment process can and will be controlled at all times so as to prevent uncontrolled releases of hazardous waste or its constituents or derivatives and to protect the public health and safety and the environment.

**B. Design.** The facility must comply with the provisions of 40 C.F.R. §§ 264.221(c) and 264.221(g)-(i), in addition to the following:

- (1) ~~The provisions of 40 CFR 264.221(c), and (f) (h) are hereby adopted and incorporated by reference provided however, that a~~All new, replacement or expanded portions of a surface impoundment established in the State of Maine must be at least double-lined. ~~The two liners are referred to below as a) the bottom liner, which lies adjacent to subsoil deposits, and b) the top liner, which is in contact with the impounded waste.~~
- (2) A surface impoundment must have at least two impervious liners of or equivalent to:
  - (a) A synthetic top liner (e.g., geomembrane), which is underneath the impounded waste and is designed and constructed of materials to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and
  - (a)(b) A composite bottom liner, which is underneath the top synthetic liner and overtop the subsoils and consists of two components, including a synthetic upper component (e.g., geomembrane) designed and constructed of materials to prevent the migration of hazardous constituents into this component during the active life and post-closure care period and a lower component an impervious bottom liner of, or equivalent to, a of recompacted clay layer of a minimum of ~~5~~ ten (10) feet thick, with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less. ~~and, in addition, have a minimum of 10 feet of similar deposits beneath it. If a suitably low permeability clay bottom lower liner component cannot be produced by recompaction, its permeability must be decreased by addition of bentonite or other approved sealing compounds.~~

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NOTE: Proper siting on low permeability deposits is the single most important design criterion for hazardous waste surface impoundments. Siting in a favorable hydrologic setting is also an important design criterion, ground water discharge zones being considered most favorable.

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- (3) Where the surface impoundment is located in a ground water discharge zone, an applicant must evaluate the possibility of upward rupture of the liners and design the impoundment so as to prevent such a rupture.
- (4) ~~At a minimum, a synthetic liner must be used in lieu of a clay liner if the clay cannot be made sufficiently impermeable or if organic solvents are to be handled in the surface impoundment. Any synthetic liner used as part of a surface impoundment must conform to the requirements of Section 8B(4), (6) and (7) of this rule.~~
- (5) ~~A leachate detection, collection and removal system must be installed, constructed, maintained, and operated immediately above a clay or synthetic bottom liner to assure that leachate is~~

~~detected, collected and removed. The system must be designed so that the leachate can flow out freely, without a pressure head of leachate developing within the system.~~

~~— In addition, a leachate detection system must be installed immediately beneath the clay or synthetic bottom liner.~~

~~— The leachate collection system must be:~~

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

~~(b) Designed and operated to function without clogging during the active life and post closure care period.~~

(46) The liner system in contact with the impounded waste must be:

(a) Compatible with the waste;

(b) Sufficiently impermeable to the waste under maximum operating conditions of hydraulic head so that the leachate system would not be filled in a period of less than one year;

(c) Of sufficient strength to outlast the design lifetime of the impoundment; and

(d) Constructed on a foundation capable of supporting the liner and the pressure head of the impoundment when full.

(5) A leachate detection, collection and removal system must be installed immediately above the top synthetic liner to assure that leachate is collected and removed. In addition, a leachate detection, collection and removal system must be installed between the top synthetic liner and bottom composite liner.

(6) A leachate detection, collection and removal system must be constructed such that:

(a) The system immediately above the top synthetic liner must be designed, constructed, maintained, and operated to collect and remove leachate from the surface impoundment during the active life and post closure care period. The collection and removal system must be designed so that no more than 30 cm (1 foot) of leachate will accumulate on the top synthetic liner at any one time.

(b) The leachate collection system between the liners must be designed, constructed, maintained, and operated to detect, collect, and remove liquids that may leak through the top synthetic liner during the active life and post closure care period and meet the specifications for the action leakage rate approved for the impoundment in accordance with 40 C.F.R. § 264.222.

The requirements for the leachate detection, collection, and removal system are satisfied by installation of a system that is, at a minimum:

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

- (ii) Constructed of granular drainage material with a hydraulic conductivity of  $1 \times 10^{-1}$  cm/sec or more and a thickness of 12 inches or more; or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-4}$  m<sup>2</sup>/sec or more;
  - (iii) Constructed of materials that are chemically resistant to the waste managed in the surface impoundment and the leachate expected to be generated and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the surface impoundment;
  - (iv) Designed and operated to function without clogging during the active life and post-closure care period; and
  - (v) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s) and each sump and removal system must provide a method for measuring and recording the volume of liquids present and removed.
- (7) Dikes must be designed with sufficient structural integrity to prevent failure when saturated, without dependence on any liner system for support.
- (8) Earthen dikes must have a protective cover such as grass, shale or rock to minimize wind and water erosion and to preserve their structural integrity.
- (9) Run-on must be diverted away from the surface impoundment.
- (10) —At least two feet of freeboard must be assured at all times.
- (11) —An automatic shutoff or automatic diversion system must be installed in the waste feed so that flow of waste into the impoundment will stop when there is less than 2 feet of freeboard or any failure of the base or liners.
- (12) —An automatic alarm system to alert the operator to abnormal operations and to malfunctions must be installed.
- (13) —A backup containment system must be provided to contain 20% of the volume of the impoundment or 4 hours maximum flow from the influent pipe(s), whichever is the larger amount.
- (14) —The applicant must evaluate the earthquake risk and must demonstrate that the facility is designed so that any disruption due to earthquake will not cause any performance standard to be violated.
- (15) —The applicant must evaluate the compaction and settlement beneath the liners and must demonstrate that the liners will not crack or rupture under full potential load. The applicant must comply with the construction quality assurance program requirements of Section 6(C)(7) of this Chapter and 40 C.F.R. § 264.19, including quality assurance of construction design, structural stability and integrity of all components.

- (16) ~~A~~ ground water monitoring system which meets the requirements of Section 8(D) of this ~~Chapter~~rule must be operational before any waste is placed in the impoundment.
- (17) ~~Fugitive~~ emissions, including volatile organic compounds, from the surface impoundment, must be controlled in accordance with a plan approved by the Board.
- (18) ~~Requirements other or less stringent than those established by Section 9(B)(1)-(13) above of this Chapter~~ may be imposed on a surface impoundment which is interimly licensed and being used for handling hazardous waste on the effective date of this ~~Chapter~~rule, if the applicant demonstrates to the Board's satisfaction that the surface impoundment has not in the past violated the performance standards established herein and that the risk that it will violate the performance standards is no greater than that risk for a surface impoundment which meets the above requirements.

### C. Operation

- (1) A surface impoundment must have at all times sufficient freeboard to prevent overtopping by overflowing, wave action or a storm. ~~At no all times, shall there~~ must not be less than 2 feet of such freeboard.
- (2) Leachate must be removed from the leachate collection system either continuously or with sufficient regularity that no hydraulic head builds up within it.
- (a) An action leakage rate, representing the maximum design flow rate that the leak detection system can remove without fluid head on the bottom liner exceeding one foot, must be identified.
- (b) Liquids removed from the leachate collection system must be recorded weekly and converted to an average daily flow rate in gallons per acre per day at each sump where liquid is removed and used to determine exceedances of the action leakage rate.
- (a)(c) Owners or operators must have an approved response action plan specifying response actions to be taken in the event the action leakage rate has been exceeded. The response action plan must comply with Section 9(D) of this Chapter and 40 C.F.R. § 264.223.
- (3) Earthen dikes must be kept free of perennial woody plants and burrowing animals and maintained ~~so as to~~ prevent any erosion of the dikes.
- (4) The owner and operator must comply with the provisions of 40 C.F.R. §§ 264.229 - 264.231 except that the references to sections of 40 C.F.R. Part 261 shall mean the applicable sections of 06-096 C.M.R. ch. 850, references to 40 C.F.R. Part 268 shall mean the applicable sections of 06-096 C.M.R. ch. 852, and references to 40 C.F.R. § 264.17(b) shall mean Section 6(C)(8) of this Chapter.
- (5) The owner and operator must comply with the air emission standards of 40 C.F.R. § 264.232.

### D. Containment System Repairs: Contingency Plans

- (1) Whenever there is any indication of a possible failure of the base, liner, dike, leachate collection system or backup containment system, that part or system must be inspected in accordance

- with the requirements of Section 9(D)(4) ~~below of this Chapter~~. Indications of possible failure include:
- (a) ~~A~~an unplanned non-sudden drop in liquid level in the impoundment;
  - (b) ~~L~~iquid detected in the leachate detection system above the quantity to be expected from the design permeability of the liner or an exceedance of the action leakage rate;
  - (c) ~~E~~evidence of leakage or the potential for leakage in the dike;
  - (d) ~~E~~rosion of the dike;
  - (e) ~~A~~pparent or potential deterioration of the liner(s) based on observation or test samples of the liner materials;
  - (f) ~~A~~ny mishandling of wastes placed in the impoundment; and
  - (g) ~~F~~oreign objects in the impoundment.
- (2) Whenever there is an indication of a failure of the base, liner, dike or leachate collection system, the surface impoundment must be removed from service. Indications of failure of the containment system include but are not limited to:
- (a) ~~A~~an unplanned sudden drop in liquid level in the impoundment;
  - (b) ~~Q~~uantities of waste detected in the leachate detection system in excess of three times the normal daily quantities or an exceedance of the action leakage rate;
  - (c) ~~L~~eakage through the dike; or
  - (d) ~~A~~a breach (e.g., a hole, tear, crack, or separation) in the base, liner, dike, leachate collection or backup containment system.
- (3) If the surface impoundment must be removed from service the owner or operator must:
- (a) ~~I~~mmEDIATELY shut off the flow of or stop the addition of wastes into the impoundment;
  - (b) ~~I~~mmEDIATELY contain any leakage which has occurred or is occurring;
  - (c) ~~I~~mmEDIATELY stop any leakage; and
  - (d) ~~I~~f the leak cannot be stopped by any other means, empty the impoundment into secure containers or the backup containment system.
  - (e) Take any other steps necessary to stop or prevent catastrophic failure.
  - (f) Notify the Department of the problem verbally within 24 hours and in writing within seven days after detecting the problem.

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NOTE: To report this situation, call the Department response phone number, 1-800-482-0777.



- (4) The owner or operator must include as part of the contingency plan that is required to be filed with ~~the~~his application:
- (a) ~~A~~a procedure for complying with the requirements of Section 9(D)(3) above; and
  - (b) ~~A~~a method for base, liner, dike, leachate collection and backup containment system evaluation and repair including:
    - (i) ~~t~~Testing and monitoring techniques;
    - (ii) ~~p~~Procedures to be followed to evaluate the integrity of the base, liner, dike, leachate collection system and backup containment system in the event of a possible failure;
    - (iii) ~~a~~Actions to be taken in the event of a possible failure; and
    - (iv) ~~s~~Specification of the repair techniques to be used in the event of leakage which does not require the impoundment to be removed from service.
- (5) No surface impoundment that has been removed from service in accordance with Section 9(D)(3) ~~above of this Chapter~~ may be restored to service unless:
- (a) ~~R~~Repairs have been made; and
  - (b) ~~R~~Repairs have been certified by a qualified Maine licensed professional engineer to ensure that the failure will not recur.
- (6) A surface impoundment which has been removed from service and which is not being repaired must be closed in accordance with the closure and post-closure requirements of this Chapter~~rule~~.

**E. Inspection, Surveying and Recordkeeping.** ~~The facility must comply with the provisions of 40 CFR C.F.R. § 264.226 and 40 CFR 264.229-264.231 are hereby adopted and incorporated by reference, provided however, except that the reference to "40 CFR C.F.R. § 264.221(a)" shall be deleted. , references to sections of 40 CFR Part 261 shall mean Chapter 850, and references to "40 CFR 264.17(b)" shall mean "Section 6(C)(7) above."~~ Furthermore, the following requirements shall apply:

- (1) The owner or operator of a surface impoundment must inspect:
  - (a) ~~T~~The freeboard level at least daily to ensure that two feet of freeboard is being maintained; and
  - (b) ~~T~~The surface impoundment area, including dikes and vegetation thereon, at least weekly to check for any leaks or discharges and for signs of erosion, deterioration or failure of the impoundment.
- (2) Where insufficient freeboard is noted, remedial action must be taken at once.
- (3) The owner or operator must maintain, and keep current for as long as the facility is operated, a record of all hazardous waste handled in the impoundment by type, volume and date, all

methods and times of treatment, all inspections and all records of repair, accidents and abatement measures taken. The record must be kept at the facility during its operating life and upon closure must be delivered to the Department. The Department may require that a current copy of that record be kept on file with the Department.

#### F. Air, Ground Water and Surface Water Monitoring

- (1) Emissions, including fugitive emissions, from the facility ~~must~~ shall be monitored in accordance with Section 8(F) of this ~~rule~~Chapter.
- (2) Ground water ~~must~~ shall be monitored in accordance with Section 8(D) of this ~~Chapter~~rule.
- (3) The Board ~~or Department~~ may require surface waters within or adjacent to a facility or facility property to be monitored in accordance with a plan approved by the Board ~~or Department~~, as applicable.

#### G. Closure and Post-Closure

- (1) The owner or operator of a surface impoundment that does not meet the liner requirements of Section 9(B) of this Chapter 854 shall:
  - (a) ~~Include~~ in the closure plan for the surface impoundment both a plan for complying with ~~paragraph Section 9(G)(2) below of this Chapter~~ and a contingency plan for complying with ~~paragraph Section 9(G)(3) below of this Chapter~~ in case not all contaminated subsoils can be practicably removed at closure;
  - (b) ~~Prepare~~ a contingency post-closure plan for complying with ~~paragraph Section 9(G)(3) below of this Chapter~~ in case not all contaminated subsoils can be practicably removed at closure; and
  - (c) ~~Base~~ the cost estimates for closure and post-closure care required under ~~subSection 6(C)(165) above of this Chapter~~ on the cost of complying with the more expensive of the two closure and post-closure scenarios.
- (2) The owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless 06-096 C.M.R. ch. 850, §Section 3(A)(3)(d) of Chapter 850 applies; or
- (3) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures and equipment as required in Section 9(G)(2) of this Chapter~~paragraph (2) above~~, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, ~~he must close~~ the facility must be closed in accordance with the closure and post-closure requirements that apply to landfills in Section 8(H) of this Chapter and with the requirements of 40 C.F.R. § 264.228(b).
- (4) After closure, hazardous waste surface impoundments must continue to meet the performance standards.

- (5) The Department may grant a variance to ~~paragraph~~ Section 9(G)(2) of this ~~Chapter~~ subsection if the owner or operator demonstrates that the hazardous constituents in the waste will not migrate into ground water, surface water and air in violation of the performance standards in this Chapter for as long as the waste and other materials will remain on-site. Facilities receiving a variance to Section 9(G)(2) of this Chapter ~~paragraph (2)~~ shall close the facility in accordance with the closure and post-closure requirements that apply to landfills.

## 10. Additional Standards Applicable to Hazardous Waste Land Treatment Facilities

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NOTE: The management of hazardous waste utilizing land treatment is a technique ~~still in its infancy and in which~~ many unknowns remain regarding its efficacy. The Board, consequently, will consider approving applications for such treatment only if there is compelling evidence provided by the applicant that the waste in question can and will be rendered nonhazardous in natural soils under the proposed conditions.

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### A. Performance Standards

- (1) The land treatment of hazardous waste must meet the following performance standards:
- (a) A land treatment facility must be designed and operated to ensure that hazardous waste placed in or on the treatment zone will not migrate beyond the zone and will be degraded, transformed, or otherwise made nonhazardous within the treatment zone within six months from the date of waste placement.
- (b) ~~No~~ A land treated waste or constituent or derivative thereof ~~shall~~ must not appear in ground or surface waters at a concentration above background level, or above current public health drinking water standards for Maine, including the “Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016” ~~Maximum Exposure Guidelines~~, or standards for aquatic toxicity, whichever is most stringent. Background levels ~~must~~ shall be those established by ~~the pre-construction analysis required by Chapter 06-096 C.M.R. ch. 856, §Section 10(C)(10H)(g) prior to treatment or construction related to the treatment unit or of the upgradient monitoring well required by Section 8(D)(1) of this Chapter,~~ whichever is lower.

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NOTE: Drinking water and aquatic toxicity standards are obtained from current manuals including but not limited to: State of Maine Rules of the Department of Health and Human Services relating to Drinking Water; “Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016”; “Drinking Water and Health” published by the National Research Council ~~Academy of Sciences~~; “Suggested No-Adverse Response Levels (SNARLs)” as determined by the Environmental Protection Agency; “Ambient Water Quality Criteria” manuals, published by the Environmental Protection Agency.

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- (c) ~~No~~ A land treated waste or derivative or constituent thereof ~~shall~~ must not appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed current ambient air quality standards for Maine at any time. Background levels ~~must~~ shall be established by monitoring or demonstrated to have been previously established by monitoring.

- (2) An applicant seeking a license to land treat hazardous waste must demonstrate to the satisfaction of the Board that:
  - (a) The waste will be rendered nonhazardous using the processes or methods proposed;
  - (b) The design measures and operating procedures will maximize the success of the treatment;
  - (c) The facility design and components including the soils, are compatible with the hazardous waste and the treatment process; and
  - (d) The treatment process can and will be controlled at all times so as to prevent any uncontrolled releases of hazardous waste or its constituents or derivatives and to protect the public health and safety and the environment.

### B. Design

- (1) The performance standards can be met by a variety of methods, including but not limited to:
  - (a) Proper siting of the facility on suitable soils, and with suitable subsoil deposits, and under suitable hydrologic conditions;
  - (b) Appropriate application of the waste, together with nutrients, soil buffers, and special bacterial strains as necessary;
  - (c) Cultivation and aeration of the waste/soil layer as necessary;
  - (d) Collection and treatment of runoff.
- (2) Demonstration that the performance standards will be met must be by small-scale pilot studies in which each waste has been rendered nonhazardous in less than six months. Such a demonstration must comply with 06-096 C.M.R. ch. Chapter 856, §Section 10(G).
- (3) Surface slopes of an active portion of a land treatment facility must not be greater than 5 percent ~~so as to~~ minimize erosion, but must be greater than 0 percent ~~so as to~~ prevent ponding for periods that will cause the treated area to become anaerobic.
- (4) The distance from any natural soils barrier to the seasonal high water table at the site must be at least 5 feet.
- (5) Fugitive emissions, including volatile organic compounds, from the land treatment facility must be controlled in accordance with a plan approved by the Board.
- (6) The facility must comply with the requirements of 40 CFR C.F.R. §§ 264.271-264.273, are hereby adopted and incorporated by reference, provided however, except that references to 40 CFR C.F.R. § 264.278 shall mean subSection 10(D) below of this Chapter, references to Part 261 shall mean Chapter 06-096 C.M.R. ch. 850, and references to sections of 40 CFR C.F.R. Part § 270 shall mean Chapter 06-096 C.M.R. ch. 856.

### C. Operation

- (1) Hazardous waste ~~must~~ shall not be land treated unless the waste will be made nonhazardous by soil-related biological degradation or chemical reaction within six months from the date of application of the waste to the treatment area.
- (2) Incompatible wastes must not be treated upslope or downslope of one another, nor placed in the same treatment area.
- (3) Run-off from active portions of a land treatment facility must be diverted and collected. If the runoff is hazardous, it must be handled as a hazardous waste.
- (4) Waste ~~must~~ shall not be applied to the soil when it is saturated or snow covered, or when the soil surface or subsurface is frozen.
- (5) Wells (other than active monitoring wells) and other direct connections to the subsurface environment within the treatment area of the land treatment facility or within 100 feet therefrom, ~~must~~ shall be sealed with cement grout or another suitable material prior to any land treatment activity.
- (6) ~~The facility must comply with the provisions of 40 CFR C.F.R. § 264.276, are hereby adopted and incorporated by reference, provided however, except~~ that references to 40 CFR C.F.R. Part § 261 shall mean Chapter 06-096 C.M.R. ch. 850. In addition, food chain crops must not be grown on a treated area or within 300 feet of a treated area of a land treatment facility unless the owner or operator demonstrates to the Board that hazardous waste(s) treated thereon:
  - (a) Will not be transferred to the food portion of the crop by plant uptake or direct contact and will not otherwise be ingested by food chain animals, or
  - (b) Will not occur in greater concentrations in the crops grown on or within 300 feet of the treatment area than in the same crops grown on untreated soils under similar conditions elsewhere in the same region.
- (7) Waste application and incorporation practices ~~must~~ shall prevent the zone of incorporation from becoming anaerobic.
- (8) The pH of the soil-waste mixture in the zone of incorporation ~~must~~ shall be equal to or greater than 6.5 and maintained until the facility is closed.
- (9) Supplemental nitrogen and phosphorous added to the soil of the treated area for the purpose of increasing the rate of waste biodegradation ~~must~~ shall not exceed the rates of application recommended for agricultural purposes by the United States Department of Agriculture (USDA) or the Maine State Department of Agriculture, Conservation and Forestry (DOA).
- (10) ~~The facility must comply with the provisions of 40 CFR C.F.R. §§ 264.281-264.283 are hereby adopted and incorporated by reference, provided however, except~~ that references to 40 CFR C.F.R. §§ 261.21 or and 261.23 shall mean "Chapter 06-096 C.M.R. ch. 850", and references to 40 CFR C.F.R. § 264.17(b) shall mean "Section 6(C)(87) above of this Chapter" and references to 40 C.F.R. Part 268 shall mean 06-096 C.M.R. ch. 852.

**D. Air, Ground Water, Surface Water and Soil Monitoring.** The facility must comply with the provisions of 40 CFR C.F.R. § 264.278 are hereby adopted and incorporated by reference, provided

~~however, except~~ that references to 40 ~~CFR~~C.F.R. § 264.271(b) shall refer to mean Section 10(B)(6) ~~above of this Chapter.~~

- (1) An unsaturated zone monitoring system must be operational before the placement of waste on the land. The system must:
  - (a) Detect the vertical migration of hazardous waste(s) and constituents thereof beneath the treatment area of the facility, and
  - (b) Provide information on the background concentrations of the hazardous waste(s) and constituents thereof in similar but untreated soils nearby (at least 300 feet from the active treatment zone), and
  - (c) Monitor soils using soil cores, and
  - (d) Monitor soil-pore water using devices such as lysimeters.

The system must be approved by the Department prior to licensing.

- (2) A ground water monitoring system, in accordance with Section 8(D) of this ~~Chapter~~rule, must be operational prior to the placement of waste on the land.
- (3) The Board or the Department may require surface waters within or adjacent to a facility or facility property to be monitored in accordance with a plan approved by the Board or Department, as applicable.
- (4) Emissions, including fugitive emissions, from the facility must be monitored in accordance with Section 8(F) of this ~~Chapter~~rule.

**E. Surveying and Recordkeeping.** The owner or operator of a land treatment facility must maintain and keep current, in the facility operating record for as long as the facility is operated, a record of types and quantities of hazardous waste-(s) treated, application dates, rates, and location, repairs, accidents and abatement measures taken within the treatment facility for the entire life of the facility. The Department may require that a current copy of that record be kept on file with the Department. Upon facility closure, such records ~~must~~shall be delivered to the Department.

**F. Special Closure Requirement.** The facility must comply with the provisions of 40 CFRC.F.R. § 264.280 ~~are hereby adopted and incorporated by reference, provided however, except~~ that references to other sections of 40 ~~CFR~~C.F.R. Part 264 shall mean "this Chapter".

## 11. Additional Standards Applicable to Hazardous Waste Piles

**A. Performance Standards.** A waste pile must be established, constructed, altered and operated to meet the following performance standards:

- (1) A waste pile must be designed and operated such that there is no migration of wastes out of the pile into adjacent subsurface soil or ground water or surface water at any time and that any particulate matter which may be subject to wind dispersal is controlled at all times.
- (2) ~~No~~A hazardous waste or constituent or derivative thereof ~~must not~~shall appear in ground or surface waters at a concentration above background level, or above current public health

drinking water standards for Maine, including the “Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016” ~~Maximum Exposure Guidelines~~, or standards for aquatic toxicity, whichever is most stringent. Background levels ~~must~~ be those established by the pre-construction analysis required by ~~Chapter 06-096 C.M.R. ch. 856, §Section~~ 10(C)(11)(g) or of the upgradient monitoring well required by Section 8(D)(1) of this ~~Chapter~~, whichever is lower.

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NOTE: Drinking water and aquatic toxicity standards are obtained from current manuals including but not limited to: State of Maine Rules of the Department of Health and Human Services relating to Drinking Water; “Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016”; "Drinking Water and Health" published by the National Research Council Academy of Sciences; "Suggested No-Adverse Response Levels (SNARLs)" as determined by the Environmental Protection Agency; "Ambient Water Quality Criteria" manuals, published by the Environmental Protection Agency.

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- (3) ~~No~~ A hazardous waste or constituent or derivative thereof ~~must not~~ appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed current ambient air quality standards for Maine at any time. Background levels ~~must~~ be established by monitoring or demonstrated to have been previously established by monitoring.
- (4) No hazardous waste may be treated in a waste pile.

## B. Design and Operating Requirements

- (1) ~~(1)~~ The facility must comply with the provisions of 40 C.F.R. §§ 264.251(c), 264.251(g)-(k), 264.252, 264.253 and 264.259 are hereby adopted and incorporated by reference. A natural clay liner meeting the design and operation requirements of Section 8B(2) or a synthetic liner which meets the design and operation requirements of Section 8B(4), (5), (6) and (7) must underlie the waste pile. The liner must be intact beneath the waste pile and must be constructed with a raised berm around the entire waste pile. All new, replacement or expanded portions of existing waste piles established in the State of Maine must be at least double-lined. The facility must comply with the construction quality assurance program requirements of Section 6(C)(7) of this Chapter and 40 C.F.R. § 264.19, including quality assurance of construction design, structural stability and integrity of all components.
- (2) A waste pile must have at least two impervious liners of or equivalent to:
- (a) A synthetic top liner (e.g., a geomembrane), which is underneath the waste and designed and constructed of materials to prevent the migration of hazardous constituents into such liner; and
  - (b) A composite bottom liner, which is underneath the top synthetic liner and overtop the subsoils and consists of two components, including a synthetic upper component (e.g., geomembrane) designed and constructed of materials to prevent the migration of hazardous constituents into this component during the active life and post-closure care period and a lower component of recompacted clay of a minimum of ten (10) feet thick, with a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less.
- (3) The liner system in contact with the waste must be:

- (a) Compatible with the waste;
  - (b) Sufficiently impermeable to the waste under maximum operating conditions of hydraulic head so that the leachate system would not be filled in a period of less than one year;
  - (c) Of sufficient strength to outlast the design lifetime of the waste pile; and
  - (d) Constructed on a foundation capable of supporting the liner and the pressure head of the waste pile when full.
- (4) A leachate detection, collection, and removal system must be installed immediately above the top liner to assure that leachate is collected and removed. In addition, a leachate detection, collection and removal system must be installed between the top and bottom liners.
- (5) The leachate collection system must be constructed such that:
- (a) The system immediately above the top synthetic liner must be designed, constructed, maintained, and operated to collect and remove leachate from the waste pile during the active life and post closure care period. The collection and removal system must be designed so that no more than 30 cm (1 foot) of leachate will accumulate on the top synthetic liner at any one time.
  - (b) The leachate collection system between the liners must be designed, constructed, maintained, and operated to detect, collect, and remove liquids that may leak through the topline during the active life and post closure care period and meet the specifications for the action leakage rate approved for the waste pile in accordance with 40 C.F.R. § 264.252.

The requirements for the leachate detection, collection, and removal system are satisfied by installation of a system that is, at a minimum:

- (i) Constructed with a bottom slope of one percent or more;
- (ii) Constructed of granular drainage material with a hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec or more and a thickness of 12 inches or more; or constructed of synthetic or geonet drainage materials with a transmissivity of  $3 \times 10^{-5}$  m<sup>2</sup>/sec or more;
- (iii) Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and by any equipment used at the waste pile;
- (iv) Designed and operated to function without clogging during the active life and post-closure care period; and
- (v) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s) and each sump and removal system must provide a method for measuring and recording the volume of liquids present and removed.



- (6) Leachate must be removed from the leachate collection system either continuously or with sufficient regularity that no hydraulic head builds up within it.
- (a) An action leakage rate, representing the maximum design flow rate that the leak detection system can remove without fluid head on the bottom liner exceeding one foot, must be identified.
- (b) Liquids removed from the leachate collection system must be recorded weekly and converted to an average daily flow rate in gallons per acre per day at each sump where liquid is removed and used to determine exceedances of the action leakage rate.
- (c) Owners or operators must have an approved response action plan specifying response actions to be taken in the event the action leakage rate has been exceeded. The response action plan must comply with 40 C.F.R. § 264.253.
- (72) No ignitable or reactive wastes may be stored in a waste pile.
- (83) Storage of incompatible wastes in a waste pile must be in accordance with the requirements of 40 ~~CFRC.F.R.~~ § 264.257, ~~which is hereby adopted and incorporated by reference, provided, however, except~~ that the references 40 ~~CFRC.F.R.~~ § 264.17(b) shall mean "Section 6(C)(87) ~~above of this Chapter~~".
- (94) No waste may remain in a pile for longer than 180 days.
- (105) ~~—~~Fugitive emissions from the waste pile must be controlled in accordance with a plan approved by the Board.

### C. Monitoring

- (1) Monitoring of the structure of the waste pile during construction and operation ~~must~~ shall meet the requirements of 40 ~~CFRC.F.R.~~ § 264.254, ~~which is hereby adopted and incorporated by reference, provided however, except~~ that the reference to 40 ~~CFRC.F.R.~~ § 264.251(a) shall mean "~~sub~~Section 11(B)(1) ~~above of this Chapter~~".
- (2) Ground water ~~must~~ shall be monitored in accordance with Section 8(D) of this ~~rule~~ Chapter.
- (3) Emissions, including fugitive emissions, from the facility ~~must~~ shall be monitored in accordance with Section 8(F) of this ~~rule~~ Chapter.
- (4) The Board ~~or Department~~ may require surface waters within or adjacent to a facility or facility property to be monitored in accordance with a plan approved by the Board ~~or Department~~, as applicable.

- D. Closure Requirements.** The facility must comply with the provisions of 40 ~~CFRC.F.R.~~ § 264.258, ~~are hereby adopted and incorporated by reference provided however, except~~ that references to ~~S~~sections of 40 ~~CFRC.F.R.~~ Part 261 shall mean "Chapter 06-096 C.M.R. ch. 850", and references to other sections or subparts of 40 ~~CFRC.F.R.~~ Part 264 shall mean "this Chapter".

## 12. Additional Standards Applicable to Hazardous Waste Tank and Container Storage Facilities

### A. Performance Standards

- (1) A hazardous waste storage facility must be established, constructed, altered and operated to meet the following performance standards:
  - (a) ~~No~~ A hazardous waste or derivative thereof ~~must not shall~~ escape from the facility to ground or surface waters or to adjacent subsurface soil at any time during the life of the facility.
  - (b) ~~No~~ A hazardous waste or constituent or derivative thereof ~~must not shall~~ appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed current ambient air quality standards for Maine at any time. Background levels ~~must shall~~ be established by monitoring or demonstrated to have been previously established by monitoring.
- (2) The storage of hazardous waste in an underground or inground tank is prohibited unless that tank is interimly-licensed under ~~Chapter 06-096 C.M.R. ch. 855~~ and in use on the effective date of this ~~Chapter~~rule and is not prohibited under Section 7(A)(3) of this Chapter.

### B. Design

- (1) The provisions of ~~40 C.F.R. §§ 264.175, 264.179, 264.190(a) and (b), 264.192, and 264.193(a)-(f)(3) and 264.193(i), and 264.200, as revised on September 2, 1988 (53 FR 34086), are hereby adopted and incorporated by reference, provided however, except that references to sections of 40 C.F.R. Part 270 shall mean "Chapter 06-096 C.M.R. ch. 856", and references to other sections or subparts of 40 C.F.R. Part § 264 shall mean "this Chapter".~~
- (2) A container storage facility must have a base which is a firm working surface, such as asphalt or concrete, which is impervious and which must be kept entire. ~~A natural clay liner meeting the design and operation requirements of Section 8B(2) or a synthetic liner which meets the design and operation requirements of Sections 8(B)(4), and 8(B)(5), (6) and (7) of this Chapter~~ must underlie the working surface. The liner must be intact beneath the storage facility and must be constructed with a raised berm around the entire storage facility. In addition, the liner is subject to, and must meet the requirements of, a construction quality assurance program in accordance with 40 C.F.R. § 264.19 as applicable to liner systems, including quality assurance of construction design, structural stability and integrity of all components.
- (3) An interimly licensed container storage facility for hazardous waste which is being used as such on the effective date of this ~~Chapter~~rule may be exempted from the requirement of a liner beneath the existing base if the applicant demonstrates to the Board's satisfaction that the facility has not in the past violated the performance standards established herein and that the facility design will provide full compliance with the performance standards at all times.
- (4) Each building or separate container storage area must have a containment and collection system the capacity of which must exceed 20% of the total capacity of all containers and tanks used to store wastes or 110% of the capacity of the largest container or tank, whichever is greater. This system must also provide for sufficient freeboard to allow for containment and collection of precipitation resulting from a 24-hour, 25-year storm, unless the storage facility is enclosed.

- (5) A tank must be designed and installed so that it can be fully inspected for structural integrity, deterioration, and leaks except that a tank whose base cannot be fully inspected must be designed and installed to meet the standards of 40 ~~CFRC.F.R.~~ § 264.193–(e)(3) for double-walled tanks.
- (6) Uncovered tanks must be designed to ensure at least 2 feet of freeboard at all times.
- (7) Overtopping of tanks during continuous feed must be prevented by a system of automatic shutoff or by automatic diversion of the waste feed into a tank having at least 30 percent of the volume of the primary tank.
- (8) A building or other structure used as a hazardous waste storage facility must meet all requirements, codes and standards of the Department of Public Safety (State Fire Marshal's Office).
- (9) The date of manufacture of a tank must be painted in a prominent location on the tank.

### C. Operation

- (1) A container must not be used for the storage of hazardous waste for a period of time exceeding the design life of the container.
- (2) ~~The facility must comply with the requirements of 40 CFRC.F.R. § 264.191 are hereby adopted and incorporated by reference, provided however, except that references to 40 CFRC.F.R. § 264.193 shall mean "Subsection 12(B) above of this Chapter", references to sections in 40 CFRC.F.R. Part 270 shall mean "Chapter 06-096 C.M.R. ch. 856", and references to 40 CFRC.F.R. Part § 264.196 shall mean "subSection 12(E) below of this Chapter."~~ In addition, any pipeline and pipeline valves that transfers hazardous waste to or from a tank used to store hazardous waste must be inspected and pressure tested at least annually or tested at least annually by a method approved by the Board or Department, to determine structural integrity. A pipeline that fails the test or a pipeline or tank that is determined as a result of the inspection to be unsafe ~~must shall~~ not thereafter be used to store or transfer hazardous waste. A tank, its piping and valves must be tested at least annually to determine the thickness and corrosion rate utilizing a method approved by the Board or Department. In addition, all piping valves must be internally inspected at least annually to determine fitness for use. The date of the most recent inspection and testing of a tank must be painted in a prominent location on the tank. Results of all tank and pipe testing ~~must shall~~ be submitted to the Department within 10 days of taking place.
- (3) An underground tank that is not prohibited by Section 12(A)(2) of this ~~rule Chapter~~ must be tested at least semi-annually by the method(s) recommended in *Rule for Underground Oil Storage Facilities, Chapter 06-096 C.M.R. ch. 691*. An underground tank that fails the test or leaks ~~must shall~~ be removed and may not be replaced. Underground hazardous waste storage systems (tanks and piping) with secondary containment, and continuous interstitial space monitoring, need not be tested annually except to ensure that the leak detection equipment is operating properly in accordance with the testing and calibration requirements of ~~Chapter 06-096 C.M.R. ch. 691, §Section 7(C)2 of the Regulations for Registration, Installation, Operation and Closure of Underground Oil Storage Facilities.~~

- (4) Hazardous waste must not be stored in containers or tanks which are rusted, bulging or leaking. The facility must comply with the container requirements of 40 C.F.R. § 264.171 ~~are hereby adopted and incorporated by reference~~ and the tank requirements of 40 C.F.R. § 264.191.
- (5) Containers or tanks must be compatible with the type of waste stored therein. The facility must comply with the requirements of 40 C.F.R. § 264.172 and 40 C.F.R. § 264.194(a) ~~are hereby adopted and incorporated by reference.~~
- (6) Containers or tanks used to store hazardous waste must not be used to store foodstuffs or animal feed or any substance likely to come into contact with foodstuffs or animal feed.
- (7) Containers or tanks holding incompatible hazardous wastes must not be stored in the same enclosure, building or structure unless they are segregated in a manner that prevents the wastes from coming into contact with one another under any circumstances, including leakage or failure of a container or tank. The facility must comply with the requirements of 40 C.F.R. §§ 264.177 and 264.199 ~~and adopted and incorporated by reference, provided however, except that the references to 40 C.F.R. § 264.17(b) shall mean "Section 6(C)(87)" above of this Chapter.~~
- (8) All hazardous waste containers must be stored in a manner that allows access for inspection and for remedial action if any container is found to be rusting, bulging or leaking or waste is spilled or discharged. In any event:
- (a) Containers with a capacity of 10 gallons or more must not be stacked in rows in excess of 4 wide and 2 high.
- (b) Aisle space between rows of containers must be at least 36 inches wide and sufficient to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of facility operation in any emergency ~~but in no event shall the aisle space be less than 36 inches wide.~~ Rows not exceeding a single container in width and two (2) high may be stacked adjacent to walls or other components of the storage facility.
- (9) Storage of hazardous waste in open containers or in open tanks not meeting the requirements of Section 12(B)(5)-(7) ~~above of this Chapter~~ is prohibited. The facility must comply with the requirements of 40 C.F.R. §§ 264.173, 264.179, and 264.194(b), and 264.194(c), and 264.200, ~~are hereby adopted and incorporated by reference provided, however, except that~~ references to 40 C.F.R. § 264.196 shall mean "subSection 12(E) below of this Chapter".
- (10) Wastes not already so labeled must, on arrival at the facility, be clearly and permanently labeled with the words "Hazardous Waste" and labeled to identify type of waste, generator and date of arrival.
- (11) For any hazardous waste stored for longer than 180 days, the owner or operator of the facility must:
- (a) Pay the fee as required by 38 M.R.S.A., ~~Section~~ 1319-I;
- (b) Prepare a written inventory of all wastes stored for 180 days and submit a copy to the Department on the 181st day, indicating when these wastes will be removed from storage for further handling and how they will be handled; and

(c) Segregate and label these wastes with the date of the 180th day.

(12) ~~–~~The storage of any hazardous waste for longer than 360 days is prohibited unless the owner or operator of a storage facility applies for, in writing, and receives approval to do so from the Commissioner. Any extension ~~must~~ shall be for a period of time not exceeding 90 days, after which a new extension may be requested. In seeking approval, the owner or operator must demonstrate the maintenance of a segregated area for such waste, the continuing integrity of containers or tanks, the quantification and control of fugitive emissions, continuing security and continuing efforts to move the waste out of storage to other handling. If an approval for storage for longer than 360 days is not granted or if any request for extension is denied, continued storage of that waste is a violation of the license of the facility and, in addition, constitutes unlicensed disposal of the waste.

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NOTE: For guidance on classifying residues of hazardous waste in empty tanks, refer to ~~Section 3(A)(7) of 06-096 C.M.R. ch. Chapter~~ 850, § 3(A)(7).

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(13) ~~–~~Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line. Tanks holding ignitable or reactive waste are subject to the requirements of 40 ~~CFRC.F.R. § 264.198, which are hereby adopted and incorporated by reference, provided, however, except~~ that references to 40 ~~CFRC.F.R. §§ 261.21 or 261.23~~ shall mean "~~Chapter 06-096 C.M.R. ch. 850~~" and references to 40 ~~CFRC.F.R. § 264.17(b)~~ shall mean "~~Section 6(C)(87) above of this Chapter.~~".

**D. Inspection, Surveying and Recordkeeping.** The facility must comply with the requirements of 40 ~~CFRC.F.R. §§ 264.174 and 264.195 are hereby adopted and incorporated by reference.~~ In addition:

(1) Daily inspections ~~must~~ shall be made to ensure that:

- (a) Two feet of freeboard is maintained at all times in uncovered tanks,
- (b) No containers, tanks, pipelines or valves are rusting, bulging or leaking.

(2) Weekly inspections ~~must~~ shall be made to ensure that:

- (a) The working surface and the containment and collection system are in good order and free from cracks and leaks.
- (b) All safety devices, valves, spill and overfill equipment and fire extinguishing equipment are structurally sound and properly functioning.

(3) Monthly inspections ~~must~~ shall be made to ensure that:

- (a) All tank welds, rivets, bolts, foundation supports for both tanks and piping are in good condition,
- (b) All sources of cathodic protection are tested and in good working order,
- (c) All pressure relief valves are functioning properly.

- (4) Every ten years, beginning on January 1, 1994, all aboveground vertical tanks with a capacity of 31,500 gallons or more must be inspected and deemed suitable for service in accordance with the standards published by the American Petroleum Institute (API) - #653.
- (5) The owner or operator of a hazardous waste storage facility must maintain and keep current a written record and/or diagram, as applicable, showing:
  - (a) The layout of the facility and where each type of hazardous waste is stored within the facility;
  - (b) The length of time each waste has been at the facility;
  - (c) Details of all inspections of and repairs to the base, liners and containment and collection systems;
  - (d) Details of all accidents and spills, including date and time of discharge or discovery and spill reporting, volume of spill and method of clean up;
  - (e) Dates of repair or removal of rusted, bulging or leaking containers.

—This record/diagram must be maintained at the facility during operation and closure and must be delivered to the Department upon closure. The Department may require that a current copy of that record be kept on file with the Department.

- (6) The results of annual tank and pipe testing must~~shall~~ be recorded at the facility.

#### **E. Repairs and Response to Leaks or Spills**

- (1) Breaks in the liner(s) must~~shall~~ be repaired immediately.
- (2) In the event any container is found to be rusted, bulging, leaking or otherwise unsafe, the wastes contained therein must~~shall~~ be transferred immediately to another container that does meet the standards provided in 49 ~~CFRC.F.R.~~ § 173. If the unsuitable container is repaired so that it meets the specifications in 49 ~~CFRC.F.R.~~ § 173, it may be reused.
- (3) The facility must comply with the requirements of 40 ~~CFRC.F.R.~~ § 264.196, are hereby adopted and incorporated by reference, provided however, except that references to other sections in 40 ~~CFRC.F.R.~~ Part 264 shall mean "this Chapter", and references to sections in 40 ~~CFRC.F.R.~~ Part 270 shall mean "Chapter 06-096 C.M.R. ch. 856."
- (4) The liquids must be removed from the containment structure of a storage facility which is not enclosed as soon as practicable, but in no case later than 24 hours or at another time approved by the Department after detection of the leak. Upon request by the owner or operator, the Department may extend the 24-hour time limit if the owner or operator demonstrates further removal is not necessary to prevent further harm to human health or the environment. An evaluation must~~shall~~ be performed as to whether such liquids are a hazardous waste prior to treatment or disposal of the liquids.

(5) If, at any time during operation, closure, or post-closure of the facility, the performance standards of this section are not being met, a corrective action program must be implemented, details of which must be specified or approved by the Department.

**F. Air, Ground Water and Surface Water Monitoring.** The Board or Department may require ground water, surface water and air quality monitoring in accordance with the requirements of Sections 8(D), 8(E), and 8(F) of this ~~rule-Chapter~~ if it determines that such monitoring is necessary to ensure protection of public health and safety or of the environment.

**G. Closure.** The facility must comply with the requirements of 40 ~~CFRC.F.R.~~ §§ 264.178 and 264.197, ~~are hereby adopted and incorporated by reference, provided however, except~~ that references to other sections of subparts of 40 ~~CFRC.F.R.~~ Part § 264 shall mean "this Chapter", and references to sections of 40 ~~CFRC.F.R.~~ Part 261 shall mean "~~Chapter 06-096 C.M.R. ch. 850~~", and ~~no a variance under 40 CFRC.F.R. § 264.193(g) shall be is not~~ allowed.

### 13. Additional Standards Applicable to Hazardous Waste Incinerators

#### A. Applicability

(1) Principal hazardous constituents (PHCs) and hazardous combustion by-products must be treated to the extent required by the performance standards specified in Section 13(B) of this Chapter below. For each waste feed to be burned, one or more PHCs and hazardous combustion by-products will be specified from among those constituents listed in Appendix VIII of ~~Chapter 06-096 C.M.R. ch. 850~~. This specification will be based on the degree of difficulty of incineration of the hazardous constituents of the waste feed and its combustion by-products, their concentration or mass, considering the results of waste analyses and trial burns or alternative data submitted with the facility's license application. Hazardous constituents or by-products which represent the greatest degree of difficulty of incineration will be those most likely to be designated as PHCs or hazardous combustion by-products. Constituents are more likely to be designated as PHCs or hazardous combustion by-products if they are present in large quantities or concentrations. Trial PHCs will be designated for performance of trial burns in accordance with the procedure specified in 06-096 C.M.R. ch. 856 and 40 ~~CFRC.F.R.~~ § 270.62 (or and Chapter 856 of those rules) for obtaining a trial burn permits. Trial hazardous combustion by-products will be designated under the same procedure.

#### (2) Integration of the MACT standards:

(a) The performance standards of Section 13(B)(2) – (8) of this Chapter no longer apply when an owner or operator of a hazardous waste incinerator demonstrates compliance with the maximum achievable control technology (MACT) requirements of 40 C.F.R. Part 63, Subpart EEE. Compliance shall be demonstrated by conducting a comprehensive performance test and submitting a notification of compliance under 40 C.F.R. §§ 63.1207(j) and 63.1210(d). Permit conditions of an existing incinerator that were based on the standards of Section 13 of this Chapter will continue to be in effect until they are removed from the permit or the permit is terminated or revoked, unless the permit expressly provides otherwise.

(b) The MACT standards do not replace the closure requirements of Section 13(E) of this Chapter or the applicable general standards of Section 6 of this Chapter.

(c) For incinerators that elect to comply with the alternative to the particulate matter standards under 40 C.F.R. §§ 63.1206(b)(14) and 63.1219(e), the particulate matter standard of Section 13(B)(5) of this Chapter remains in effect.

**B. Performance Standards.** A hazardous waste incinerator must be established, constructed, altered, operated and maintained to meet the following performance standards:

- (1) ~~No~~A hazardous waste or constituent or derivative thereof ~~must not~~shall appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed ambient air quality standards for Maine at any time. Background levels ~~must~~shall be established by monitoring or demonstrated to have been previously established by monitoring.
- (2) An incinerator burning hazardous waste must achieve a Destruction Removal Efficiency (DRE) of 99.99 percent or greater (except as noted in Section 13(B)(3) below of this Chapter) for each Principal Hazardous Constituent (PHC) designated in its license for each waste stream to be burned. The following equation is used to determine the DRE for each PHC:

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

Where:  $W_{in}$  = Mass feed rate of one PHC in the waste stream feeding the incinerator; and  
 $W_{out}$  = Mass emission rate of the same PHC present in exhaust emissions prior to release to the atmosphere.

- (3) An incinerator burning hazardous wastes F020, F021, F022, F023, F026, or F027 must achieve a destruction and removal efficiency (DRE) of 99.9999% for each principal hazardous constituent (PHC) designated in its license. This performance must be demonstrated on PHCs that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. In addition, the owner or operator of the incinerator ~~must~~shall ~~notify~~receive the approval of the Board of his intent as part of its license to incinerate hazardous wastes F020, F021, F022, F023, F026 or F027.
- (4) An incinerator burning hazardous waste containing more than 0.5% halogens must remove at least 99% of the hydrogen halides from the exhaust gas. The stack emissions of hydrogen chlorides from any hazardous waste incinerator ~~must~~shall not exceed 50 parts per million (ppm) by volume, adjusted to 7% oxygen by volume.
- (5) An incinerator burning hazardous waste must not emit particulate matter exceeding 180 milligrams per dry standard cubic meter (0.08 grams per dry cubic foot) when corrected for 7% oxygen. Tests may be required, if applicable, using the procedures specified by 40 C.F.R. §§ 60.50 through 60.54 Subpart E (Clean Air Act Regulations (Subpart E, "Standards for Performance of Incinerators")) and Part 60, appendix A (Method 3).

(a) Oxygen Correction.

(1) Measured pollutant levels must be corrected for the amount of oxygen in the stack gas according to the formula:

$$P_c = P_m \times 14 / (E - Y)$$



Where:  $P_c$  is the corrected concentration of the pollutant in the stack gas,  $P_m$  is the measured concentration of the pollutant in the stack gas,  $E$  is the oxygen concentration on a dry basis in the combustion air fed to the device, and  $Y$  is the measured oxygen concentration on a dry basis in the stack.

- (2) For devices that feed normal combustion air,  $E$  will equal 21 percent. For devices that feed oxygen-enriched air for combustion (that is, air with an oxygen concentration exceeding 21 percent), the value of  $E$  will be the concentration of oxygen in the enriched air.
- (3) Compliance with all emission standards provided by this section must be based on correcting to 7 percent oxygen using this procedure.
- (6) ~~No~~ Heavy metals ~~must not~~ ~~shall~~ appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed ambient air quality standards for Maine at any time. Background levels ~~must~~ ~~shall~~ be established by monitoring or demonstrated to have been previously established by monitoring.
- (7) An incinerator must destroy hazardous combustion by-products designated in its license such that the total mass emission rate of these by-products emitted from the stack is 0.01 ~~1~~1% or less of the total mass feed rate of PHCs fed into the incinerator.
- (8) All combustion residues, such as fly ash, must be handled in accordance with all Federal and State statutory and regulatory requirements for their handling.

### C. Operation

- (1) An incinerator must be operated in accordance with operating requirements specified in the license. These will be specified on a case-by-case basis as those demonstrated (in a trial burn or in alternative data) to be sufficient to maintain compliance with the performance standards of Section 13B above.
- (2) 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 standards to which the operating requirements apply). For each such waste feed, the license will specify acceptable operating limits including the following conditions:
- Carbon monoxide (CO) level in the stack exhaust gas;
  - Waste feed rate;
  - Combustion temperature;
  - An appropriate indicator of combustion gas velocity;
  - Air feed rate;
  - Such other operating requirements as are necessary to ensure that the performance standards are met.

- (3) During start-up and shut-down of an incinerator, hazardous waste must not be fed into the incinerator unless the incinerator is operating within the conditions of operation (temperature, air feed rate, etc.) specified in the license.
- (4) Fugitive emissions from the combustion zone must be controlled by:
  - (a) Keeping the combustion zone totally sealed against fugitive emissions; or
  - (b) Maintaining a combustion zone pressure lower than atmospheric pressure; or
  - (c) An alternate means of control demonstrated (as part of the permit application) to provide fugitive emissions control equivalent to maintenance of combustion zone pressure lower than atmospheric pressure.
- (5) An incinerator must be operated with a functioning system designed to automatically cut off waste feed to the incinerator when operating conditions deviate from limits established under this section.
- (6) An incinerator must cease operation when changes in waste feed, incinerator design or operating conditions exceed limits designated in its license.
- (7) All hazardous waste incinerators in which halogenated wastes are burned must maintain, at a minimum, a combustion temperature of 1,000° C for a 2 second dwell time with 3% excess oxygen in the stack gas or 1,200° C for a 1.5 second dwell time with 2% excess oxygen in stack gas or an equivalent standard. More stringent operating requirements may be required by the Board, depending upon the waste involved, if it is determined by the Board to be necessary to protect the public health and safety or the environment.
- (8) Hazardous waste incinerators which burn only non-halogenated wastes must maintain a combustion temperature of not less than 885° C. Specific combustion temperatures will be established in the license and will depend on the type of non-halogenated waste, its physical condition and the rate at which it is added to the normal fuel feedstock.

#### **D. Monitoring, Inspections, and Recordkeeping**

- (1) The owner or operator must conduct waste analyses sufficient to verify that all waste feed to the incinerator is within the limits specified in its license.
- (2) The owner or operator must monitor stack emissions to verify that the operating requirements established in the license achieve the performance standards.
- (3) The owner or operator must monitor on a continuous basis:
  - (a) Combustion temperature, waste feed rate, combustion gas velocity and air feed rate;
  - (b) CO, at a point in the incinerator downstream of the combustion zone and prior to release to the atmosphere;

- (c) Such other parameters, such as CO, CO<sub>2</sub>, O<sub>2</sub>, total hydrocarbons, and opacity, that the Board determines to be necessary to be monitored at the stack or at other locations in order to demonstrate compliance with the standards and requirements of this ~~Chapter rule~~ at all times.
- (4) The incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be subjected to thorough visual inspection, at least daily, for leaks, spills, fugitive emissions and signs of tampering.
- (5) The emergency waste feed cutoff system and associated alarms must be inspected daily and tested at least weekly to verify operability.
- (6) The owner or operator of an incinerator must maintain and keep current for as long as the facility is operated a record of the types and quantities of hazardous waste incinerated, dates of incineration, repairs, accidents or uncontrolled releases and any abatement measures taken.
- (7) The monitoring and inspection data must be recorded and all records must be placed in the operating log required by Section 6(C)(109) of this ~~Chapter rule~~. The Department may require that a current copy of those records be kept on file with the Department. Upon closure, the operating log must be delivered to the Department.
- E. Closure.** At closure, the owner or operator must remove all hazardous waste and residues (including, but not limited to, ash, scrubber waters, and scrubbers sludges) from the incinerator site.

#### 14. Additional Standards for Treatment in Tanks

##### A. Performance Standards

- (1) Facilities for treatment of hazardous waste in tanks must be constructed, altered and operated to meet the following performance standards:
- (a) ~~No~~A hazardous waste or constituent or derivative thereof ~~must not~~shall escape from the treatment facility to ground or surface waters or to adjacent subsurface soil at any time during the life of the facility.
- (b) ~~No~~A hazardous waste or constituent or derivative thereof ~~must not~~shall appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed current ambient air quality standards for Maine at any time.
- Background levels ~~must~~shall be established by monitoring or demonstrated to have been previously established by monitoring.
- (c) The treatment of hazardous waste in an underground tank is prohibited.
- (2) An applicant seeking a license to treat hazardous waste in a tank or tanks must demonstrate to the satisfaction of the Board that:
- (a) The waste is capable of being treated in a tank or tanks using the processes proposed, based upon a trial test (a bench or small-scale pilot test), that determines the treatment technique, its effectiveness, and any limiting factors;

- (b) The design measures and operating procedures will maximize the success of the treatment;
- (c) The facility design and components are compatible with the hazardous waste and the treatment process; and
- (d) The treatment process can and will be controlled at all times so as to prevent uncontrolled releases of hazardous waste or its constituents or derivatives and to protect the public health and safety and the environment.

**B. Design.** In addition to the requirements applicable to storage of hazardous waste in tanks under Section 12B, the following requirements apply to treatment in tanks:

- (1) Materials used in the construction and operation of all parts of the treatment facility must be compatible with the wastes to be treated and with any treatment chemicals or reagents utilized in the treatment process.
- (2) An alarm system to alert the operator to abnormal operations and to malfunctions must be installed prior to operation of the facility.
- (3) The facility must have sufficient excess capacity to hold all wastes undergoing treatment if an equipment malfunction or breakdown occurs during the treatment process. The wastes must be able to be held securely until the treatment equipment is repaired.
- (4) Fugitive emissions, including volatile organic compounds, from the facility must be controlled in accordance with a plan approved by the Board.

**C. Operation.** In addition to the requirements applicable to the storage of hazardous waste in tanks under Section 12(C) of this Chapter, the following requirements ~~shall~~ apply to treatment in tanks.

- (1) All hazardous waste must be analyzed immediately prior to treatment, in order to ensure that:
  - (a) The proper treatment technique, feed rates of treatment chemicals and reagents, and operating conditions (temperature, pressure, flow rate, etc.) are known and will be adhered to;
  - (b) The treatment technique proposed will not have any detrimental effect upon any of the materials used to construct or operate the treatment apparatus;
  - (c) The waste contains no components or contaminants which might interfere with or have an adverse impact on the treatment process;
  - (d) The waste contains no components or contaminants which, when treated, may cause an uncontrolled release of wastes or toxic gases or fumes;
  - (e) The waste contains no components or contaminants which, when treated, would form substances or residues which the facility could not handle properly in accordance with State and Federal requirements.

- (2) Demonstration of the treatment process must be made by trial test. The demonstration, appropriately modified for treatment in tanks, must comply with 06-096 C.M.R. ch. Chapter 856, §Section 10(G).
- (3) All treatment chemicals and reagents must be stored in a manner that minimizes the potential for spills, fires, explosions or uncontrolled discharges or releases.

**D. Inspection, Surveying and Recordkeeping.** In addition to the requirements applicable to the storage of hazardous waste in tanks under Section 12(D) of this Chapter, the following requirements ~~shall~~ apply to treatment in tanks:

- (1) The owner or operator must maintain and keep current a record of:
  - (a) All hazardous waste(s), by type and volume, received for treatment;
  - (b) Where at the facility each hazardous waste is being held prior to treatment;
  - (c) Date of treatment of each waste received, the volume treated and the method of treatment (if more than one method is permitted);
  - (d) Details of all accidents and spills at the facility; and
  - (e) All inspections.

This record must be maintained at the facility during operation and upon closure must be delivered to the Department. The Department may require that a current copy of that record be kept on file with the Department.

**E. Air, Ground Water and Surface Water Monitoring.** The Department may require ground water, surface water and air quality monitoring in accordance with the requirements of Sections 8(D), 8(E), and 8(F) of this ~~Chapter~~ rule if it determines that such monitoring is necessary to ensure protection of public health and safety or of the environment.

**F. Response to Leaks or Spills and Closure.** The requirements of Sections 12(E) and 12(G) of this Chapter applicable to the storage of hazardous waste in tanks ~~shall~~ also apply to the treatment of hazardous waste in tanks.

## **15. Additional Standards Applicable to Drip Pads**

### **A. Performance Standards**

- (1) A drip pad, as defined by 40 C.F.R. § 260.10, must be designed, constructed, and installed to prevent any migration of wastes out of the drip pad to adjacent subsurface soil or ground water or surface water at any time during the life, including the post-closure period, of the drip pad.
- (2) A drip pad must be established, constructed, altered and operated to meet the following performance standards:
  - (a) A hazardous waste or constituent or derivative thereof must not appear in ground or surface waters at a concentration above background level, or above current public health drinking water standards for Maine, including the “Maine CDC Maximum Exposure Guidelines

(MEGs) for Drinking Water, December 31, 2016”, or standards for aquatic toxicity, whichever is most stringent. Background levels must be those established by the pre-construction analysis required by 06-096 C.M.R. ch. 856, § 10(C)(10)(g) or of the upgradient monitoring well required by Section 8(D)(1) of this Chapter, whichever is lower; and

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NOTE: Drinking water and aquatic toxicity standards are obtained from current manuals including but not limited to: State of Maine Rules of the Department of Health and Human Services relating to Drinking Water; “Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016”; "Drinking Water and Health" published by the National Research Council; "Suggested No-Adverse Response Levels (SNARLs)" as determined by the Environmental Protection Agency; "Ambient Water Quality Criteria" manuals, published by the Environmental Protection Agency.

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(b) A hazardous waste or constituent or derivative thereof, must not appear in the atmosphere in concentrations significantly above the background level or exceed current ambient air quality standards for Maine at any time. Background levels must be established by monitoring or demonstrated to have been previously established by monitoring.

## **B. Design**

(1) The facility must comply with the provisions of 40 C.F.R. §§ 264.570 - 264.574 except that 40 C.F.R. § 264.572 is deleted and any new drip pads must be designed and constructed with synthetic liners and operated as specified in 40 C.F.R. §§ 264.573(b)(1)-(3); in addition to the requirements of 40 C.F.R. § 264.570(c), the contingency plan for responding to drippage in storage yards must meet the requirements of 38 M.R.S. § 1318-C and the facility must comply with the reporting and removal requirements of 38 M.R.S. § 1318-B; the reference to 40 C.F.R. § 262.11 shall mean 06-096 C.M.R. ch. 851, § 5; the reference to 40 C.F.R. § 264.112 shall mean Section 6(C)(16) of this Chapter; the reference to 40 C.F.R. § 264.144 shall mean Section 6(C)(17) of this Chapter; the reference to “parts 261 – 268” shall mean 06-096 C.M.R. chs. 850 – 857; and references to 40 C.F.R. Part 270 shall mean 06-096 C.M.R. ch. 856.

(2) All drip pads must:

- (a) Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt;
- (b) Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;
- (c) Have a curb or berm around the perimeter;
- (d) Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of daily operations, e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.;
- (e) Be maintained such that it remains free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad; and

- (f) Incorporate a synthetic liner and leakage detection system in accordance with Section 15(B)(3) of this Chapter.
- (3) The drip pads must have:
- (a) A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and to prevent releases into the adjacent subsurface soil or groundwater or surface water during the active life of the facility. The liner must be:
- (i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);
- (ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and
- (iii) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and
- (b) A leakage detection, collection, and removal system immediately above the liner that is designed, constructed, maintained and operated to detect and collect leakage from the drip pad such that it can be removed from below the drip pad. The leakage detection, collection, and removal system must be:
- (i) Constructed of materials that are chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad;
- (ii) Designed and operated to function without clogging through the scheduled closure of the drip pad;
- (iii) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time; and
- (iv) Operated so that any leakage collected in the system is removed and the date, time, and quantity of any leakage removed must be documented in the operating log.
- (4) The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off. Unless protected by a structure as described in 40 C.F.R. § 264.570(b), the owner or operator must:
- (a) Design, construct, operate, and maintain a run-on control system capable of preventing flows into the drip pad during peak discharge from at least a 24-hour, 25-year storm, unless the system has sufficient excess capacity to contain any run-off that might enter the system.

- (b) 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.
- (5) The drip pad must be evaluated to determine that it meets the design requirements of Section 15(B)(1)-(4) above of this Chapter and the owner or operator must obtain a statement from a Maine licensed professional engineer certifying that the drip pad design meets those requirements.

**C. Operation. Drip pads must be operated in the following manner:**

- (1) Drillage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.
- (2) The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues of hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log.
- (3) Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.
- (4) After being removed from the treatment vessel, treated wood from pressure and non-pressure processes must be held on the drip pad until drillage has ceased. The owner or operator must maintain records sufficient to document that all treated wood is held on the pad following treatment in accordance with this requirement. Minimally, documentation must include date and time treated wood was removed from treatment vessel, method of determining active drillage or that drillage has ceased, date and time of inspections to determine if drillage has ceased, inspection results including drillage rate or presence/absence of active drillage, date and time that drillage ceased, signature and printed name of facility inspector.
- (5) Collection and holding units associated with run-on and run-off control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.
- (6) Throughout the active life of the drip pad and as specified in the license, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:
- (a) Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g., upon detection of leakage in the leak detection system), the owner or operator must:
- (i) Enter a record of the discovery in the facility operating log;
- (ii) Immediately remove the portion of the drip pad affected by the condition from service;





**E. Air, Ground Water and Surface Water Monitoring.** The Department may require ground water, surface water and air quality monitoring accordance with the requirements of Sections 8(D), 8(E), and 8(F) of this Chapter if it determines that such monitoring is necessary to ensure protection of public health and safety or of the environment.

**F. Closure**

- (1) The owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pads, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless 06-096 C.M.R. ch. 850, § 3(A)(3)(d) applies;
- (2) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures and equipment as required in subsection (1) above, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, then the drip pads must be closed in accordance with the closure and post-closure requirements that apply to landfills pursuant to Section 8(H) of this Chapter; and
- (3) The owner or operator must comply with 40 C.F.R. § 264. 575.

**165. Additional Standards Applicable to Miscellaneous Units**

**A. Performance Standards**

- (1) A hazardous waste miscellaneous unit must be established, constructed, altered, and operated to meet the following performance standards:
  - (a) ~~No~~A hazardous waste or constituent or derivative thereof ~~must not~~shall appear in ground or surface waters at a concentration above background level, or above current public health drinking water standards for Maine, including the “Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016”~~Maximum Exposure Guidelines~~, or standards for aquatic toxicity, whichever is most stringent.

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NOTE: Drinking water and aquatic toxicity standards are obtained from current manuals including but not limited to: State of Maine Rules of the Department of Health and Human Services relating to Drinking Water; “Maine CDC Maximum Exposure Guidelines (MEGs) for Drinking Water, December 31, 2016”; "Drinking Water and Health" published by the National ~~Research Council~~Academy of Sciences; "Suggested No Adverse Response Levels (SNARLs)" as determined by the Environmental Protection Agency; and "Ambient Water Quality Criteria" manuals published by the Environmental Protection Agency.

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- (b) ~~No~~A hazardous waste or constituent or derivative thereof ~~must not~~shall appear in the atmosphere in concentrations significantly above the background level ~~nor~~ exceed current ambient air quality standards for Maine at any time. Background levels ~~must~~shall be established by monitoring or demonstrated to have been previously established by monitoring.

- (2) A miscellaneous unit ~~must~~ shall also meet the appropriate performance standards applicable to other hazardous waste management units.

### B. Design, Construction, Operation and Closure

(1) A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure compliance with the performance standards in ~~sub~~Section 16(A) of this Chapter ~~above~~. ~~Permits-Licenses~~ for miscellaneous units ~~must~~ shall contain such terms and conditions necessary to protect human health and the environment and ensure compliance with such performance standards, 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 constituents from the unit. ~~Permit-License~~ terms and conditions ~~must~~ shall include those requirements of this Chapter applicable to other hazardous waste management units that are appropriate for the unit being ~~permitted~~ licensed. Protection of human health and the environment includes, but is not limited to, the factors specified in 40 C.F.R. §§ 264.601(a)-(c), ~~which are hereby adopted and incorporated by reference~~. The facility owner or operator and the miscellaneous unit must comply with the requirements of 40 C.F.R. Part 63, Subpart EEE. The facility owner or operator and the miscellaneous unit must also comply with 40 C.F.R. Part 264, Subparts AA, BB and CC.

~~(1)~~(2) Hazardous waste munitions and explosives storage units for the storage of “military munitions” as defined in 40 C.F.R. § 260.10 must, in addition, meet the requirements of 40 C.F.R. §§ 264.1201 and 264.1202, except that references to Subpart C of 40 C.F.R. Part 264 shall mean Section 6(C)(8) of this Chapter, references to Subpart D of 40 C.F.R. Part 264 shall mean Section 6(C)(9) of this Chapter, and references to 40 C.F.R. §261.3(d) shall mean 06-096 C.M.R. 850, § 3(A)(3)(d).

### C. Monitoring, Analysis, Inspection, Response, Reporting, and Corrective Action

(1) Monitoring, testing, analytical data, inspections, response, and reporting procedures must ensure compliance with the performance standards of ~~sub~~Section 16(A) ~~above~~ of this Chapter, the general inspection, equipment testing and maintenance, annual reporting, unmanifested waste reporting, and additional reporting requirements specified in Section 6(C) of this Chapter; the corrective action requirements of Section 6(C)(198) of this Chapter; and any additional requirements necessary to protect human health and the environment as specified in the ~~license~~ permit.

(2) The Board or Department may require ground water monitoring, surface water monitoring, air monitoring, ~~and/or~~ soils monitoring, or any combination of such monitoring in accordance with a plan approved by the Board or Department, as applicable. If, at any time during operation, closure, or post-closure of the facility (where applicable), the monitoring demonstrates that the performance standards are not being met by the miscellaneous unit, a corrective action program must be implemented, details of which must be specified or approved by the Department.

(3) Hazardous waste munitions and explosives storage units for the storage of “military munitions” as defined in 40 C.F.R. § 260.10 must, in addition, meet the requirements of 40 C.F.R. § 264.1201.

**D. Post-Closure Care.** A miscellaneous unit that is a disposal unit must be maintained in a manner that complies with the performance standards of ~~sub~~Section 16(A) of this Chapter~~above~~ and protects human health and the environment during the post-closure care period. In addition, if a treatment or storage unit has contaminated soils, surface waters, or ground water that cannot be completely removed or decontaminated during closure, then that unit must also meet the performance standards of ~~sub~~Section 16(A) of this Chapter~~above~~ and protect human health and the environment during post-closure care. The post-closure requirements of Section 6(C)(16~~5~~) of this Chapter ~~shall~~ apply and the post-closure plan must specify the procedures that will be used to satisfy this requirement. Hazardous waste munitions and explosives storage units for the storage of "military munitions" as defined in 40 C.F.R. § 260.10 must, in addition, meet the requirements of 40 C.F.R. § 264.1202.

**E. Open Burning Units**

- (1) In addition to the requirements of Sections 16(A) through 16(D) of this Chapter applicable to miscellaneous units, the following requirements ~~shall~~ apply to a unit employed for the open burning or detonation of hazardous waste:
- (a) The unit ~~must~~shall be designed, constructed, operated, and closed in a manner intended to prevent the migration of hazardous waste or constituents into the environment;
  - (b) Surface slopes of an active portion of the unit must not be greater than 5 percent so as to minimize erosion, but must be greater than 0 percent so as to prevent ponding for periods that will cause the area to be anaerobic;
  - (c) The distance from any natural soils barrier to the seasonal high water table at the site must be at least 5 feet;
  - (d) Food chain crops must not be grown within 300 feet of the unit unless the owner or operator demonstrates to the Board that hazardous waste:
    - (i) Will not be transferred to the food portion of the crop by plant uptake or direct contact and will not otherwise be ingested by food chain animals, or
    - (ii) Will not occur in greater concentrations in the crops grown within 300 feet of the unit than in the same crops grown on untreated soils under similar conditions elsewhere in the same region;
  - (e) All hazardous waste must be analyzed immediately prior to burning or detonation to ensure that:
    - (i) The waste contains no components or contaminants which might interfere with or have an adverse impact on the burning or detonation process,
    - (ii) The waste contains no components or contaminants which, when burned or detonated, may cause an uncontrolled release of waste or toxic gases or fumes, and
    - (iii) The waste contains no components or contaminants which, when burned or detonated, would form substances or residues that the facility could not handle properly in accordance with State and Federal requirements;

- (f) Ground water monitoring of the unit ~~must~~ shall be conducted in accordance with Section 8(D) of this Chapter;
- (g) Soil monitoring ~~must~~ shall be conducted in accordance with a program developed or approved by the Department, and if the presence of hazardous waste or constituents is detected at the edge of the unit in excess of background levels, corrective action ~~must~~ shall be conducted in accordance with a program developed or approved by the Department;
- (h) Detailed records of burning or detonation activities in the unit, and corrective action activities conducted at the site, ~~must~~ shall be maintained as specified or approved by the Department; and
- (i) At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless ~~Section 3(A)(3)(d) of 06-096 C.M.R. ch. Chapter 850, § 3(A)(3)(d)~~ applies or, if after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures and equipment, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, ~~he must close the facility~~ must be closed in accordance with the closure and post-closure requirements that apply to landfills.

**176. Additional Standards Applicable to Waste Facilities Located in a Flood Plain.** Any facility located or to be located within 300 feet of a 100-year flood plain may be constructed, operated or maintained only if the applicant:

- A. Demonstrates to the satisfaction of the Board by persuasive evidence that the rebuttable presumption against constructing, operating, or maintaining a facility in such an area has been overcome; and
- B. Constructs, operates, and maintains such facility:
  - (1) To prevent wash-out of any hazardous waste by a 100-year flood; or
  - (2) Has procedures that will be in effect which will cause the waste to be removed to a location where the waste will not be vulnerable to flood waters and to a location which is authorized to manage hazardous waste safely before flood water can reach the facility; and
  - (3) Complies with all other applicable facility standards in this Chapter.

**187. Additional Standards Applicable to Commercial Facilities.** For commercial facilities, the exposure information requirements of ~~Chapter 06-096 C.M.R. ch. 856, § Section 10(C)(13)~~ shall apply.

**198. Variance Requests.** Consistent with Federal requirements for authorization to operate the State hazardous waste management program, the Board may, on its own motion or on request, modify or waive one or more of the requirements of Sections 8(B), 9(B), 11(B), 12(B), and 14(B) of this ~~Chapter~~ rule relating to design of a specified type of facility except that no performance standard may be made less stringent. Such modification or variance must be justified on the basis that greater protection to health, safety, welfare or the environment than that provided by the performance standards

is required and will thereby be provided or on the basis that no less protection than that provided by the performance standards will thereby be provided in that the design is an alternate but equivalent one.

**2019. Severability.** Should any provision of this ~~rule~~ Chapter be declared invalid or ineffective by court decision, the decision shall not invalidate any other provision of this ~~Chapter~~ rule.

~~After a public hearing on August 19, 1993, this rule as amended is adopted this 12 day of January, 1994.~~

AUTHORITY: 38 M.R.S.A., ~~§§Section 1301 through 1319-Y, et seq.~~

EFFECTIVE DATE: March 23, 1983

Amended: February 10, 1985

Amended: November 30, 1986

Amended: March 16, 1994

EFFECTIVE DATE (ELECTRONIC CONVERSION): May 4, 1996

Correction: January 27, 2003 - § 8(B)(11)

Appendix IX of this Chapter corresponds to Appendix IX of 40 CFR, Part § 264. Additional constituents may be required by the Board or Department based upon the waste(s) being handled and the history of the facility.

### **APPENDIX IX: GROUND-WATER MONITORING LIST<sup>1</sup>**

<u>Common name<sup>2</sup></u>	<u>CAS RN<sup>3</sup></u>	<u>Chemical abstracts service index name<sup>4</sup></u> (The following symbols are in use: <sup>a</sup> means Greek alpha and <sup>B</sup> means Greek beta)	<u>Suggested methods<sup>5</sup></u>
Acenaphthene.....	83-32-9	Acenaphthylene, 1,2-dihydro.....	8100 8270
Acenaphthylene.....	208-96-8	Acenaphthylene.....	8100 8270
Acetone.....	67-64-1	2-Propanone.....	8240
Acetophenone.....	98-86-2	Ethanone, 1 -phenyl.....	8270
Acetonitrile; Methyl cyanide.	75-05-8	Acetonitrile.....	8015
2-Acetylaminofluorene-, 2-AAF.	53-96-3	Acetamide, N-9H-fluoren-2-yl...	8270
Acrolein.....	107-02-8	2-Propenal.....	8030 8240
Acrylonitrile.....	107-13-1	2-Propenenitrile.....	8030 8240
Aldrin.....	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro- 1,4,4a, 5,8,8a-hexahydro- (1 <sup>a</sup> ,4 <sup>a</sup> ,4a <sup>B</sup> ,5 <sup>a</sup> ,8 <sup>a</sup> ,8a <sup>B</sup> )-*	8080 8270
Allyl chloride.....	107-05-1	1-Propene, 3-chloro.....	8010 8240
4-Aminobiphenyl.....	92-67-1	[1,1'-Biphenyl]-4-amine.....	8270
Aniline.....	62-53-3	Benzenamine.....	8270
Anthracene.....	120-12-7	Anthracene.....	8100 8270
Antimony.....	(Total)	Antimony.....	6010 7040 7041

Aramite.....	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester.	8270
Arsenic.....	(Total)	Arsenic.....	6010 7060 7061
Barium.....	(Total)	Barium.....	6010 7080
Benzene.....	71-43-2	Benzene.....	8020 8240
Benzo[a]anthracene;/ ... Benzanthracene.	56-55-3	Benzo[a]anthracene.....	8100 8270
Benzo[b]fluoranthene.....	205-99-2	Benzo[e]acephenanthrylene.....	8100
Benzo[k]fluoranthene.....	207-08-9	Benzo[k]fluoranthene.....	8100 8270
Benzo[ghi]perylene.....	191-24-2	Benzo[ghi]perylene.....	8100 8270
Benzo[a]pyrene.....	50-32-8	Benzo[a]pyrene.....	8100 8270
Benzyl alcohol.....	100-51-6	Benzenemethanol.....	8270
Beryllium.....	(Total)	Beryllium.....	6010 7090 7091
alpha-BHC.....	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1 <sup>a</sup> ,2 <sup>a</sup> ,3 <sup>B</sup> ,4 <sup>a</sup> ,5 <sup>B</sup> ,6 <sup>B</sup> )-	8080 8250
beta-BHC.....	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1 <sup>a</sup> ,2 <sup>B</sup> ,3 <sup>a</sup> ,4 <sup>B</sup> ,5 <sup>a</sup> ,6 <sup>B</sup> )-	8080 8250
delta-BHC.....	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1 <sup>a</sup> ,2 <sup>a</sup> ,3 <sup>a</sup> ,4 <sup>B</sup> ,5 <sup>a</sup> ,6 <sup>B</sup> )-	8080 8250
gamma-BHC; Lindane.....	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1 <sup>a</sup> ,2 <sup>a</sup> ,3 <sup>B</sup> ,4 <sup>a</sup> ,5 <sup>a</sup> ,6 <sup>B</sup> )-	8080 8250
Bis(2-chloroethoxy)methane.	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis [2-chloro-	8270
Bis(2-chloroethyl)ether.....	111-44-4	Ethane, 1,1'-oxybis[2-chloro-	8270
Bis(2-chloro-1-methylethyl) ether; 2,2'-Di-chlorodiisopropyl ether.	108-60-1	Propane, 2,2'-oxybis[1-chloro-	8010 8270
Bis(2-ethylhexyl) phthalate.	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl)ester.	8060 8270



Bromodichloromethane.....	75-27-4	Methane, bromodichloro.....	8010 8240
Bromoform; Tribromomethane..	75-25-2	Methane, tribromo.....	8010 8240
4-Bromophenyl phenyl ether..	101-55-3	Benzene, 1-bromo-4-phenoxy.....	8270
Butyl benzyl phthalate;.....	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethylester	8060 8270
Benzyl butyl phthalate.			
Cadmium.....	(Total)	Cadmium.....	6010 7130 7131
Carbon disulfide.....	75-15-0	Carbon disulfide.....	8240
Carbon tetrachloride.....	56-23-5	Methane, tetrachloro.....	8010 8240
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 8250
p-Chloroaniline.....	106-47-8	Benzenamine, 4-chloro.....	8270
Chlorobenzene.....	108-90-7	Benzene, chloro.....	8010 8020 8240
Chlorobenzilate.....	510-15-6	Benzeneacetic acid, 4-chloro-a- (4-chlorophenyl)-a-hydroxy-, ethyl ester.	8270
p-Chloro-m-cresol.....	59-50-7	Phenol, 4-chloro-3-methyl.....	8040 8270
Chloroethane; Ethyl chloride.	75-00-3	Ethane, chloro.....	8010 8240
Chloroform.....	67-66-3	Methane, trichloro.....	8010 8240
2-Chloronaphthalene.....	91-58-7	Naphthalene, 2-chloro.....	8120 8270
2-Chlorophenol.....	95-57-8	Phenol, 2-chloro.....	8040 8270
4-Chlorophenyl phenyl ether.	7005-72-3	Benzene, 1-chloro-4-phenoxy..	8270
Chloroprene.....	126-99-8	1,3-Butadiene, 2-chloro.....	8010 8240
Chromium.....	(Total)	Chromium.....	6010 7190 7191
Chrysene.....	218-01-9	Chrysene.....	8100 8270
Cobalt.....	(Total)	Cobalt.....	6010 7200 7201
Copper.....	(Total)	Copper.....	6010 7210
m-Cresol.....	108-39-4	Phenol, 3-methyl.....	8270
o-Cresol.....	95-48-7	Phenol, 2-methyl.....	8270
p-Cresol.....	106-44-5	Phenol, 4-methyl.....	8270
Cyanide.....	57-12-5	Cyanide.....	9010
2,4-D; 2,4-Dichloropheno- xyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy).	8150

4,4'-DDD.....	72-54-8	Benzene 1,1'-(2,2-dichloroethylidene) bis[4-chloro-	8080 8270
4,4'-DDE.....	72-55-9	Benzene, 1,1'-(dichloroethylidene)... bis[4-chloro-	8080 8270
4,4'-DDT.....	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4- chloro-	8080 8270
Diallate.....	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S- (2,3- dichloro-2-propenyl) ester..	8270
Dibenz[a,h]anthracene.....	53-70-3	Dibenz[a,h]anthracene.....	8100 8270
Dibenzofuran.....	132-64-9	Dibenzofuran.....	8270
Dibromochloromethane;.... Chlorodibromomethane	124-48-1	Methane, dibromochloro.....	8010 8240
1,2-Dibromo-3-chloropropane;. DBCP.	96-12-8	Propane, 1,2-dibromo-3-chloro..	8010 8240 8270
1,2-Dibromoethane; Ethylene dibromide.	106-93-4	Ethane, 1,2-dibromo.....	8010 8240
Di-n-butyl phthalate.....	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl. ester	8060 8270
o-Dichlorobenzene.....	95-50-1	Benzene, 1,2-dichloro.....	8010 8020 8120 8270
m-Dichlorobenzene.....	541-73-1	Benzene, 1,3-dichloro.....	8010 8020 8120 8270
p-Dichlorobenzene.....	106-46-7	Benzene, 1,4-dichloro.....	8010 8020 8120 8270
3,3'-Dichlorobenzidine.....	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3' -dichloro	8270
trans-1,4-Dichloro-2-butene.	110-57-6	2-Butene, 1,4-dichloro-, (E)...	8240
Dichlorodifluoromethane.....	75-71-8	Methane, dichlorodifluoro.....	8010 8240
1,1-Dichloroethane.....	75-34-3	Ethane, 1,1-dichloro.....	8010 8240
1,2-Dichloroethane; Ethylene dichloride.	107-06-2	Ethane, 1,2-dichloro.....	8010 8240
1,1-Dichloroethylene;.... Vinylidenechloride	75-35-4	Ethene, 1,1 -dichloro.....	8010 8240
trans-1,2-Dichloroethylene..	156-60-5	Ethene, 1,2-dichloro-, (E).....	8010 8240
2,4-Dichlorophenol.....	120-83-2	Phenol, 2,4-dichloro.....	8040 8270
2,6-Dichlorophenol.....	87-65-0	Phenol, 2,6-dichloro.....	8270
1,2-Dichloropropane.....	78-87-5	Propane, 1,2-dichloro.....	8010 8240
cis-1,3-Dichloropropene...	10061-01-5	1-Propene, 1,3-dichloro-, (Z)...	8010

trans-1,3-Dichloropropene.	10061-02-6	1-Propene, 1,3-dichloro-, (E)....	8240 8010
Dieldrin.....	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene., 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a- octahydro-, (1a <sup>a</sup> ,2 <sup>B</sup> ,2a <sup>a</sup> ,3 <sup>B</sup> ,6 <sup>B</sup> ,6a <sup>a</sup> ,7 <sup>B</sup> ,7a <sup>a</sup> )-	8240 8080 8270
Diethyl phthalate.....	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester.	8060 8270
O,O-Diethyl 0-2-pyrazinyl. phosphorothioate; Thionazin Dimethoate.....	297-97-2 60-51-5	Phosphorothioic acid, O,O-diethyl . 0-pyrazinylester. Phosphorodithioic acid, 0,0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester.	8270 8270
p-(Dimethylamino)azobenzene.	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)	8270
7,12-Dimethylbenz[anthracene.	57-97-6	Benz[a]anthracene, 7,12-dimethyl.....	8270
3,3'-Dimethylbenzidine....	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl.	8270
alpha, alpha-Dimethylphenethyla- mine.	122-09-8	Benzeneethanamine, a,a-dimethyl.	8270
2,4-Dimethylphenol.....	105-67-9	Phenol, 2,4-dimethyl.....	8040 8270
Dimethyl phthalate.....	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester.	8060 8270
m-Dinitrobenzene.....	99-65-0	Benzene, 1,3-dinitro.....	8270
4,6-Dinitro-o-cresol.....	534-52-1	Phenol, 2-methyl-4,6-dinitro.....	8040 8270
2,4-Dinitrophenol.....	51-28-5	Phenol, 2,4-dinitro.....	8040 8270
2,4-Dinitrotoluene.....	121-14-2	Benzene, 1-methyl-2,4-dinitro..	8090 8270
2,6-Dinitrotoluene.....	606-20-2	Benzene, 2-methyl-1,3-dinitro....	8090 8270
Dinoseb; DNBP; 2-sec-Butyl- 4,6-dinitrophenol	88-85-7	Phenol, 2-(1 -methylpropyl)-4,6-dinitro.	8150 8270
Di-n-octyl phthalate.....	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl. ester	8060 8270
1,4-Dioxane.....	123-91-1	1,4-Dioxane.....	8015
Diphenylamine.....	122-39-4	Benzenamine, N-phenyl.....	8270
Disulfoton.....	298-04-4	Phosphorodithioic acid, O,O-diethyl.. S-[2-(ethylthio)ethyl]ester	8140 8270
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, (3 <sup>a</sup> ,5a <sup>B</sup> ,6 <sup>a</sup> ,9 <sup>a</sup> ,9a <sup>B</sup> )-	8080 8250
Endosulfanil.....	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin., 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a- hexahydro-, 3-oxide, (3 <sup>a</sup> ,5a <sup>a</sup> ,6 <sup>B</sup> ,9 <sup>B</sup> ,9a <sup>a</sup> )-	8080
Endosulfan sulfate.....	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin., 6,7,8,9,10,10-hexachloro- 1,5,5a,6,9,9a -hexahydro-, 3,3-dioxide.	8080 8270
Endrin.....	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene., 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a- octahydro-, (1a <sup>a</sup> ,2 <sup>B</sup> ,2a <sup>B</sup> ,3 <sup>a</sup> ,6 <sup>a</sup> ,6a <sup>B</sup> ,7 <sup>B</sup> ,7a <sup>a</sup> )-	8080 8250

Endrin aldehyde.....	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1 <sup>a</sup> ,2 <sup>B</sup> ,2a <sup>B</sup> ,4 <sup>B</sup> ,4a <sup>B</sup> ,5 <sup>B</sup> ,6a <sup>B</sup> ,6b <sup>B</sup> ,7R*)-	8080 8270
Ethylbenzene.....	100-41-4	Benzene, ethyl.....	8020 8240
Ethyl methacrylate.....	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester.	8015 8240 8270
Ethyl methanesulfonate.....	62-50-0	Methanesulfonic acid, ethyl ester...	8270
Famphur.....	52-85-7	Phosphorothioic acid, 0-[4-..... [(dimethylamino)sulfonyl]phenyl]-0,0-dimethyl ester.	8270
Fluoranthene.....	206-44-0	Fluoranthene.....	8100 8270
Fluorene.....	86-73-7	9H-Fluorene.....	8100 8270
Heptachlor.....	76-44-8	4,7-Methano-1H-indene, ..... 1,4,5,6,7,8,8-heptachloro	8080 8270
Heptachlor epoxide.....	1024-57-3	3a,4,7,7a-tetrahydro- 2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a, hexahydro-, (1a <sup>a</sup> ,1b <sup>B</sup> ,2 <sup>a</sup> ,5 <sup>a</sup> ,5a <sup>B</sup> ,6 <sup>B</sup> ,6a <sup>a</sup> )	8080 8270
Hexachlorobenzene.....	118-74-1	Benzene, hexachloro.....	8120 8270
Hexachlorobutadiene.....	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro.	8120 8270
Hexachlorocyclopentadiene..	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro.	8120 8270
Hexachloroethane.....	67-72-1	Ethane, hexachloro.....	8120 8270
Hexachlorophene.....	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro.	8270
Hexachloropropene.....	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro.	8270
2-Hexanone.....	591-78-6	2-Hexanone.....	8240
Indeno(1,2,3-cd)pyrene....	193-39-5	Indeno[1,2,3-cd]pyrene.....	8100 8270
Isobutyl alcohol.....	78-83-1	1-Propanol, 2-methyl.....	8015
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
Isophorone.....	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl.	8090 8270
Isosafrole.....	120-58-1	1,3-Benzodioxole, 5-(1-propenyl).	8270
Kepon.....	143-50-0	1,3,4-Metheno-2H-cyclobuta- [cd]pentalen-2-one,.	8270
Lead.....	(Total)	1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro- Lead.....	6010 7420 7421
Mercury.....	(Total)	Mercury.....	7470
Methacrylonitrile.....	126-98-7	2-Propenenitrile, 2-methyl.....	8015

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Methapyrilene.....	91-80-5	1,2,Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-.	8270
Methoxychlor.....	72-43-5	Benzene,1,1'-(2,2,2,trichloroethylidene) bis[4-methoxy-	8080 8270
Methyl bromide; Bromomethane.	74-83-9	Methane, bromo.....	8010 8240
Methyl chloride; Chloromethane.	74-87-3	Methane, chloro.....	8010 8240
3-Methylcholanthrene.....	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl.	8270
Methylene bromide; Dibromomethane.	74-95-3	Methane, dibromo.....	8010 8240
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro.....	8010 8240
Methyl ethyl ketone; MEK..	78-93-3	2-Butanone.....	8015 8240
Methyl iodide; iodomethane..	74-88-4	Methane, iodo.....	8010 8240
Methyl methacrylate.....	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester.	8015 8240
Methyl methanesulfonate....	66-27-3	Methanesulfonic acid, methyl ester..	8270
2-Methylnaphthalene.....	91-57-6	Naphthalene, 2-methyl.....	8270
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, 0,0-dimethyl .	8140
4-Methyl-2-pentanone;..	108-10-1	O-(4-nitro-phenyl) ester	8270
Methyl isobutyl ketone.		2-Pentanone, 4-methyl.....	8015 8240
Naphthalene.....	91-20-3	Naphthalene.....	8100 8270
1,4-Naphthoquinone.....	130-15-4	1,4-Naphthalenedione.....	8270
1-Naphthylamine.....	134-32-7	1-Naphthalenamine.....	8270
2-Naphthylamine.....	91-59-8	2-Naphthalenamine.....	8270
Nickel.....	(Total)	Nickel.....	6010 7520
o-Nitroaniline.....	88-74-4	Benzenamine, 2-nitro.....	8270
m-Nitroaniline.....	99-09-2	Benzenamine, 3-nitro.....	8270
p-Nitroaniline.....	100-01-6	Benzenamine, 4-nitro.....	8270
Nitrobenzene.....	98-95-3	Benzene, nitro.....	8090 8270
o-Nitrophenol.....	88-75-5	Phenol, 2-nitro.....	8040 8270
p-Nitrophenol.....	100-02-7	Phenol, 4-nitro.....	8040 8270
4-Nitroquinoline 1-oxide.	56-57-5	Quinoline, 4-nitro-, 1-oxide....	8270
N-Nitrosodi-n-butylamine.	924-16-3	1-Butanamine, N-butyl-N-nitroso.	8270
N-Nitrosodiethylamine....	55-18-5	Ethanamine, N-ethyl-N-nitroso..	8270
N-Nitrosodimethylamine...	62-75-9	Methanamine, N-methyl-N-nitroso.	8270
N-Nitrosodiphenylamine...	86-30-6	Benzenamine, N-nitroso-N-phenyl	8270
N-Nitrosodipropylamine; Di-n-propylnitrosamine.	621-64-7	1-Propanamine, N-nitroso-N-propyl	8270
N-Nitrosomethylethylamine.	10595-95-6	Ethanamine, N-methyl-N-nitroso...	8270
N-Nitrosomorpholine.....	59-89-2	Morpholine, 4-nitroso.....	8270
N-Nitrosopiperidine.....	100-75-4	Piperidine, 1-nitroso.....	8270
N-Nitrosopyrrolidine.....	930-55-2	Pyrrolidine, 1-nitroso.....	8270

5-Nitro-o-toluidine.....	99-55-8	Benzenamine, 2-methyl-5-nitro....	8270
Parathion.....	56-38-2	Phosphorothioic acid, O,O-diethyl-O-(4-nitro-phenyl) ester	8270
Polychlorinated biphenyls;	PCBs.See Note 6	1,1'-Biphenyl, chloro derivatives..	8080 8250
Polychlorinated dibenzo-p-dioxins; PCDDs.	See Note 7	Dibenzo[b,e][1,4]dioxin, chloro derivatives	8280
Polychlorinated dibenzofurans; PCDFs.	See Note 8	Dibenzofuran, chloro derivatives..	8280
Pentachlorobenzene.....	608-93-5	Benzene, pentachloro.....	8270
Pentachloroethane.....	76-01-7	Ethane, pentachloro.....	8240 8270
Pentachloronitrobenzene....	82-68-8	Benzene, pentachloronitro.....	8270
Pentachlorophenol.....	87-86-5	Phenol, pentachloro.....	8040 8270
Phenacetin.....	62-44-2	Acetamide, N-(4-ethoxyphenyl)....	8270
Phenanthrene.....	85-01-8	Phenanthrene.....	8100 8270
Phenol.....	108-95-2	Phenol.....	8040 8270
p-Phenylenediamine.....	106-50-3	1,4-Benzenediamine.....	8270
Phorate.....	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester	8140 8270
2-Picoline.....	109-06-8	Pyridine, 2-methyl.....	8240 8270
Pronamide.....	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-pro-pynyl)-.	8270
Propionitrile; Ethyl cyanide.	107-12-0	Propanenitrile.....	8015 8240
Pyrene.....	129-00-0	Pyrene.....	8100 8270
Pyridine.....	110-86-1	Pyridine.....	8240 8270
Safrole.....	94-59-7	1,3-Benzodioxole, 5-(2-propenyl).	8270
Selenium.....	(Total)	Selenium.....	6010 7740 7741
Silver.....	(Total)	Silver.....	6010 7760
Silvex; 2,4,5-TP.....	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)	8150
Styrene.....	100-42-5	Benzene, ethenyl-.....	8020 8240
Sulfide.....	18496-25-8	Sulfide.....	9030
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid.	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)	8150
2,3,7,8-TCDD; 2,3,7,8-Tetrachloro-	1746-01-6	Dibenzo[b,e][1,4]dioxin, ... 2,3,7,8-tetrachlorodibenzo-p-dioxin	8280
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro.....	8270
1,1,1,2-Tetrachloroethane.	630-20-6	Ethane, 1,1,1,2-tetrachloro.....	8010 8240
1,1,2,2-Tetrachloroethane.	79-34-5	Ethane, 1,1,2,2-tetrachloro.....	8010 8240

Tetrachloroethylene; Perchloroethylene; Tetrachloroethene.	127-18-4	Ethene, tetrachloro.....	8010
2,3,4,6-Tetrachlorophenol..	58-90-2	Phenol, 2,3,4,6-tetrachloro.....	8240
Tetraethyl dithiopyrophosphate; Sulfotepp	3689-24-5	Thiodiphosphoric acid $[(HO)_2P(S)]_2O$ , tetraethyl ester	8270
Thallium.....	(Total)	Thallium.....	6010
			7840
			7841
Tin.....	(Total)	Tin.....	7870
Toluene.....	108-88-3	Benzene, methyl.....	8020
			8240
o-Toluidine.....	95-53-4	Benzenamine, 2-methyl.....	8270
Toxaphene.....	8001-35-2	Toxaphene.....	8080
			8250
1,2,4-Trichlorobenzene..	120-82-1	Benzene, 1,2,4-trichloro.....	8270
1,1,1-Trichloroethane; Methylchloroform.	71-55-6	Ethane, 1,1,1-trichloro.....	8240
1,1,2-Trichloroethane.	79-00-5	Ethane, 1,1,2-trichloro.....	8010
			8240
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro.....	8010
			8240
Trichlorofluoromethane....	75-69-4	Methane, trichlorofluoro.....	8010
			8240
2,4,5-Trichlorophenol....	95-95-4	Phenol, 2,4,5-trichloro.....	8270
2,4,6-Trichlorophenol....	88-06-2	Phenol, 2,4,6-trichloro.....	8040
			8270
1,2,3-Trichloropropane....	96-18-4	Propane, 1,2,3-trichloro.....	8010
			8240
O,O,O-Triethyl phosphorothioate..	126-68-1	Phosphorothioic acid, 0,0,0-triethyl ester	8270
sym-Trinitrobenzene.....	99-35-4	Benzene, 1,3,5-trinitro.....	8270
Vanadium.....	(Total)	Vanadium.....	6010
			7910
			7911
Vinyl acetate.....	108-05-4	Acetic acid, ethenyl ester.....	8240
Vinyl chloride.....	75-01-4	Ethene, chloro.....	8010
			8240
Xylene (total).....	1330-20-7	Benzene, dimethyl.....	8020
			8240
Zinc.....	(Total)	Zinc.....	6010
			7950

<sup>1</sup> 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.

<sup>2</sup> Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

<sup>3</sup> Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

<sup>4</sup> CAS index names are those used in the 9th Cumulative Index.

- <sup>5</sup> 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 EPA. 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.
- <sup>6</sup> 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 RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5).
- <sup>7</sup> This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins.
- <sup>8</sup> This category contains congener chemicals including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans.