Chapter 173-306 WAC
SPECIAL INCINERATOR ASH MANAGEMENT STANDARDS

WAC

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WAC 173-306-010 Authority and purpose. This chapter is adopted under the authority of chapter 70.138 RCW, Incinerator ash residue, to protect human health, the environment, and employees during the management and disposal of special incinerator ash. It is also the purpose of this chapter to enhance and encourage the higher waste management priorities as spelled out in chapter 70.138 RCW. This chapter is intended to establish consistent, enforceable management requirements for special incinerator ash that otherwise would be regulated as hazardous waste under chapter 70.105 RCW, the Hazardous Waste Management Act. This chapter is not intended to address ash residues that are classed as hazardous waste under federal rules, 40 C.F.R. Part 261, unless the Environmental Protection Agency decides those wastes are not subject to Subtitle C of the Resource Conservation and Recovery Act.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-010, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-010, filed 4/30/90, effective 5/31/90.]

WAC 173-306-050 Applicability. This chapter applies to municipal solid wastes intended for incineration or energy recovery and special incinerator ash as those terms are defined in WAC 173-306-100. (Incinerator ash whose designation status is unknown must be considered special incinerator ash until data developed under WAC 173-306-500(4) is submitted to the department.) This chapter shall not apply to the following wastes:

(1) Solid waste as defined in WAC 173-306-100 that is not regulated as hazardous waste under chapter 70.105 RCW and that is not intended for incineration or energy recovery;

(2) Hazardous wastes regulated under the Federal Resource Conservation and Recovery Act, 42 U.S.C. sec. 6901 et seq.;

(3) Incinerator ash from the operation of incineration or energy recovery facilities burning only tires, woodwaste, infectious waste, sewage sludge, or any other single type of refuse other than municipal solid waste; and

(4) Incinerator ash from the operation of incineration or energy recovery facilities burning municipal solid waste at a rate of twelve tons of municipal solid waste per day or less.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-050, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-050, filed 4/30/90, effective 5/31/90.]

WAC 173-306-100 Definitions. Unless the context clearly requires otherwise, the definitions in this section apply throughout this chapter.

(1) "Active area" means that portion of a facility where ash disposal operations are being, are proposed to be, or have been conducted. Buffer zones are not considered part of the active area of a facility.

(2) "Aquifer" means a geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs.

(3) "Ash" means special incinerator ash.

(4) "Ash cell" or "cell" means an active disposal phase of the site which must be divided into a series of phases to minimize the active ash disposal area.

(5) "Beneficial use" means the water uses as defined by the water resources management program established by the Water Resources Act of 1971 and chapter 173-500 WAC.

(6) "Bottom ash" means ash residues remaining on the incineration or energy recovery facility grates or in the combustion chambers after combustion. Bottom ash may or may not be a special incinerator ash.

(7) "Buffer zone" means that part of a facility which lies between the active area and the property boundary.

(8) "Closure" means those actions taken by the owner or operator of an ash facility to cease disposal operations. A closure notice will be provided to the department with the exact date to ensure that all facilities are closed in conformance with applicable rules at the time of closure and to prepare the site for the post-closure period using best engineering practices.

(9) "Construction quality assurance plan" means a plan describing the methods by which the professional engineer in responsible charge of inspection of the project will determine that the facilities were constructed without significant change from the department approved plans and specifications.

(10) "Contaminate" means to discharge a substance into groundwater that would cause:

(a) The concentration of that substance in the groundwater to exceed the maximum contamination level specified in WAC 173-306-9901;

(b) A statistically significant increase in the concentration of that substance in the groundwater where the existing concentration of that substance exceeds the maximum contaminant level specified in WAC 173-306-9901; or

(c) A statistically significant increase above background in the concentration of a substance which:

(i) Is not specified in WAC 173-306-9901; and

(ii) Is present in the ash; and

(iii) Has been determined to present a substantial risk to human health or the environment in the concentration found at the point of compliance by the department in consultation with the department of health.

(11) "Critical habitat" means habitat defined as critical by the Endangered Species Act of 1973 (P.L. 93-205).

(12) "Department" means the department of ecology.

(13) "Department's approval" means an approval letter by the director after the review of all engineering reports, plans and specifications, and any other engineering documents by a registered engineer.

(14) "Director" means the director of the department of ecology or the director's designee.

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

(16) "Dispose" or "disposal" means the treatment, utilization, processing, or final deposit of special incinerator ash.

(17) "Disposal facility" means all structures, other appurtenances, improvements and land used for recycling, storing, treating, or disposing of special incinerator ash.

(18) "Domestic water" means any water used for human consumption, other domestic activities, livestock watering or for any use for which a water right has been granted.

(19) "Energy recovery" means the recovery of energy in a usable form from mass burning, fluidized bed or refuse - derived fuel incineration, pyrolysis, or any other means of using the heat of combustion of solid waste that involves high temperature (above twelve hundred degrees Fahrenheit) processing.

(20) "Existing disposal facility" means a disposal facility that is owned or leased and in operation, or for which construction has begun, on or before the effective date of this chapter and the owner or operator has obtained permits or approvals necessary under federal, state and local statutes, rules, and ordinances.

(21) "Existing residential development" means any existing development of residential dwelling units with a density of at least one unit per acre and a total of more than ten dwellings at time of permit application.

(22) "Expanded disposal facility" means a disposal facility adjacent to an existing facility for which the land is purchased and approved by the department after the effective date of this chapter. The department shall consider a vertical expansion approved and permitted after the effective date of this chapter to be an expanded disposal facility.

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

(24) "Facility" means disposal facility.

(25) "Flyash" or "flyash/scrubber residue" means ash swept from the incineration or energy recovery facility combustion chamber and collected from the boilers, economizers, and air pollution control devices such as scrubbers, baghouses, and electro-static precipitators. Flyash or flyash/scrubber residues may or may not be special incinerator ash.

(26) "Generate" means any act or process that produces special incinerator ash or which first causes special incinerator ash to become subject to regulation.

(27) "Generator" means any incineration facility owner/operator who generates a special incinerator ash. An existing generator is any generator whose facility is in operation on the effective date of this chapter.

(28) "Holocene" means the most recent measure of geologic time period extending from the end of the Pleistocene period to the present.

(29) "Incineration" means reducing the volume of solid wastes by use of an enclosed device that uses controlled flame combustion.

(30) "Independent third party" means, for the purpose of liner construction, a person, approved by the department, with demonstrated experience in successful liner installation or inspection, who is financially and organizationally independent of:

(a) The generator or facility owner/operator;

(b) The raw material producer (such as the resin manufacturer or the bentonite producer);

(c) The liner manufacturer;

(d) The liner installer; or

(e) Any other person who might have a financial or organizational connection to the facility.

(31) "Land treatment" means the practice of applying ash waste onto or incorporating into the soil surface. If the waste will remain after the facility is closed, this practice is disposal.

(32) "Management" means the handling, storage, collection, transportation, and disposal of special incinerator ash.

(33) "Monofill" means a disposal facility or part of a facility, that is not a land treatment facility, at which only special incinerator ash is finally deposited in or on.

(34) "New disposal facility" means a facility that begins operation or construction after the effective date of this chapter.

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

(36) "Perennial surface water bodies" are normally continuous bodies of water with natural flows throughout the year and includes lakes, rivers, ponds, irrigation canals, streams, reservoirs, inland waters, salt waters, and all other waters of the state (not to include man-made lagoons or impoundments for waste treatment or storage) within the jurisdiction of the state of Washington as defined by chapter 90.48 RCW, the Water Pollution Control Act.

(37) "Permeability" means the ability with which a porous material allows liquid or gaseous fluids to flow through it.

(38) "Permit" means a special incinerator ash disposal permit.

(39) "Person" means any person, firm, association, county, public, municipal, or private corporation, agency, or other entity whatsoever.

(40) "Pile" means any noncontainerized accumulation of ash that is used for treatment or utilization.

(41) "Plans and specifications" means the detailed drawings and specifications used in the construction or modification of ash disposal facilities.

(42) "Point of compliance" means that part of groundwater which lies beneath the perimeter of a disposal facility's active area as that active area would exist at the closure of the facility.

(43) "Post-closure" means the requirements placed upon disposal facilities after closure to ensure their environmental safety for a thirty-year period or until the site becomes stabilized (i.e., cap integrity maintained, little or no settlement or leachate generation).

(44) "Processing" means an operation to convert ash into a useful product or to prepare it for disposal.

(45) "Reclamation" means to process an ash waste in order to recover usable products.

(46) "Utilization" means consuming, expending, exhausting or using an ash waste.

(47) "Sole source aquifer" means an aquifer designated by the Environmental Protection Agency under section 1424e of the Safe Drinking Water Act (P.L. 93-523).

(48) "Solid waste" means all putrescible and nonputrescible solid and semisolid wastes, including but not limited to garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles or parts thereof, and recyclable commodities. This includes all liquid, solid, and semisolid materials that are not the primary products of public, private, industrial, commercial, mining, and agricultural operations. Solid waste includes, but is not limited to, sludge from wastewater treatment plants, septage from septic tanks, woodwaste, dangerous waste, and problem wastes.

(49) "Special incinerator ash" means ash residues that result from the operation of incineration or energy recovery facilities managing municipal solid waste from residential, commercial, and industrial establishments, if the ash residues (a) would otherwise be regulated as hazardous wastes under chapter 70.105 RCW; and (b) are not regulated as a hazardous waste under the Federal Resource Conservation and Recovery Act, 42 U.S.C. Sec 6901 et seq.

(50) "Spill" means any accidental discharges or overflow of fluids or processed water from contained areas or holding tanks to floor drains or a municipal sewer system.

(51) "Stabilization" or "solidification" means a technique that limits the solubility and mobility of waste constituents. Solidification immobilizes a waste through physical means and stabilization immobilizes a waste by bonding or chemically reacting with the stabilizing material.

(52) "Storage" means the temporary holding (no longer than forty-five days from date of production) of a limited amount (not to exceed thirty days worth of daily production) of special incinerator ash.

(53) "Subsidence" means a sinking of the land surface due to the removal of solid mineral matter or fluids from the subsurface.

(54) "Surface impoundment" means a facility or part of a facility that 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) designed to hold an accumulation of liquids or sludges. The term includes holding, storage, settling and aeration pits, ponds or lagoons, but does not include injection wells.

(55) "Treatment" means those engineered physical or chemical processes to make special incinerator ash safer for transport, amenable for energy or material resource recovery, amenable for storage or disposal, or reduced in volume.

(56) "Unstable slopes" means any area where the mass movement of earthen materials i.e., landslides, rockfalls, mudslides, slumps, earth flows, or debris flow is likely to occur.

(57) "Vadose zone" means that portion of a geologic formation in which soil pores contain some water, the pressure of that water is less than atmospheric pressure, and the formation occurs above the zone of saturation.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-100, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-100, filed 4/30/90, effective 5/31/90.]

WAC 173-306-150 Prohibition of surface impoundments, land treatment and municipal solid waste codisposal of ash. No person may manage any special incinerator ash in a surface impoundment, land treatment facility as defined in WAC 173-306-100, or codispose with municipal solid waste.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-150, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-150, filed 4/30/90, effective 5/31/90.]

WAC 173-306-200 Generator management plans. (1) Applicability. These standards apply to special incinerator ash generators that incinerate more than twelve tons of municipal solid waste per day. Existing generators shall meet the requirements of this section within six months after the effective date of this chapter.

(2) Management plans procedures.

(a) Before generating or managing any special incinerator ash, any generator subject to this section shall submit a generator management plan to the department for review and approval. The department may publish guidelines on the form and content of management plans consistent with this chapter. Within thirty days of receipt, the department shall determine whether the plan is factually complete and so notify the generator.

(b) Upon receipt of a complete generator management plan, the department shall give notice of its receipt of a proposed management plan to the public and to interested persons for public comment for thirty days after the date of publication.

(c) The department shall also perform the following additional public notification requirements:

(i) Mail the notice to persons who have expressed an interest in being notified;

(ii) Mail the notice to other state agencies and local governments with a regulatory interest in the proposal;

(iii) The public notice shall include a statement that any person may express their views in writing to the department within thirty days of the last date of publication;

(iv) Any person submitting written comment or any other person upon request, may obtain a copy of the department's final decision;

(v) The department shall add the name of any person, upon request, to a mailing list to receive copies of notices for all applications within the state or within a geographical area.

(d) The department shall review each generator management plan to determine whether the generator management plan complies with this chapter and chapter 70.138 RCW, including whether the necessary ash disposal permit has been or is likely to be issued.

(e) Within sixty days of receipt of a complete generator management plan, the department may approve, approve with conditions, or reject the submitted generator management plan. Approval may be conditioned upon additional requirements necessary to protect employees, human health, and the environment, including special management requirements such as waste and ash segregation, or treatment techniques such as neutralization, detoxification, and solidification or stabilization.

(f) All generators shall comply with their individual approved management plan. No generator may construct and operate an incineration or energy recovery facility without an approved management plan.

(g) Any generator operating under an approved generator management plan shall notify the department and the department may require resubmission of the generator management plan when there is a proposed material change in the ash management of the special incinerator ash collection and/or handling system.

Upon receipt of the revised generator management plan, the department shall proceed according to subsection (2) of this section.

(3) Generator management plan requirements. Before managing special incinerator ash, all applicable generators shall develop generator management plans. Generator management plans shall show how the following requirements are met:

(a) Planning requirements:

(i) All generators shall demonstrate how the management of ash, including disposal, complies with the city and county comprehensive solid waste management plan of RCW 70.95.080, as applicable.

(ii) All generators shall demonstrate how ash management areas comply with or are a part of the spill prevention plans.

(b) Requirements for managing solid waste to reduce ash toxicity and ash quantity. All generators shall:

(i) Conduct annual municipal solid waste compositional studies to identify kinds and amounts of toxic metals, including cadmium and lead, other hazardous materials, halogenated plastics, and other substances that contribute to the toxicity of special incinerator ash;

(ii) Establish policies, procedures, incentives, and treatment methods to remove toxic metals in municipal solid waste before incineration or energy recovery;

(iii) Establish procedures to insure that dangerous wastes are not knowingly accepted at the incineration or energy recovery facility including developing lists of consumer or commercial items that may or may not be acceptable for incineration;

(iv) Establish a timetable for implementing (b)(i), (ii), and (iii) of this subsection, and a method for evaluating the effectiveness of the program in reducing the toxicity and volume of special incinerator ash.

(c) Collection and handling requirements.

(i) All incineration or energy recovery facilities must be designed and operated to prevent fugitive dust emissions and direct exposure of the ash to the weather. Special incinerator ash must be collected, stored, and handled in enclosed buildings or the equivalent (e.g., covered conveyors and transfer points). This requirement is not applicable to ferrous metal separated from bottom ash.

(ii) Floor or surface drains serving ash collection, storage, and handling areas must not be connected to uncontaminated storm water runoff drains. Spills and process waters must be handled in one or more of the following methods:

(A) Reused in the process;

(B) Discharged to surface waters under a National Pollution Discharge Elimination System Permit issued under chapter 173-220 WAC;

(C) Discharged to surface water, groundwater, or a municipal sewer system under a state discharge permit issued under chapter 173-216 WAC;

(D) Injected through wells under an underground injection control permit issued under chapter 173-218 WAC; or

(E) Managed in another method approved by the department.

(iii) All incineration and energy recovery facilities must be designed and operated to comply with chapter 296-62 WAC, the general occupational health standards.

(iv) The percentage of carbon in bottom ash may not exceed six percent by weight, dry, as determined by ASTM D3178-84 or other methods approved by the department. Alternative carbon content limits may be established by the department, upon a demonstration by the owner or operator that methane generation and settlement does not exceed levels associated with bottom ash meeting the six percent carbon standard. Representative samples must be taken according to the guidelines established by the department.

(d) Storage requirements.

(i) Ash must be stored in totally-enclosed buildings, in leak-proof containers, or in tanks;

(ii) Storage may not exceed forty-five days from the date of generation of the ash, and/or the storage amount may not exceed thirty days of daily production;

(iii) Storage must be in an area served by the floor and surface drain requirements in (c)(ii) of this subsection.

(e) Ash from an incineration or energy recovery facility must be transported to an offsite or on-site disposal facility in covered and sealed vehicles or containers to avoid wind dispersal or fluid leakage. Owners and operators shall prevent ash trackout onto the site and the public right of way by employing tire washing or any equivalent means. Contaminated washwaters must be disposed of according to (c)(ii) of this subsection.

(f) Waste management accountability. All owners or operators of incineration or energy recovery facilities shall:

(i) Establish procedures acceptable to the department for tracking movements of special incinerator ash from the point of generation and/or handling to the site of final deposit or disposal. The tracking method may include inventory control

and tracking systems, scale, ticket, and receipt tracking, gate logs, operating logs, or material balances;

(ii) File a report with the department if the owner or operator has not confirmed that an ash waste has been received at the intended destination within forty-five days of the date the waste was accepted by the transporter. The report must include:

(A) A legible copy of the shipping paper or manifest for which the owner or operator does not have confirmation of delivery; and

(B) A cover letter signed by the generator or his representative explaining the efforts taken to locate the waste and the results of these efforts.

(g) Other state and local requirements. All generators shall comply with all federal, state, and local environmental and industrial hygiene right-to-know laws and rules, including chapter 197-11 WAC, the State Environmental Policy Act rules; chapter 173-304 WAC, the Minimum functional standards for solid waste handling; and chapter 173-434 WAC, the air emission rules for incinerators.

(4) Annual report requirements. All generators shall submit annual reports to the department by March 1 of the following calendar year on forms specified by the department specifying:

(a) Annual amounts, in tons, of:

(i) Municipal solid waste incinerated;

(ii) Bottom ash generated; and

(iii) Flyash/scrubber residue generated.

(b) Disposal sites for all special incinerator ash. For multiple disposal sites, the amounts of disposal that are occurring in tons per year;

(c) Permittee's name, address, telephone number, date of permit issuance and expiration date for the disposal sites listed in (b) of this subsection;

(d) Designation test results. The results of testing bottom ash and flyash/scrubber residues separately and combined flyash and bottom ash on representative samples taken each quarter of the year and subjected to the criteria of WAC 173-303-100. Results of testing bottom ash quarterly for carbon residue according to subsection (3)(c)(iv) of this section must be included unless otherwise approved by the department. After one year of testing, the department may reduce this requirement if a less frequent program can provide adequate data to determine the effectiveness of an ash toxicity reduction program. Representative sampling methods shall follow guidelines specified by the department;

(e) Toxics separation test results. The results of testing bottom ash and flyash separately for toxic metals from samples taken in (d) of this subsection must be included, in order to judge the progress made in toxic metals separation and reduction;

(f) Special test results. The results of testing bottom ash and flyash separately for dioxins and dibenzofurans on a composite sample made from the eight quarterly samples taken in (d) of this subsection must be included; and

(g) Ambient lead and cadmium samples taken in the air and soil respectively at the property boundary must be included to demonstrate compliance with the performance standard of WAC 173-306-440 (2)(b) and (c). The samples must be taken annually for cadmium and quarterly for lead, unless otherwise approved by the department.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-200, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-200, filed 4/30/90, effective 5/31/90.]

WAC 173-306-300 Permit requirements for disposal facilities. (1) Applicability. The permit standards of WAC 173-306-300 through 173-306-330 apply to disposal facilities as defined in WAC 173-306-100. These standards do not apply to generators of special incinerator ash who only handle, store and collect ash on-site and transport ash offsite, nor to facilities specifically excluded under WAC 173-306-400 through 173-306-490.

(2) No disposal facility may be established, constructed, altered, expanded, or closed, until the owner or operator has obtained a permit issued under this chapter or a modified permit issued under WAC 173-306-310(3).

(3) Effective dates for permit requirements. The permit requirements of this section apply to all applicable existing, new or expanding disposal facilities within six months after the effective date of this chapter.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-300, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-300, filed 4/30/90, effective 5/31/90.]

WAC 173-306-310 Permit procedures. (1) Application procedures.

(a) Persons owning or operating new or expanded ash disposal facilities shall apply to the department for a permit, before accepting any special incinerator ash for disposal. These procedures apply to permit renewal. Monofill owners who have successfully complied with the requirements for Type B design in WAC 173-306-450 (4)(a)(i) during the eighteen-month demonstration period shall apply for a permit before using the Design B liner. Applicants shall file two copies of the application with the department that have:

(i) Been signed and notarized as correct by the owner and operator; and

(ii) Attached evidence of compliance with the requirements of chapter 197-11 WAC, the State Environmental Policy Act rules.

(b) Permit applications must contain the information set forth in WAC 173-306-330 in order to be considered complete. Upon receipt of a permit application, the department shall review the application for completeness and notify the permit applicant accordingly.

(c) Within thirty days of receipt of a complete application, the department shall give notice of its receipt of a proposed complete permit application to the public and to interested persons for public comment for thirty days after the date of publication.

(d) The department will perform the following additional public notification requirements:

(i) Mail the notice to persons who have expressed an interest in being notified;

(ii) Mail the notice to other state agencies and local governments with a regulatory interest in the proposal;

(iii) The public notice shall include a statement that any person may express his or her views in writing to the department within thirty days of the last date of publication;

(iv) Any person submitting written comment or any other person, upon request, may obtain a copy of the department's final decision; and

(v) The department shall add the name of any person, upon request, to a mailing list to receive copies of notices for all applications within the state or within a geographical area.

(2) Issuance procedures.

(a) The department shall review each completed application to determine:

(i) Whether the disposal facility meets the requirements of this chapter;

(ii) Whether the disposal facility has been adequately addressed in the city and county comprehensive solid waste management plan as applicable; and

(iii) Whether the disposal facility complies with other environmental laws and rules.

(b) The department may approve, deny, or conditionally approve a completed permit application within sixty days of receipt of the department's notice.

(c) The department may issue up to five-year term permits for ash disposal; applications for reissuance of permits must be made at least six months before permit expiration. The applicant and the department shall follow the procedures of WAC 173-306-310 (1) and (2) in applying for and reissuing permits.

(3) Modification and revocation procedures. When the department obtains any information justifying modification, or the applicant applies for modification of an existing permit, the department may modify or revoke and reissue the permit according to the procedures of this section. An updated application may be requested if necessary. When a permit is modified only the conditions subject to modification are reopened. If a permit is revoked and reissued the entire permit is reopened and subject to revision and the permit is reissued for a new term.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-310, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-310, filed 4/30/90, effective 5/31/90.]

WAC 173-306-320 Demonstration and class-use permits. (1) Demonstration permits. Demonstration permits must be required for persons utilizing ash (see WAC 173-306-490 (2)(b)). In addition, persons applying for a utilization permit must demonstrate that the proposed utilization will successfully meet the requirements of WAC 173-306-490 (2)(b)(ii) before full scale reuse or utilization is practiced.

(a) The demonstration permit will be issued in accordance with the procedures of WAC 173-306-310;

(b) The demonstration permit shall address those requirements necessary to meet the standards of WAC 173-306-490 (2)(b)(ii) and (iii), and show that a disposal facility meeting the requirements of this chapter is available in case the demonstration fails or this permit is revoked;

(c) The demonstration permit shall provide a specific time period and a limit on the quantity of ash that will be used for the demonstration; the department may extend the demonstration period as a modification of the demonstration permit;

(d) Unless otherwise approved by the department, the permittee shall submit a report to the department within ninety days of the end of the demonstration. The report shall contain the results of all field tests and laboratory analyses and all data developed during the demonstration period. The department shall then use the information to determine whether or not there is adequate information to issue a class-use permit that will incorporate conditions sufficient to provide compliance with all requirements of WAC 173-306-490 (2)(b)(ii) and (iii). If the information is adequate, the department will issue a class-use permit under the provisions of this section. If the information is inadequate, the department may, as the situation warrants, either issue a modification to the demonstration permit in accordance with the procedures of WAC 173-306-310(3) and this subsection, or deny the class-use permit application.

(2) Class-use permits. Class-use permits are required for persons who distribute utilized ash on the land in a manner that constitutes disposal. The permit is issued to the seller or distributor of utilized ash or ash products to a class of users.

(a) The class-use permit will be issued in accordance with the procedures of WAC 173-306-310;

(b) The class-use permit shall contain those requirements necessary to meet the standards of WAC 173-306-490 (2)(b), including reporting requirements; and

(c) The department will place limitations on the class of users of utilized ash or ash products if it is shown that the limits are necessary to protect human health and the environment.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-320, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-320, filed 4/30/90, effective 5/31/90.]

WAC 173-306-330 Application contents for permits. (1) Application contents for permits for new or expanded facilities.

(a) All permit applications shall contain the following:

(i) A general description of the facility;

(ii) The types of ash to be handled at the facility;

(iii) The plan of operation required by WAC 173-306-405(3) (except for demonstration and class-use permits, WAC 173-306-320);

(iv) The operating log required by WAC 173-306-405(4) (except for demonstration and class-use permits, WAC 173-306-320);

(v) The inspection schedule and inspection log required by WAC 173-306-405.

(b) Application contents for monofill facilities. In addition to the requirements of (a) of this subsection, each monofill application for a permit must contain:

(i) A hydrogeological assessment of the facility that addresses:

(A) Local/regional geology and hydrology, including holocene faults within two hundred feet of the active area and three thousand feet of all other faults, unstable slopes, and subsidence areas on site; or a department approved geologic hazard assessment study;

(B) Evaluation of bedrock and soil types and properties;

(C) Depths to groundwater or aquifer(s), or both;

(D) Direction and flow rate of the uppermost aquifer;

(E) Direction of regional groundwater;

(F) Quantity, location, and construction (where available) of private and public wells within a two thousand foot radius of site;

(G) Tabulation of all water rights for groundwater and surface water within a two thousand foot radius of the site;

(H) Identification and description of all surface waters within a one-mile radius of the site;

(I) Background and surface water quality assessment, and for expanded facilities, identification of impacts to date of applicant's existing facilities upon ground and surface waters from monofill leachate discharges;

(J) Calculation of a site water balance;

(K) Conceptual design of a groundwater and surface water monitoring system, including proposed installation methods for these devices and, where applicable, a vadose zone monitoring plan;

(L) Land use in the area, including nearby residences;

(M) Topography of the site and surrounding areas; and

(N) Drainage pattern of the site and surrounding areas.

(ii) Preliminary engineering report/plans and specifications that address:

(A) How the facility will meet the siting standards of WAC 173-306-350;

(B) Relationship of facility to city and county solid waste comprehensive plan as applicable and the basis for calculating the facility's life;

(C) The design of bottom and side liners;

(D) Identification of materials for daily cover and borrow sources for final cover and soil liners;

(E) Interim/final leachate collection, treatment, and disposal;

(F) Leachate detection where applicable;

(G) Fugitive dust controls;

(H) Trench design, fill methods, elevation of final cover and bottom liner, and equipment requirements;

(I) The run-on and runoff system;

(J) The design to avoid washout;

(K) Filling phases, interim cover and final cap elevation; interim cover should be minimized depending on site specific topography and projected filling phases;

(L) Closure/post-closure design, construction, maintenance, and land use;

(M) Signs, fencing, and road paving; and

(N) Scales, employee amenities, communication, and unloading areas.

(iii) An operation plan that addresses:

(A) Operation and maintenance of leachate collection, treatment, and disposal systems;

(B) Operation and maintenance of fugitive dust controls;

(C) Monitoring plans for groundwater, surface water, soils and ambient air to include sampling technique, frequency, handling, and analysis requirements;

(D) Safety and emergency accident/fire plans;

(E) Routine filling, grading, cover, and housekeeping; and

(F) Record system to address records on weights (or volumes), number of vehicles, and the types of waste received.

(iv) A closure plan that addresses:

(A) Estimate of closure season/year;

(B) Capacity of site in volume and tonnage;

(C) Maintenance of active fill versus completed, final covered acreage;

(D) Estimated closure construction timing and notification procedures;

(E) Inspection by regulatory agencies;

(F) Items required in WAC 173-306-410(3); and

(G) Identification of final closure cost including cost calculations and funding mechanisms.

(v) A post-closure plan that addresses:

(A) Estimated time period for post-closure activities;

(B) Site monitoring of ash monofill, soil, air, groundwater, and surface water;

(C) Deed clause changes, land use, and zoning restrictions;

(D) Maintenance activities to maintain cover and runoff systems;

(E) Items required in WAC 173-306-410(6);

(F) Identification of post-closure costs including cost calculations and funding mechanisms; and

(vi) Other information as required by the department.

(c) Application contents for treatment (including solidification and stabilization) standards. In addition to the requirements of (a) of this subsection, each application for a treatment permit must contain:

(i) Preliminary engineering reports/plans and specifications that address:

(A) The chemical and physical principle(s) upon which the treatment is based, including laboratory, pilot plant, prototype, or full-scale data with sufficient detail to assure the department that the treatment process is feasible and to allow the department to specify capacity and operating conditions;

(B) Tank, reaction vessel, furnace, total-enclosed treatment facility and container designs and the basis for selecting the materials of construction and the thickness of the treatment device (such as corrosion data) or protective lining;

(C) Fugitive dust controls, including conveyor, transport, unloading, and building design;

(D) Instrumentation and process control design to assure operating within conditions specified in the permit;

(E) Warning signs and occupational health and safety engineering controls;

(F) Monitoring equipment; and

(G) Other factors as required by the department.

(ii) An operation plan that addresses:

(A) Operation and maintenance of the treatment device;

(B) Operation and maintenance of fugitive dust controls;

(C) Monitoring as required in WAC 173-306-500 and the department on a case-by-case basis; and

(D) Safety, occupational health, and emergency accident/fire plans.

(iii) A closure plan that addresses:

(A) Estimate of closure year and cost;

(B) Methods of removing wastes and cleaning or decontaminating reaction devices and final disposal of both;

(C) Closure timing and notification procedures;

(D) Final inspection by regulatory agencies;

(E) Items required in WAC 173-306-410(3); and

(iv) Other information as required by the department.

(d) Application contents for utilization facilities. In addition to the requirements of (a) of this subsection, each application for utilization must contain:

(i) For accumulation before utilization facilities:

(A) The method of calculating the percent of ash being reused within a calendar year; and

(B) Compliance with the generator management plan storage requirements of WAC 173-306-200 (3)(d)(i) and (ii) if accumulation is by the generator; or

(C) Compliance with the monofill facility standards of WAC 173-306-440 if accumulation is by a disposal facility.

(ii) For reuse constituting disposal facilities:

(A) Information supplied by the applicant pertaining to the factors of WAC 173-306-490 (2)(b)(iii); and

(B) Other information as required by the department.

(2) Application contents for permits for existing facilities. Owners or operators of existing facilities applying for a permit to comply with the requirements of WAC 173-306-310 shall include:

(a) The information required in subsection (1)(a) of this section; and

(b) Other information as required by the department.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-330, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-330, filed 4/30/90, effective 5/31/90.]

WAC 173-306-340 Engineering reports, plans and specifications required in permits. (1) Before constructing or modifying disposal facilities, final engineering reports, plans and specifications must be submitted to and approved by the department according to a compliance schedule specified in the permit. The engineering report for a disposal facility must be sufficiently final so that plans and specifications can be developed from it without substantial changes.

(2) All final engineering reports, plans and specifications should be submitted by the owner or operator consistent with the compliance schedule in the permit and at least thirty days before the time approval is needed. The department will review and comment on and may approve (or conditionally approve) or disapprove the plans and reports within the thirty-day period unless circumstances prevent, in which case the owner or operator will be notified and informed of the reason for the delay.

(3) The final engineering report may be submitted before or concurrently with the final plans and specifications.

(4) The department will review the documents to ascertain that the proposed facility will be:

(a) Designed, constructed, operated, maintained, and closed to meet the requirements of the permit issued under this chapter; and

(b) Consistent with good engineering practices.

(5) Within thirty days after acceptance by the owner or operator of or modification to an ash disposal facility, a professional engineer in responsible charge of inspection of the project shall submit to the department one complete set of record drawings or as-builts, and a declaration stating the facilities were constructed in accordance with the provisions of the construction quality assurance plan and without significant change from the department approved plans and specifications.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-340, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-340, filed 4/30/90, effective 5/31/90.]

WAC 173-306-345 Construction quality assurance plan. (1) Before construction or modification, a detailed plan that shows how adequate and competent construction inspection will be provided to insure compliance with the requirements of this chapter and the approved engineering documents must be submitted to and approved by the department. The plan must be submitted according to a schedule specified in the permit.

(2) The construction quality assurance plan shall include:

(a) A construction schedule summarizing planned construction activities, noting sequence interrelationships, durations, and terminations;

(b) A description of construction management, organization management procedures, lines of communication, and responsibility;

(c) A description of anticipated quality control testing, including type of test, frequency, and who will perform the tests;

(d) A description of the construction inspection program including inspection responsibilities, anticipated inspection frequency, deficiency resolution, and inspector qualifications; and

(e) For monofills, a description of how WAC 173-306-440 (4)(d) is to be met.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-345, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-345, filed 4/30/90, effective 5/31/90.]

WAC 173-306-350 Incinerator ash siting standards for disposal facilities. (1) Applicability. These standards apply to all new or expanded monofills. These standards do not apply to:

(a) Existing monofills or monofills that have closed before the effective date of this chapter; or

(b) Treatment, utilization, or processing facilities.

(2) Siting standards.

Owners or operators of all applicable disposal facilities shall, at the time of permit application, meet the following locational standards:

(a) Geology. No facility may be located within two hundred feet, measured horizontally, from a fault that has had displacement in holocene times. All faults within three thousand feet of a facility must be identified and evaluated under WAC 173-306-330(1), where existing geologic information is available or can be obtained with reasonable effort. For sites for which fault information cannot reasonably be obtained, a geologic hazard assessment performed by an experienced, qualified geologist may be substituted for this siting criteria, if the study methods are reviewed and approved by the department before the investigation.

(b) Groundwater.

(i) No facility may be located where the depth from the lowest point of the bottom liner to the seasonal high water level of the upper most aquifer of beneficial use is less than ten feet or one hundred twenty days travel time hydraulically, whichever is greater.

(ii) No facility may be located over a sole source aquifer.

(iii) No facility's active area may be located closer than one thousand feet to the nearest downgradient groundwater intake for domestic water in use and existing at the time of

permit application unless the owner or operator can show that the active area is no less than one hundred twenty days travel time hydraulically to the nearest downgradient groundwater intake for domestic water.

(c) Natural soils. No facility may be located:

(i) Where known subsidence exists within the facility boundary;

(ii) In an area where unstable slopes may impact the active area of the facility;

(iii) Where weak or unstable soils exist within the proposed facility boundary, unless the structural stability of the soils is mitigated through engineering practices. (The following soils or conditions are defined as weak or unstable: Organic soils, expansive soils, liquefaction sands, soft clays, sensitive clays, loess and quick conditions.)

(d) Flooding. No facility's active area may be located within the one hundred-year flood elevation as indicated in the most current Federal Emergency Management Agency maps.

(e) Surface water. No facility's active area may be located within five hundred feet, measured horizontally, of the ordinary high water mark of any perennial surface water body.

(f) Sensitive areas. No facility may be located:

(i) In an area that would result in the taking of species or the direct elimination of critical habitat for federal or state listed threatened or endangered species;

(ii) In a wetland as defined by the United State Fish and Wildlife Service (Cowardin et al. 1979);

(iii) In a shoreline of the state under the jurisdiction of the Shoreline Management Act;

(iv) In an area classified as a wilderness area as defined by the Wilderness Act of 1964 (P.L. 88-577);

(v) In a state or federally designated wildlife refuge or a game farm;

(vi) In an area with city, county, state, or federal designation as a park or recreation area or any area provided for under chapter 79.70 RCW, natural area preserves; and

(vii) In an area with city, county, state, or federal designation as an archaeological or historic area or a national monument.

(g) Land use. No facility may be located so that its active area is closer than two hundred feet to the facility property line. The active area may be no closer than one thousand feet to the nearest housing unit in an existing residential development. The one thousand-foot rule may be evaluated on a case-by-case basis in rural areas and unincorporated towns.

(h) Climatic factors. No facility may be located in an area that has a history of severe climatic factors without engineered protection to mitigate those factors. Severe climatic factors, include but are not limited to, high annual rainfall, extreme temperatures (high or low), and high winds.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-350, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-350, filed 4/30/90, effective 5/31/90.]

WAC 173-306-400 Ash disposal facility standards. (1) Applicability. The standards of WAC 173-306-405 through 173-306-470 are the ash disposal standards and apply to all disposal facilities except ash disposal facilities that are engaged in closure or were closed before the effective date of this chapter.

(2) Standards for permits. The standards of WAC 173-306-405 through 173-306-470 must be used as the basis for permitting as required in WAC 173-306-300.

(3) Effective dates.

(a) All existing ash disposal facilities not in conformance with these standards must be placed on compliance schedules as part of the permit issued in WAC 173-306-300. Full compliance must be met within three years of the effective date of this chapter. However, the following facility standards must be met within eighteen months of the effective date of this chapter:

(i) The general facility standards of WAC 173-306-405;

(ii) The operating and maintenance standards of WAC 173-306-440(5); and

(iii) The monitoring requirements of WAC 173-306-500.

(b) All new and expanded facilities shall meet the ash disposal facility standards of WAC 173-306-405 to 173-306-470 after the effective date of this chapter.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-400, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-400, filed 4/30/90, effective 5/31/90.]

WAC 173-306-405 General facility operational standards. (1) Applicability. All special incinerator ash disposal facilities shall meet the requirements of this section.

(2) Imminent hazard. Notwithstanding any provisions of this chapter, enforcement actions may be brought in the event that the management practices of an ash disposal facility present an imminent and substantial hazard to the health of employees, the public health or the environment.

(3) Plan of operation. Each owner or operator shall develop and use the plan of operation required during the permitting process in WAC 173-306-300. The plan shall describe the facility's operation and convey to the operating personnel the concept of operation intended by the designer. The facility must be operated in accordance with the plan. Modifications to the plan must be approved by the department. The plan of operation must be available for inspection at the request of the department. Each plan of operation shall include:

(a) Ash management during the facility's active life;

(b) Frequency and methods of inspections and monitoring;

(c) Employee safety and training that addresses:

(i) Protection from exposure and contact with ash;

(ii) Employee training;

(iii) Medical monitoring; and

(iv) A safety plan or procedure;

(d) Actions to take for mitigating any sudden release of ash to surface water or dispersal by wind;

(e) Modifications to the plan permit, or plan of operation, or both, in the event of groundwater contamination;

(f) Equipment maintenance, particularly for leachate collection and treatment; and

(g) Other details as required by the department.

(4) Recordkeeping. The facility owner or operator shall keep a written operating record at the facility that must be furnished upon request and made available at all reasonable times, to any employee of the department.

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

(i) The type and quantity of each ash shipment received or managed on-site and the methods and dates of management at the facility;

(ii) Records and inspection results as required by subsections (5) and (6) of this section;

(iii) Monitoring, testing, or analytical data where required by WAC 173-306-500;

(iv) All closure and, for final deposit, post-closure cost estimates required for the disposal facility; and

(v) Deviations from the plan of operation specified in subsection (3) of this section.

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

(5) Reporting. Each owner or operator shall prepare and submit a copy of the annual report to the department by March 1 of the following year. The annual report shall cover facility activities during the previous year and must include the following information:

(a) The name and address of the disposal facility;

(b) The calendar year covered by the report;

(c) Annual quantity in tons and the type of ash accepted by the disposal facility and the method of management;

(d) Results of soil, air quality, and groundwater monitoring required in WAC 173-306-440;

(e) The most recent closure cost estimate and, for final deposit monofills, post-closure cost estimates under WAC 173-306-410; and

(f) Other information required by the department.

(6) Inspections. The owner or operator shall inspect the facility to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of ash to the environment or a threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The owner or operator shall keep an inspection log or summary including, at a minimum, the date and time of inspection, the printed name and the hand-written signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action. The log or summary must be kept at the facility or other convenient location if permanent office facilities are not on-site, for at least three years from the date of inspection. Inspection records must be made available to the department upon request.

(7) Other state and local requirements. All owners or operators of ash disposal facilities shall comply with all state and local laws and rules such as zoning, land use, fire protection, industrial safety and hygiene, water pollution, air pollution, nuisance and aesthetics.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-405, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-405, filed 4/30/90, effective 5/31/90.]

WAC 173-306-410 General closure and post-closure requirements. (1) Applicability. The closure requirements of subsections (2), (3), and (4) of this section apply to all disposal facilities. The post-closure requirements of subsections (5), (6), and (7) apply to monofills subject to WAC 173-306-440.

(2) Closure performance requirements. Each owner and operator shall close the facility in a manner that:

(a) Minimizes the need for further maintenance;

(b) Controls, minimizes, or eliminates threats to human health and the environment from post-closure escape of ash constituents, leachate, monofill gases, contaminated rainfall or ash decomposition products to the ground or soil, groundwater, surface water, and the atmosphere; and

(c) Prepares the facility for the post-closure period.

(3) Closure plan and amendment. Closure as defined in WAC 173-306-100 includes, but is not limited to, grading, seeding, landscaping, contouring and screening.

(a) Each owner or operator shall develop and use a plan of closure approved by the department as part of the permitting process of WAC 173-306-310.

(b) The closure plan shall project time intervals at which closure activities must be implemented, and shall identify estimated closure costs and project fund withdrawal intervals from the approved financial assurance instrument, where applicable.

(c) No owner or operator may begin disposal operations in any part of a facility until a closure plan for the entire facility has been approved by the department, and until a financial assurance instrument has been provided, as required by WAC 173-306-470.

(d) The department may determine at its discretion and for cause that a facility closure plan is invalid and may require an owner or operator to:

(i) Amend the facility closure plan and obtain the department's written approval; and/or

(ii) Cease facility operation or closure activities in whole or in part until an approved closure plan is obtained.

(e) Each owner or operator shall close the facility in accordance with the approved closure plan and all approved amendments.

(4) Closure procedures.

(a) Each owner or operator shall notify the department and, where applicable, the financial assurance instrument trustee, of the intent to implement the closure plan in whole or in part, no later than one hundred eighty days before the projected final receipt of waste at part of or at the entire facility.

(b) The owner or operator shall begin implementing the closure plan in part or whole within thirty days after receipt of a final volume of ash and/or attaining the final monofill elevation at part of or at the entire facility as identified in the approved facility closure plan.

(c) Ash may not be accepted for use in closure except as identified in the closure plan approved by the department, as required in subsection (3)(a) of this section.

(d) When facility closure is completed in part or whole, each owner or operator shall submit to the department:

(i) Facility closure plan sheets signed by a professional engineer registered in the state of Washington. The plan shall reflect all as-built changes to final closure construction as approved in the closure plan; and

(ii) An affidavit signed by the owner or operator and a professional engineer registered in the state of Washington

that the site has been closed in accordance with the approved closure plan.

(e) Maps and a statement of fact concerning the location of the final ash disposal must be recorded as part of the deed with the county auditor not later than three months after closure. Records and plans specifying ash amounts, locations and periods of operation must be submitted to the local zoning authority or the authority with jurisdiction over land use and must be made available for inspection.

(f) When the department finds the facility has been closed in accordance with the specifications of the approved closure plan and the closure requirements of this section, the department shall:

(i) Issue a certificate of closure for the site to the owner or operator and the department; and

(ii) Notify the owner or operator and the department that the facility post-closure period has begun in whole or in part on a specified date.

(5) Post-closure performance standard. Monofill owners or operators shall perform post-closure activities as needed to protect human health and the environment.

(6) Post-closure plan and amendment. Post-closure includes monitoring of groundwater, surface water, and air quality; maintenance of the facility, facility structures, and monitoring systems; and other activities deemed appropriate by the department.

(a) The owner or operator shall develop and use a post-closure plan approved as a part of the permitting process in WAC 173-306-310. The post-closure plan shall address facility maintenance and monitoring activities for a thirty-year period.

(b) The post-closure plan shall project time intervals at which post-closure activities are to be implemented, and identify post-closure cost estimates and projected fund withdrawal intervals from the selected financial assurance instrument, where applicable, for the associated post-closure costs.

(c) No owner or operator may begin disposal operations in any part of a facility until a post-closure plan for the entire facility has been approved by the department, and until a financial assurance instrument has been provided, where applicable, as required by WAC 173-306-470. Facility post-closure activities must be completed in accordance with the approved post-closure plan or the plan must be so amended with the approval of the department.

(d) The department may determine, at its discretion and for cause, that a facility post-closure plan is invalid and may require an owner or operator to:

(i) Amend the facility post-closure plan and obtain the department's written approval; and/or

(ii) Cease facility operation or closure activities in part or wholly until an approved post-closure plan is obtained.

(7) Post-closure procedures.

(a) Each owner or operator shall begin post-closure activities after completing closure activities outlined in subsection (4)(d)(i) and (ii) of this section. The department may direct that post-closure activities cease until the owner or operator has received the department's certification of closure and a notice to proceed with post-closure activities.

(b) When post-closure activities are complete, the owner or operator shall submit an affidavit to the department, signed by the owner or operator and a professional engineer registered in the state of Washington, stating why post-closure activities are no longer necessary.

(c) If the department finds that post-closure activities have stabilized the facility, the department may, at its discretion, authorize the owner or operator to gradually reduce or discontinue post-closure maintenance and monitoring activities. The department shall certify the end of the post-closure care period by issuing a certificate of post-closure completion to the facility owner or operator.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-410, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-410, filed 4/30/90, effective 5/31/90.]

WAC 173-306-440 Ash monofill facility standards. (1) Applicability. This section applies to owners and operators of facilities that monofill special incinerator ash, except as WAC 173-306-400 provides otherwise.

(2) Minimum standards for performance.

(a) Groundwater. Monofill owners or operators may not contaminate underlying groundwater beyond the point of compliance. Contamination and point of compliance are defined in WAC 173-306-100.

(b) Soil. Soils at the property boundary may not exceed the following limits for cadmium due to the facility operations based upon annual samples:

(i) The annual increase in cadmium loading in the upper six inches of soil with a pH equal to or greater than 6.5 may not exceed 0.5 kilograms per hectacre annually or a total accumulation of 20 kilograms per hectacre; and

(ii) The annual increase in cadmium loading in the upper six inches of soil with a pH less than 6.5 may not exceed a total accumulation of 5.0 kilograms per hectacre.

(c) Air quality. Monofill owners or operators may not cause a violation of an emission standard from any emission of particulates, dusts or gases associated with the operation and/or closure/post-closure of the landfill nor any ambient air quality standard at the property boundary including the following ambient lead standard:

The level of lead and its compounds measured as elemental lead in suspended particulate matter measured during a twenty-four hour sample taken at the downwind facility boundary may not exceed 1.5 micrograms per cubic meter of air due to the facility's operation or the latest national ambient air quality standards. The sampling frequency will be monthly unless otherwise approved by the department.

(d) Surface waters. Monofill owners or operators may not cause a violation of any receiving water quality standard or violate chapter 90.48 RCW from discharges of surface runoff, leachate, or any other liquid associated with a monofill.

(3) Siting standards. Monofill owners or operators receiving special incinerator ash shall comply with incinerator ash siting standards of WAC 173-306-350(2).

(4) Minimum design standards.

(a) Minimizing liquids. Monofill owners or operators shall minimize liquids admitted to active areas by:

(i) Covering according to subsection (5)(e) of this section.

(ii) Disposing of no ash containing free liquids unless approved by the department;

(iii) Designing, constructing, and maintaining runoff controls to restrict the chance of a runoff event from releasing contaminated runoff waters to an annual probability of one percent or less (one hundred-year event or greater). In meeting this requirement the following items are to be considered:

(A) The design of the containment structures should be selected based on the ability of the facility to store, test, and/or treat the runoff during a twenty-four hour or longer storm event.

(B) The design assumes that the storm event occurs during the final year of the active life of the monofill or at a time when the facility is most vulnerable to a storm that could produce the release of contaminated waters. The method of placement of the ash should be considered when determining the volume available for storage of runoff.

(C) A minimum of one foot of freeboard (measured from the invert of the emergency spillway) should be maintained following the occurrence of the design storm.

(D) An emergency spillway is to be constructed for the containment structure to provide controlled release of excess runoff waters in the case where the design storm is exceeded.

(iv) Design, construct, and maintain diversion channels, channel containment berms, culverts, pipes, and other drainage control features to pass and/or store run-on to restrict the chance of failure of the drainage control features to an annual probability of one percent or less (one hundred-year event or greater). In meeting this requirement the following items are to be considered:

(A) For those cases where the run-on waters are to be stored and/or treated, selection of the storm design should be based on the appropriate procedures governing runoff controls.

(B) For those cases where the run-on waters are to be diverted around the facility, the drainage control features should be sized to pass the run-on peak discharge (design flood) of a magnitude that has an annual exceedance probability of one percent or less (one hundred-year flood peak discharge or greater).

(C) Sufficient erosion protection and freeboard (one foot minimum) are to be provided for all drainage control features to preclude failure of those features during passage of the design flood.

(v) Submit engineering plans and specifications for any containment barrier equalling or exceeding as storage capacity of ten acre-feet to the department's dam safety section for review under RCW 90.03.350.

(b) Leachate systems. Monofill owners or operators shall:

(i) Install a department-approved leachate collection system sized according to water balance calculations or using other accepted engineering methods;

(ii) Install a leachate collection system to prevent no more than one foot of leachate developing at the topographical low point of the active area; and

(iii) Install a leachate treatment system to meet requirements of WAC 173-306-200 (3)(c)(ii)(B) through (E).

(c) Liner and final cap design. Ash monofill owners or operators shall comply with the requirements of WAC 173-306-450.

(d) Liner construction and inspection. Ash monofill owners or operators shall:

(i) Comply with the requirements of WAC 173-306-450.

(ii) Employ an independent third party as defined in WAC 173-306-100 to inspect the liners during construction and installation for uniformity, damage and imperfections (e.g., holes, cracks, thin spots, foreign materials) and quality of construction; and immediately after construction and installations to inspect:

(A) Synthetic liners and covers for tight seams and joints and the absence of tears, punctures or blisters; and

(B) Soil-based and admixed liners and covers for imperfections (e.g., lenses, cracks, channels, root holes) or structural nonuniformities that may affect liner permeability.

(e) Filling requirements for ash cells. Monofill owners or operators shall design and fill ash monofills in phases or cells, as defined in WAC 173-306-100. Only one cell may be open and in use at one time; each cell must be graded and covered with a flexible high density polyethylene liner or other material of equivalent mechanical strength and chemical resistance during the interim period before reaching final elevation. The liner must be 60 mils and have the ability to withstand weather conditions. The owner or operator shall provide, as part of the interim cover, a method of detecting and/or monitoring/inspecting the integrity and any possible failure of the interim cover.

(f) Fugitive dust controls. Monofill owners and operators shall:

(i) Employ tire washing for all ash-carrying vehicles as they leave the site or any equivalent method to prevent the trackout of ash onto the site and the public right of way. Contaminated wash-waters must be disposed of according to WAC 173-306-200 (3)(c);

(ii) Orient the major axis of the active area of the monofill with respect to the prevailing wind directions so as to minimize the effect of wind upon dispersion of special incinerator ash unless engineering designs can provide equivalent protection; and

(iii) Provide for paved approach and exit roads outside the active area with traffic separation and traffic control onsite and at the site entrance.

(g) Other design requirements. Monofill owners and operators shall:

(i) Post signs at each entrance to the active portion and at other locations, in sufficient numbers to be seen from any approach to the active portion. Signs must bear the legend "Danger - unauthorized personnel keep out" or an equivalent legend, and must be legible from a distance of twenty-five feet;

(ii) Have either:

(A) A twenty-four-hour surveillance system which continuously monitors and controls entry onto the active portion of the facility; or

(B) An artificial or natural barrier; or

(C) A combination of both, which completely surrounds the active portion of the facility, with a means to control access through gates or other entrances to the active portion of the facility at all times.

(iii) Provide for monitoring according to WAC 173-306-500 using a design approved by the department;

(iv) Weigh all incoming ash on scales or provide an equivalent method of measuring ash tonnage;

(v) Provide for employee facilities including shelter, toilets, handwashing facilities, and potable drinking water;

(vi) Provide for unloading areas to be as small as possible, consistent with traffic patterns and safe operation; and

(vii) Provide communication (such as telephones) between employees working at the monofill and on-site or offsite management offices to handle emergencies.

(5) Standards for operation and maintenance. All owners and operators shall:

(a) Prohibit the co-disposal of any other solid or hazardous waste in a special incinerator ash landfill;

(b) Comply with the requirements of the general operation standards, WAC 173-306-405;

(c) Control fugitive dust by wetting, by the use of dust suppressing substances, covering, compacting, or otherwise managing the active area of the monofill to control wind dispersal and prevent visible emissions of windblown dust. Road dust on unpaved roads must also be similarly controlled.

(d) Clearly mark the active area boundaries authorized in the permit, with permanent posts or using an equivalent method clearly visible for inspection purposes.

(e) Compact and cover ash daily before adding successive layers according to the requirements of WAC 173-306-450.

(f) Maintain the monitoring systems required in subsection (4)(g)(iii) of this section;

(g) Inspect the monofill weekly while it is in operation and after major storms to detect evidence of any of the following:

(i) Deterioration, malfunctions, or improper operation of run-on and runoff control systems and interim cover;

(ii) The presence of liquids in leak detection systems, where installed, to comply with subsection (4)(b) of this section. The department must be notified of any leaks into the leak detection system within seven days after detecting the leak and immediately remove any accumulated liquid. Notification shall include a schedule for determining the cause of the leak and any remedial measures or increased groundwater monitoring to assure that the performance standards of subsection (2)(a) of this section are met;

(iii) The presence of leachate in, and proper functioning of, leachate collection and removal systems; and

(iv) Proper functioning of engineered wind dispersal control systems.

(h) Record the inspections in the log as required in WAC 173-306-405(6).

(6) Closure and post-closure requirements.

(a) At final closure of the monofill or upon closure of any cell, the owner or operator shall cover the monofill or cell with a final cover designed and constructed according to subsection (4)(d) of this section and shall comply with all closure requirements of WAC 173-306-410;

(b) After final closure, the owner or operator must comply with all post-closure requirements of WAC 173-306-410, and must:

(i) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;

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

(iii) Maintain and monitor the leak detection system in accordance with subsection (4)(b) of this section, where such a system is present; the owner or operator shall immediately remove any accumulated liquid and notify the department of any leaks into the leak detection system within seven days after detecting the leak. Notification shall include a schedule for determining the cause of the leak and any remedial measures or increased groundwater monitoring to assure that the performance standards of subsection (2)(a) of this section are met;

(iv) Operate the leachate collection and removal system; and

(v) Maintain and operate the monitoring systems of WAC 173-306-500.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-440, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-440, filed 4/30/90, effective 5/31/90.]

WAC 173-306-450 Liner and final cap design and construction standards. (1) Applicability. This section applies to owners or operators of facilities that monofill combined or separated special incinerator ash, except as WAC 173-306-400 provides otherwise.

(2) Liner design.

(a) Owners or operators who monofill combined or separated fly ash and bottom ash shall comply with the requirements of Design A, subsection (3) of this section.

(b) Owners or operators who demonstrate ability to maintain the permeability requirements of Design B during an eighteen-month demonstration period may seek approval to use Design B following the demonstration period.

(3) Design A.

(a) General requirements. Owners or operators shall comply with the liner inspection requirements of WAC 173-306-440 (4)(d) and siting and design requirements of WAC 173-306-440 (3) and (4). In addition, owners or operators shall:

(i) Thoroughly compact ash residues. Owners or operators shall compact ash residues thoroughly by using compaction equipment.

(ii) Provide daily cover to prevent fugitive dust emissions and run-on and runoff discharges. Cover material may include high density polyethylene or any department approved equivalent material.

(b) Liner design. The liner must be an engineered liner of the following design from bottom to top:

(i) 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. The foundation slope must be a minimum of two percent;

(ii) Next, a single composite liner consisting of an engineered soil liner at least two feet thick that has permeability of 1×10^{-7} cm/sec or the equivalent upon which a synthetic liner of sixty mils high density polyethylene or other material of equivalent mechanical strength and chemical resistance is placed. Liner slopes must be a minimum of four percent;

(iii) Next, a leachate detection system consisting of a minimum of twelve inches of sand or equivalent material

with a permeability greater than or equal to 1 x 10^{-2} cm/sec with drain pipes;

(iv) Next, a synthetic liner of sixty mils high density polyethylene or other material of equivalent mechanical strength and chemical resistance;

(v) Next, a leachate collection and removal system that consists of a minimum of twelve inches of sand or equivalent material with a permeability greater than or equal to 1 x 10^{-2} cm/sec with drain pipes; and

(vi) A fabric filter placed between the drainage layer and the first lift of special incinerator ash.

(4) Design B. Owners or operators who monofill combined or separated fly and bottom ash shall comply with these design criteria.

(a) General requirements. Owners or operators shall comply with the liner inspection requirements of WAC 173-306-440 (4)(d) and siting and design requirements of WAC 173-306-440 (3) and (4). In addition, owners or operators shall:

(i) Compact ash residues to a permeability of 1 x 10^{-5} cm/sec. All ferrous material will be removed using magnetic separation or an equivalent method approved by the department so that the pozzolanic effect of compacted ash will not be impeded.

(ii) Lifts will be tested for ash permeability using guidance established by the department. Lift thickness before compaction may not exceed one foot.

(A) Design B liner design may be used as long as lift permeability tests at 1 x 10^{-5} cm/sec or less.

(B) If the ash permeability requirement cannot be maintained, the owner or operator shall immediately close the Design B cell according to the closure requirements of WAC 173-306-410 and subsection (5) of this section and resume disposal activities using the Design A liner.

(iii) Provide daily cover to prevent fugitive dust emissions and run-on and runoff discharges. Cover material may include high density polyethylene or any department approved equivalent material.

(b) Liner design. The liner must be an engineered liner of the following design:

(i) 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. Foundation slope must be a minimum of two percent;

(ii) Next, a single composite liner that consists of an engineered soil liner at least two feet thick that has a permeability of 1 x 10^{-7} cm/sec or the equivalent upon which a synthetic liner of sixty mils high density polyethylene or other material of equivalent mechanical strength and chemical resistance rests. Liner slopes must be a minimum of four percent;

(iii) Next, a leachate collection system that consists of a minimum of twelve inches of sand or equivalent material with a permeability greater than or equal to 1 x 10^{-2} cm/sec with drain pipes; and

(iv) A fabric filter placed between the drainage layer and the first layer of special incinerator ash.

(5) Final cap design. All owners or operators of special incinerator ash monofills shall comply with the following design requirements.

(a) The final cap shall maintain a surface slope between two and five percent and side slope of no more than thirty-three percent and shall consist, from bottom to top, of:

(i) Two feet of ash, well graded (with ferrous material removed and having proportional size distribution of ash particles) and thoroughly compacted;

(ii) Next, a layer, system, or mechanism capable of detecting cap failure;

(iii) Next, a fabric filter overlaid by at least two feet of clay that has a permeability of 1 x 10^{-7} cm/sec upon which a synthetic liner of sixty mils high density polyethylene or other material of equivalent mechanical strength and chemical resistance rests; and

(iv) Eighteen inches of native soil covered by six inches of topsoil.

(b) Final cap inspections must be done in accordance with the liner inspection requirements of WAC 173-306-440 (4)(d).

(c) In case of cap failure, immediately notify the department with a plan for remedial action.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-450, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-450, filed 4/30/90, effective 5/31/90.]

WAC 173-306-470 Financial assurance. (1) Applicability.

These standards apply to all new and expanded monofill facilities, and to existing monofill facilities that have not closed before or within twelve months after the effective date of this chapter.

(2) Cost estimate for closure.

(a) Each owner or operator shall prepare a written closure cost estimate as part of the facility closure plan. The closure cost estimate must be in current dollars and must represent the cost of closing the facility in accordance with the closure requirements in WAC 173-306-410.

(i) The cost estimate must be based on a reasonable cost estimate for completing design, purchase, construction, and other activities as identified in the facility closure plan as required under WAC 173-306-410;

(ii) The closure plan shall project intervals for withdrawal of closure funds from the closure financial assurance instrument to complete the activities identified in the approved closure plan;

(iii) The closure cost estimate may not be reduced by allowance for salvage value of equipment, ash, or the resale value of property or land.

(b) Each owner or operator must prepare a new closure cost estimate in accordance with (a) and (c) of this subsection whenever:

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

(ii) A change in the expected year of closure affects the closure plan; or

(iii) The department directs the owner or operator to revise the closure plan or closure cost estimate.

(c) Each owner or operator shall review the closure cost estimate thirty days before the anniversary date of the date on which the first closure cost estimate was prepared. The review shall examine all factors, including inflation, involved in estimating the closure cost. Any cost changes must be fac-

tored into a revised closure cost estimate. The revised cost estimate must be submitted to the department.

(d) During the operating life of the facility, and when the estimate has been adjusted in accordance with (c) of this subsection, the owner or operator shall make available for review the closure cost estimate prepared in accordance with (a) and (b) of this subsection.

(e) The department shall evaluate each cost estimate and may accept, or at its discretion require revision of, the cost estimate in accordance with its evaluation.

(f) The department may require the facility owner or operator to adjust the cost estimate in accordance with the department's review and direction.

(3) Financial assurance account for closure. Each owner or operator of special incinerator ash monofill facility shall establish a financial assurance account in an amount that, over the life of the facility, will accumulate funds at a rate that will enable premature closure during the monofill life. The total amount must be equal to the closure cost estimate prepared in accordance with subsection (2) of this section.

(a) Applicable monofill facilities that accept special incinerator ash must choose from the following financial assurance account options or combination of options:

(i) For monofill disposal facilities owned or operated by municipal corporations, the closure and post-closure reserve account must be handled in one of the following ways:

(A) Cash and investments accumulated and restricted for closure with an equivalent amount of fund balance reserved in the fund accounting for special incinerator ash activity; or published Budget Accounting Reporting System Manual; or

(B) The cash and investments held in a nonexpendable trust fund.

(ii) Closure trust fund established with an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The wording of the trust agreement must be acceptable to the department. The purpose of the closure trust fund is to receive and manage any funds paid by the owner or operator and to disburse those funds only for closure activities as identified in the approved closure plan.

(b) For private disposal facilities that accept public waste, established closure financial assurance accounts may not constitute an asset of the facility owner or operator.

(c) Any income in excess of the closure cost estimate accruing to the established closure financial assurance account will be used at the owner's discretion.

(d) Excess moneys remaining in the closure financial assurance account after the department has certified the completion of closure as identified in WAC 173-306-410 (4)(f)(i) must be returned to the owner or operator.

(4) Cost estimate for post-closure.

(a) Each owner or operator shall prepare a written post-closure cost estimate as part of the facility post-closure plan. The post-closure cost estimate must be in current dollars and must represent the total cost of completing post-closure activities for the facility for a thirty-year post-closure period in accordance with the post-closure requirements in WAC 173-306-410.

(i) The post-closure cost estimate must be based on a reasonable cost estimate for completing post-closure monitoring, maintenance, and other activities identified in the approved facility post-closure plan as required under WAC 173-306-410;

(ii) The post-closure plan shall project intervals for withdrawal of post-closure funds from the post-closure financial assurance instrument to complete the activities identified in the approved post-closure plan;

(iii) The post-closure cost estimate may not be reduced by allowance for salvage, value of equipment, ash, or the resale value of property or land.

(b) Each owner or operator shall prepare a new post-closure costs estimate for the remainder of the post-closure care thirty-year period in accordance with (a) and (c) of this subsection, whenever:

(i) Change in the post-closure plan increases the cost of post-closure care; or

(ii) The department directs the owner or operator to revise the post-closure plan or post-closure cost estimate.

(c) Each owner or operator shall review the post-closure cost estimate thirty days before the annual date on which the first post-closure cost estimate was prepared. The review shall examine all factors, including inflation, involved in estimating the post-closure cost. Any cost changes must be factored into a revised post-closure cost estimate and the revised cost estimate must be submitted to the department.

(d) During the operating life of the facility, the owner or operator shall keep the latest post-closure cost estimate prepared in accordance with (a) and (b) of this subsection available for review.

(5) Financial assurance account for post-closure. Each owner or operator of an applicable monofill facility shall establish a financial assurance account in an amount equal to the post-closure cost estimate prepared in accordance with subsection (4) of this section.

(a) Owners or operators of applicable monofill facilities that accept special incinerator ash shall choose from the following options or combinations of options for accounting for the financial assurance account:

(i) For monofill disposal facilities owned or operated by municipal corporations, the post-closure reserve must be handled in one of the following ways:

(A) Cash and investments accumulated and restricted for post-closure with an equivalent amount of fund balance reserved in the fund accounting for special incinerator ash activity; or

(B) Cash and investments held in a nonexpendable trust fund.

(ii) Post-closure trust fund established with an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The wording of the trust agreement must be acceptable to the department. The purpose of the post-closure trust fund is to receive and manage any funds paid by the owner or operator and to disburse those funds only for post-closure activities as identified in the approved post-closure plan.

(b) For private disposal facilities that accept public waste, established post-closure financial assurance accounts may not constitute an asset of the facility owner or operator.

(c) Any income accruing to the established post-closure financial assurance account will be used at the owner's discretion.

(d) Excess moneys remaining in the post-closure financial assurance account after the department has certified the completion of post-closure requirements identified in WAC 173-306-410 (7)(c) must be returned to the owner or operator.

(6) Closure/post-closure financial assurance account establishment and reporting.

(a) Closure and post-closure financial assurance funds must be generated at each facility by transferring a percentage of the facility user fees to the selected financial assurance instrument at the agreed upon rate to be specified in the closure and post-closure plans so that adequate closure and post-closure funds will be generated to ensure full implementation of the approved closure and post-closure plans.

(b) Each applicable facility owner or operator shall establish a procedure with the financial assurance instrument trustee for notification of nonpayment of funds to be sent to the Department of Ecology, Solid and Hazardous Waste and Financial Assistance Program, P.O. Box 47600, Olympia, WA 98504-7600.

(c) Each owner or operator shall file with the department an annual audit of the financial assurance accounts established for closure and post-closure activities, and a statement of the percentage of user fees diverted to the financial assurance instruments.

(i) For monofill disposal facilities owned and operated by municipal corporations, the closure reserve account, including each of the post-closure care years, must be audited according to the audit schedule of the office of state auditor and must be filed with the department of ecology.

(ii) For monofill disposal facilities not owned or operated by municipal corporations:

(A) Annual audits must be conducted by a certified public accountant licensed in the state of Washington, and must be filed with the department no later than March 31 of each year for the previous calendar year, including each of the post-closure care years.

(B) The audit shall also include calculations that demonstrate the proportion of closure completed during the preceding year as specified in the closure and post-closure plans.

(d) Owners or operators of an existing monofill disposal facility may submit to the department a written request with the annual audit asking for a waiver from applying user fees to generate the moneys necessary for the closure and/or post-closure financial assurance account.

(i) The waiver request should provide documentation to demonstrate the facility user fees are prohibitively high, and should include alternate methods for funding the facility's closure and/or post-closure financial assurance account;

(ii) The waiver request review procedure will be conducted according to WAC 173-306-900.

(7) Authorization for financial assurance account fund withdrawal for closure and post-closure activities.

(a) Each owner or operator will withdraw funds from the closure and/or post-closure financial assurance instrument as specified in the approved closure/post-closure plans;

(b) If the withdrawal of funds from the financial assurance instrument exceeds by more than five percent the withdrawal schedule stated in the approved closure and/or post-closure plan, the closure and/or post-closure plan must be amended.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-470, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-470, filed 4/30/90, effective 5/31/90.]

WAC 173-306-480 Treatment (including solidification and stabilization) standards. (1) Applicability. The standards of this section apply to treatment, as defined in WAC 173-306-100, of any special incinerator ash subject to this chapter. These standards do not apply to the manual or mechanical removal of ferrous metal from ash residues.

(2) Requirements. All owners and operators shall design, construct, operate, maintain, and close treatment facilities so as to:

(a) Meet the general facility standards of WAC 173-306-405;

(b) Only treat special incinerator ash in tanks, reaction vessels, furnaces (such as glass furnaces), containers, or totally enclosed treatment facilities (such as pipelines). No treatment process may be designed to occur in ash piles, surface impoundments, or land treatment facilities;

(i) The department shall review and approve tank and reaction vessel design. All tanks and reaction vessels will be closed or otherwise designed to avoid emissions of dusts or vapors to the atmosphere. Tanks and reaction vessels must be of sufficient thickness and corrosion resistance to prevent rupture;

(ii) Totally enclosed treatment facilities must be in good condition and of a design and construction to avoid rupture under maximum operating conditions and must be capable of being inspected periodically; and

(iii) Furnaces must be in good condition structurally, designed and operated to accept only special incinerator ash and capable of being inspected periodically. The department may review and approve furnace design.

(c) Meet the performance standards of WAC 173-306-440(2). The department shall specify the type and frequency of all sampling and monitoring necessary to assure compliance.

(d) Assure that treatment of special incinerator ash occurs under conditions spelled out in prototype, pilot plant or full scale operation. The design must be approved by the department and the department shall specify operating conditions.

(e) Control fugitive dust emissions in the handling of special incinerator ash by:

(i) Collecting and handling in enclosed buildings or the equivalent (e.g., covered conveyors and transfer points); and

(ii) Adding moisture, dust suppressants, or other methods as necessary.

(f) Comply with chapter 296-62 WAC, the general occupational health standards.

(g) Assure that treated special incinerator ash is disposed of according to this chapter or chapter 173-304 WAC, the minimum functional standards for solid waste, if the residues are designated as solid waste.

(h) Close the treatment facility according to the requirements of WAC 173-306-410.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-480, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-480, filed 4/30/90, effective 5/31/90.]

WAC 173-306-490 Ash utilization standards. (1) Applicability.

(a) These standards apply to persons who utilize special incinerator ash including:

(i) Generators of special incinerator ash;

(ii) Owners and operators of disposal facilities; and

(iii) Persons who neither generate nor dispose of special incinerator ash but are involved in the reuse or utilization of special incinerator ash.

(b) These standards do not apply to the following wastes and waste processes:

(i) Ferrous metal separation from ash;

(ii) Special incinerator ash that is reinjected into the incinerator or energy-recovery facility from which it was produced;

(iii) Reclamation of nonferrous metals.

(2) Standards.

(a) Accumulation before reuse or utilization.

(i) All ash for utilization must be stored in totally enclosed buildings.

(ii) Floor or surface drains serving storage areas may not be connected to uncontaminated storm water run-off drains. Contaminated water must be processed according to WAC 173-306-200 (3)(c)(ii).

(iii) All ash not utilized within one calendar year of generation is subject to:

(A) The management plan requirements of WAC 173-306-200 if a generator is accumulating the ash; or

(B) The permitting and facility standard requirements of WAC 173-306-300 and 173-306-400, if a disposal facility is accumulating the ash.

(b) Use constituting disposal. Use constituting disposal is applying ash to the land or placing ash on the land in a manner constituting disposal, or applying ash contained in a product to the land or placing ash products on the land in a manner constituting disposal. Placement on the land includes placement in water (such as in reef construction).

(i) Persons wishing to reuse or utilize ash in a manner constituting disposal shall apply for a permit under WAC 173-306-310.

(ii) Persons reusing or utilizing ash in a manner constituting disposal are subject to the following sections of the general facility standards:

(A) WAC 173-306-405(2);

(B) WAC 173-306-405 (3)(b);

(C) WAC 173-306-405 (5)(a), (b), (c), and (f); and

(D) WAC 173-306-405(7).

(iii) The department will base its decision on whether to issue a permit upon the following factors:

(A) The effectiveness of the utilized ash or ash product for the claimed use;

(B) The degree to which the utilized ash is like an analogous product;

(C) The extent to which the utilized ash or ash product minimizes loss or escapes to the environment;

(D) The extent to which the utilized ash or ash product impacts public health, the environment, and employee health given a reasonable worst case exposure, risk assessment analyses and compliance with the performance standards of WAC 173-306-440(2);

(E) The extent to which an end market for the utilized ash and ash product is guaranteed;

(F) The time period between generating the ash and utilization;

(G) The degree to which the end uses (and users) can be tracked and recorded; and

(H) Other factors as appropriate.

(iv) The department may require that applicants apply for a demonstration permit or class use permit under WAC 173-306-320, if available information exists to satisfy the informational requirements of (b)(ii) and (iii) of this subsection.

(c) Utilization as ingredients in industrial products, or as effective substitutes. The utilization of ash in industrial products or as effective substitutes for commercial products are activities that ordinarily are not considered to be waste management because they are like normal production processes and/or the products are used like commercial products. (E.g., ash as a substitute in cement construction blocks is an example.)

(i) The department may grant requests for classifying that type of reuse or utilization for solely commercial purposes, if:

(A) The applicant shows that the ash or ash products are recycled in a manner so that they closely resemble products or raw materials rather than waste; and

(B) The applicant addresses the factors of (b)(iii) of this subsection (except for (2)(b)(iii)(G)).

(ii) Public review of the decision to grant or deny such a request must be conducted according to WAC 173-306-900 (4), (5), and (6).

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-490, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-490, filed 4/30/90, effective 5/31/90.]

WAC 173-306-495 Other methods of ash disposal. (1) Applicability. This section applies to other methods of ash disposal not specifically identified elsewhere in this chapter, nor excluded from this chapter.

(2) Requirements. Owners and operators of other methods of ash disposal shall:

(a) Comply with the requirements in WAC 173-306-405;

(b) Obtain a permit under WAC 173-306-300 from the department, by submitting an application containing information required in WAC 173-306-330, and other information as may be required by the department including:

(i) Preliminary engineering reports and plans and specifications; and

(ii) A closure plan.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-495, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-495, filed 4/30/90, effective 5/31/90.]

WAC 173-306-500 Monitoring and sampling methods. (1) Applicability. These requirements apply to owners and operators of incinerators, energy recovery facilities, disposal facilities, and management facilities who are required to perform ash sampling, analyses and testing, groundwater and air quality monitoring under this chapter.

(2) Groundwater monitoring requirements.

(a) The groundwater monitoring system:

(i) Must consist of at least one background or up-gradient well and three down-gradient wells, installed at appropriate locations and depths to yield groundwater samples from the uppermost aquifer and all hydraulically connected aquifers below the active portion of the facility.

(ii) Must represent the quality of background water that has not been affected by leakage from the active area; and

(iii) Must represent the quality of groundwater passing the point of compliance. Additional wells may be required by the department in complicated hydrogeological settings or to define the extent of contamination detected.

(b) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must allow collection of representative groundwater samples. Wells must be constructed in such a manner as to prevent contamination of the samples, the sampled strata, other substrata aquifers and waterbearing strata. Construction must be accomplished in accordance with chapter 173-160 WAC, minimum standards for construction and maintenance of water wells.

(c) The groundwater monitoring program shall include, at a minimum, procedures and techniques for:

(i) Decontamination of drilling and sampling equipment;

(ii) Sample collection;

(iii) Sample preservation and shipment;

(iv) Analytical procedures and quality assurance;

(v) Chain of custody control; and

(vi) Procedures to ensure employee health and safety during well installation and monitoring.

(d) Sample constituents.

(i) Owners or operators of all facilities shall test for the following parameters:

(A) Temperature;

(B) Conductivity;

(C) pH;

(D) Chloride;

(E) Nitrate, nitrite, and ammonia as nitrogen;

(F) Sulfate;

(G) Dissolved iron, cadmium, lead, and mercury;

(H) Dissolved zinc and manganese;

(I) Chemical oxygen demand;

(J) Total organic carbon;

(K) Calcium and sodium; and

(L) Gamma radiation.

(ii) The department may specify additional or fewer constituents depending upon the leachate analyses, the composition of the ash, and other information.

(iii) To detect the parameters of (d)(i) of this subsection, EPA Publication Number SW-846, "Test methods for evaluating solid waste physical/chemical methods" must be used.

(e) The groundwater monitoring program must include a determination of the groundwater surface elevation each time groundwater is sampled.

(f) The owner or operator shall use a department-approved statistical procedure for determining whether a significant change over background has occurred.

(g) The owner or operator must determine groundwater quality at each monitoring well at the compliance point at least quarterly from start up through the post-closure care period. The owner or operator must express the groundwater quality at each monitoring well in a form necessary for the determination of statistically significant increases.

(h) The owner or operator must determine and report the groundwater flow rate and direction in the uppermost aquifer at least annually.

(i) If the owner or operator determines that there is a statistically significant increase for parameters or constituents at any monitoring well at the compliance point, the owner or operator must:

(i) Notify the department of this finding in writing within seven days of receipt of the sampling data. The notification must indicate which parameters or constituents have shown statistically significant increases;

(ii) Immediately resample the groundwater in all monitoring wells and determine the concentration of all constituents listed in the definition of contamination in WAC 173-306-100 including additional constituents identified in the permit and whether there is a statistically significant increase such that the groundwater performance standard has been exceeded. The department must be notified within fourteen days of receipt of the sampling data.

(j) The department may require modifications to the disposal facility, the plan of operation or the permit, including facility closure, if the performance standard of WAC 173-306-440 (2)(a) is exceeded and, in addition, may revoke any permit and require reapplication under WAC 173-306-310.

(3) Modifications. An owner or operator required to modify the facility or plan of operation under this section must first obtain approval from the department and must at a minimum:

(a) Implement modifications that reduce contamination and, if possible, prevent constituents from exceeding their respective concentration limits at the compliance point by removing the constituents, treating them in place or other remedial measures; and

(b) Begin modifications according to a written schedule after the groundwater performance standard is exceeded.

(4) Ash and soil sampling, and analysis.

(a) Ash residue samples taken for the purpose of determining their designation status as a special incinerator ash waste must be conducted according to guidance established by the department. Ash samples taken for the purpose of determining carbon residue and for determining dioxins and dibenzofuran content, if different from samples taken for designation status under chapter 173-303 WAC, must also be conducted according to guidance established by the department. Representative sampling methods and frequency as developed in guidelines by the department must be employed.

(b) Ash samples must be analyzed as follows:

(i) For designation purposes, as a special incinerator ash waste, the samples must be analyzed according to:

(A) "Chemical testing methods for complying with the state of Washington dangerous waste regulation," WDOE 83-13;

(B) "Biological testing methods," WDOE 80-12;

(C) "Test methods for evaluating solid waste, physical/chemical methods," SW 846.

(ii) For chlorinated-p-dioxins and dibenzofurans, 40 C.F.R. Part 261 Appendix X is adopted by reference.

(iii) For cadmium in soil, method 7130 or 7131 cited in "Test methods for evaluating solid waste, physical/chemical methods," SW 846.

(5) Ambient air quality sampling for lead. Ambient lead concentrations must be measured and reported according to 40 C.F.R. Part 50 Appendix G, which is adopted by reference, except that the sampling frequency will be determined by the department: Provided, That the department has not adopted "Compendium of methods for the determination of inorganic compounds in ambient air" (EPA/625/R-96/01a, July 1999).

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-500, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-500, filed 4/30/90, effective 5/31/90.]

WAC 173-306-900 Variances. (1) Any person applying for an ash disposal permit or who owns or operates an ash generation or disposal facility may apply to the department for a variance from any section of this chapter. The application must be accompanied by information such as the department may require.

(2) The applicant shall provide usual and reasonable public notification within the area that will be impacted, including publication in the area's major general circulation newspaper and mailing notices to surrounding property owners. Proof of compliance must be submitted with the variance application.

(3) The department shall give public notice of an application and allow a thirty-day public comment period. Notice must be mailed to persons who have written to the department asking to be notified of all variance requests and shall indicate that a public hearing may be requested.

(4) In considering a variance request, the department shall consider:

(a) The relative interests of the applicant, other property owners likely to be affected by the applicant's activity and the general public;

(b) If the ash handling practices or facility location protect public health, worker health, safety or the environment to a degree equal to or greater than the standard from which a variance is requested;

(c) Whether compliance with the rule from which the variance is sought would produce hardship without equal or greater benefits to the public;

(d) Whether compliance with the rule will require spreading of costs over a considerable time period; and

(e) Whether the timetable is for a period that is sufficient to comply with this chapter.

(5) The department shall approve or disapprove a variance request within ninety days of receipt unless the applicant and the department agree to a continuance.

(6) Any variance granted under this section may be renewed. Application for a variance renewal must be made at least sixty days before the expiration of the variance and must follow the application process of subsections (1) through (5) of this section.

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-900, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-900, filed 4/30/90, effective 5/31/90.]

WAC 173-306-9901 Maximum contaminant levels for groundwater. Maximum contaminant levels for groundwater are those specified in chapter 248-54 WAC, as the primary drinking water standards. Analytical methods for these contaminants may be found in the Code of Federal Regulations, 40 C.F.R. Part 141. (These contaminant levels are to be considered interim levels for the purpose of regulating disposal facilities and must be used until the department establishes groundwater quality standards for all types of activities impacting groundwater.)

[Statutory Authority: Chapter 70.138 RCW. 00-19-018 (Order 00-17), § 173-306-9901, filed 9/8/00, effective 10/9/00; 90-10-047, § 173-306-9901, filed 4/30/90, effective 5/31/90.]