

Rules and Regulations of the Department of Health

Large On-site Sewage System Regulations Chapter 246-272B WAC

Effective July 1, 2011
Formatting Revised July 2012

WAC

Washington Administrative Code



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Chapter 246-272B WAC

Large On-site Sewage System Regulations

PART 1: GENERAL PROVISIONS

WAC 246-272B-01000 Purpose and Objectives

- (1) The purpose of this chapter is to protect public health and the environment by establishing a comprehensive framework for statewide management of LOSS.
- (2) This chapter implements chapter 70.118B RCW, Large on-site sewage disposal systems, by establishing regulations for LOSS owners, operators, design engineers, and installers; and their duties in siting, designing, constructing, installing, permitting, operating, monitoring, maintaining, and repairing LOSS to achieve sustainable long-term sewage management.

WAC 246-272B-01100 Acronyms and Definitions

The following acronyms and definitions apply throughout this chapter unless the context clearly requires otherwise:

- (1) "**Additive**" means a commercial product added to an OSS intended to affect performance or aesthetics of an OSS.
- (2) "**ASTM**" means American Society for Testing and Materials.
- (3) "**Bank**" means any naturally occurring slope greater than one hundred percent (forty-five degrees) and extending vertically at least five feet from the toe of the slope to the top of the slope.
- (4) "**Bed**" means a drainfield component consisting of an excavation with a width greater than three feet and up to ten feet.
- (5) "**BOD**" means biochemical oxygen demand, typically expressed in mg/L.
- (6) "**Building sewer**" means that part of the horizontal piping of a drainage system extending from the building drain, which collects sewage from all the drainage pipes inside a building, to an OSS. It begins two feet outside the building wall and conveys sewage from the building drain to the remaining portions of the OSS.
- (7) "**CBOD**" means carbonaceous biochemical oxygen demand, typically expressed in mg/L.
- (8) "**Cesspool**" means a pit receiving untreated sewage and allowing the liquid to seep into the surrounding soil or rock.
- (9) "**Covenant**" means a recorded agreement stating certain activities or practices are required or prohibited.

- (10) "**Cover material**" means soil placed over a drainfield or dripfield composed predominantly of mineral material with no greater than ten percent organic content. Cover material may contain an organic surface layer for establishing a vegetative landscape to reduce soil erosion.
- (11) "**Cut**" means any artificially formed slope greater than one hundred percent (forty-five degrees) and extending vertically at least five feet from the toe of the slope to the top of the slope.
- (12) "**Department**" means the Washington State Department of Health.
- (13) "**Design engineer**" means a professional engineer who is licensed in Washington state under chapter 18.43 RCW and is experienced and qualified in the analysis and design of LOSS or sewage treatment system components. If the LOSS or any component of the LOSS is considered a "significant structure" as defined in chapter 18.43 RCW, the design engineer shall be licensed as a structural engineer unless an exception specified in RCW 18.43.040 applies.
- (14) "**Design flow**" means the maximum volume of sewage a residence, structure, or other facility is estimated to generate in a twenty-four-hour period. It incorporates both an operating capacity and a surge capacity for the LOSS during periodic heavy use events.
- (15) "**Development**" means a combination of residences, structures, and facilities, or similar activity, in or on subdivisions, sites, or areas, where residential strength sewage is produced.
- (16) "**Distribution technology**" means any arrangement of equipment or materials that distributes LOSS effluent within the drainfield.
- (17) "**Domestic sewage**" means urine, feces, and the water carrying human wastes, including kitchen, bath, and laundry wastes from residences, nonresidential buildings such as churches or schools, commercial establishments, or other buildings, excluding industrial wastewater and storm water.
- (18) "**Drain rock**" means clean washed gravel or crushed rock ranging in size from three-fourths inch to two and one-half inches, and containing no more than two percent by weight passing a US No. 8 sieve and no more than one percent by weight passing a US No. 200 sieve.
- (19) "**Drainfield**" means the treatment and soil dispersal component of a LOSS consisting of trenches or beds containing either a distribution pipe within a layer of drain rock covered with a geotextile or equivalent covering, or an approved gravelless distribution technology, designed and installed in original, undisturbed, unsaturated soil providing at least minimal vertical separation as established in this chapter, with pressure distribution of effluent.
- (20) "**Dripfield**" means a type of drainfield where effluent is applied directly into the soil through driplines.

- (21) "**Dripline**" means the distribution piping used with a subsurface drip system to discharge effluent into the soil. A dripline consists of small diameter, flexible polyethylene tubing with small in-line emitters.
- (22) "**Drywell**" means a subterranean pit, chamber, or structure used to collect storm water, effluent, or other liquid and disperse it into the soil.
- (23) "**Effective particle size**" means the size of sieve opening where ninety percent by weight of a sample of filter media is retained on the sieve and ten percent passes through the sieve.
- (24) "**Effluent**" means liquid discharged from a septic tank or other LOSS treatment component.
- (25) "**Emitter**" means an orifice that discharges effluent at a slow, controlled rate.
- (26) "**Expansion**" means a change to the LOSS or its influent that causes the LOSS to exceed its existing treatment or dispersal capacity, or a change that reduces the treatment or dispersal capacity of the existing LOSS.
- (27) "**Extremely gravelly**" means soil with sixty to ninety percent rock fragments by volume.
- (28) "**Failure**" means a condition of a LOSS or LOSS component that threatens the public health or environment by inadequately treating sewage or by creating a potential for direct or indirect contact between sewage and the public.
- (29) "**FC**" means fecal coliform bacteria, typically expressed in number of colonies/100 ml.
- (30) "**Fecal coliform**" means bacteria common to the digestive systems of warm blooded animals that are cultured in standards tests. Counts of these organisms are typically used to indicate potential contamination from sewage or to describe a level of needed disinfection, and are generally expressed as colonies per 100 ml.
- (31) "**gpd**" means gallons per day.
- (32) "**Gravelly**" means soils with fifteen to thirty-four percent rock fragments by volume.
- (33) "**Greywater**" means domestic type flows from bathtubs, showers, bathroom sinks, washing machines, dishwashers, and kitchen or utility sinks. Greywater does not include flow from a toilet or urinal.
- (34) "**Gross land area**" means the total land area of a proposed development that might include the centerline of adjoining road or street right of ways, if dedicated as part of the development, but does not include land area under surface water.
- (35) "**Groundwater**" means water in a saturated zone or stratum beneath the surface of land or below a surface water.
- (36) "**High quality effluent (HQE)**" means a treatment level higher than Treatment Level B as established in WAC 246-272B-06250.

- (37) "**Holding tank sewage system**" means a LOSS that incorporates a sewage tank without a discharge outlet, and requires the services of a sewage pumper, and off-site treatment and disposal for the generated sewage.
- (38) "**Hydraulic loading rate**" means the rate at which effluent is applied to a drainfield or other treatment component usually expressed as gpd/sf.
- (39) "**Hydrogeologist**" means a professional hydrogeologist who is licensed in Washington state under chapter 18.220 RCW.
- (40) "**HGR**" means hydrogeology report.
- (41) "**HQE**" means high quality effluent.
- (42) "**Industrial wastewater**" means the water or liquid carried waste from an industrial process. This waste may result from any process or activity of industry, manufacture, trade, or business; from the development of any natural resource; or from animal operations such as feedlots, poultry houses, or dairies. The term includes contaminated storm water and leachate from solid waste facilities.
- (43) "**Infiltrative surface**" means the horizontal surface area measured in square feet within a drainfield to which effluent is applied and through which effluent moves into original undisturbed soil or other porous treatment media.
- (44) "**Influent**" means the domestic sewage entering the LOSS.
- (45) "**Installer**" means a person who installs or repairs an OSS and who meets the requirements in WAC 246-272B-05000.
- (46) "**Large on-site sewage system (LOSS)**" means an OSS with design flows of three thousand five hundred gpd up to and including one hundred thousand gpd.
- (47) "**Local health officer**" means the legally qualified physician who has been appointed as the health officer for the county or district public health department as defined in RCW 70.05.010, or his or her authorized representative.
- (48) "**LOSS**" means large on-site sewage system.
- (49) "**Maintenance**" means the actions necessary to keep the OSS and its components functioning to protect public health and the environment.
- (50) "**Management entity**" means a publicly or privately owned entity acting as an agent of the owner responsible for the proper and safe long-term management of the LOSS.
- (51) "**Massive structure**" means soil that appears as a coherent or solid mass not separated into peds of any kind.
- (52) "**mg/L**" means milligrams per liter.
- (53) "**ml**" means milliliter.

- (54) "**mm**" means millimeter.
- (55) "**Moderate structure**" means well formed distinct peds evident in undisturbed soil. When disturbed, soil material parts into a mixture of whole peds, broken peds, and material that is not in peds.
- (56) "**Modification**" means a change to an existing LOSS that includes, but is not limited to, a repair, an expansion, a replacement, treatment or other process improvement, or a management or ownership change.
- (57) "**Monitoring**" means routine observation and measurement of LOSS performance to determine if it is functioning as intended and if maintenance is needed. Monitoring also includes maintaining accurate records documenting monitoring activities.
- (58) "**N₁₀**" means a treatment level based on total nitrogen of 10 mg/L-N.
- (59) "**N₂₀**" means a treatment level based on total nitrogen of 20 mg/L-N.
- (60) "**NEMA**" means National Electrical Manufacturer Association.
- (61) "**NRCS**" means Natural Resources Conservation Service.
- (62) "**O&G**" means oils and grease.
- (63) "**Oils and grease**" means a component of sewage typically originating from food stuffs or consisting of compounds of alcohol or glycerol with fatty acids, typically expressed in mg/L. Standard laboratory methods for determining O&G are USEPA Method 1664 or Standard Methods 5520.
- (64) "**O&M**" means operations and maintenance.
- (65) "**On-site sewage system (OSS)**" means an integrated system of components, located on or nearby the property it serves, that conveys, stores, treats, and provides subsurface soil treatment and disposal of domestic sewage. It consists of a collection system, a treatment component or treatment sequence, and a drainfield. It may or may not include a mechanical treatment system. An OSS also refers to a holding tank sewage system or other system that does not have a drainfield. A holding tank that discharges to a sewer is not included in the definition of OSS. A system into which storm water or industrial wastewater is discharged is not included in the definition of OSS.
- (66) "**Operator**" means a person who is responsible for operating the LOSS and ensuring that it consistently and reliably treats sewage according to the terms and conditions of the operating permit, and who meets the requirements in WAC 246-272B-07200.
- (67) "**Operating capacity**" means the average daily volume of sewage that a LOSS can treat and disperse on a sustained basis.

(68) "**Ordinary high-water mark**" means the mark on lakes, streams, springs, and tidal waters found by examining the beds and banks and ascertaining where the presence and action of water are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland with respect to vegetation, as that condition exists on the effective date of this chapter, or as it may naturally change thereafter. The following definitions apply where the ordinary high-water mark cannot be found:

(a) The ordinary high-water mark adjoining marine water is the elevation at mean higher high tide; and

(b) The ordinary high-water mark adjoining freshwater is the line of mean high water.

(69) "**OSS**" means on-site sewage system.

(70) "**Owner**" means a person responsible for the LOSS and for complying with this chapter.

(71) "**P**" means phosphorus, typically expressed in mg/L.

(72) "**Ped**" means a unit of soil structure such as a block, column, granule, plate, or prism formed by natural processes.

(73) "**Person**" means any individual, corporation, company, association, society, firm, partnership, joint stock company, or any governmental agency, or the authorized agents of these entities.

(74) "**Platy structure**" means soil that contains flat peds that lie horizontally and often overlap. This type of structure impedes the vertical movement of water.

(75) "**Pressure distribution**" means a system of small diameter pipes equally distributing pumped effluent throughout a drainfield.

(76) "**Private management entity**" means a person, for-profit organization, nonprofit organization, or the authorized agents of these entities responsible for the proper and safe long-term management of the LOSS. This definition does not include public entities or wastewater companies regulated by the Washington utilities and transportation commission.

(77) "**Proprietary product**" means sewage treatment or distribution technology, methods, and materials subject to a patent or trademark.

(78) "**psi**" means pounds per square inch.

(79) "**Public domain technology**" means sewage treatment or distribution technology, method, or material not subject to a patent or trademark.

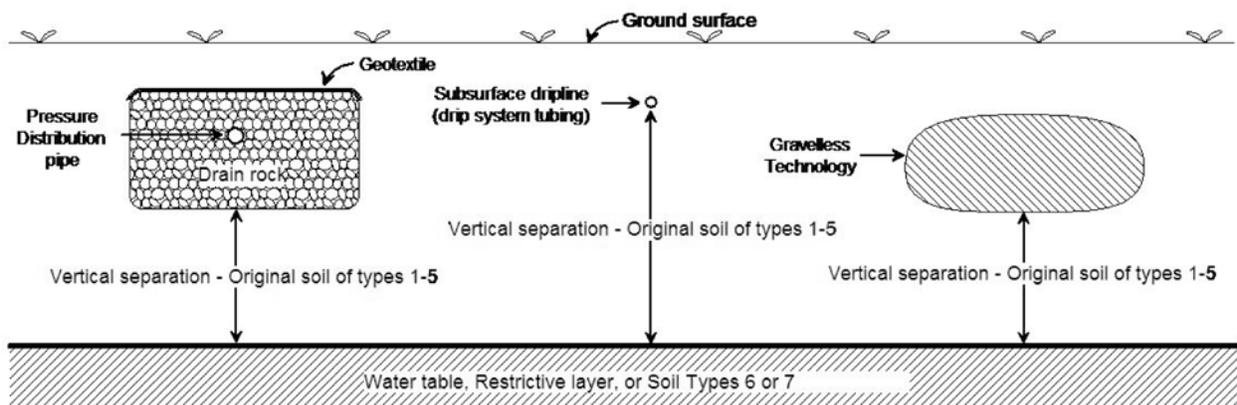
(80) "**Public entity**" means a municipal corporation such as a city; town; county; water, sewer, or water-sewer district; public utility district; port district; or federal, state, or local agency.

- (81) "**Pumper**" means a person approved by the local health officer to remove and transport sewage or septage from an OSS.
- (82) "**Reclaimed water**" means water derived in any part from wastewater with a domestic wastewater component that has been adequately and reliably treated, so that it can be used for beneficial purposes. Reclaimed water is not considered a wastewater.
- (83) "**Record drawing**" means an accurate graphic and written record of the location and features that are needed to properly monitor, operate, and maintain the LOSS that bears the stamp and signature of a design engineer.
- (84) "**Repair**" means reconstruction, relocation, or replacement of a LOSS or a LOSS component that has failed or is not functioning as designed.
- (85) "**Reserve area**" means an area of land approved for the installation of a LOSS and dedicated for replacement of the LOSS in the event of a failure.
- (86) "**Residential strength sewage**" means sewage with the constituency and strength of biochemical oxygen demand; carbonaceous biochemical oxygen demand; fats, oils, and grease; and suspended solids typical of domestic sewage.
- (87) "**Restrictive layer**" means a stratum impeding the vertical movement of water, air, and growth of plant roots. Some examples include: Hardpan, claypan, fragipan, caliche, some compacted soils, bedrock, or unstructured clay soils.
- (88) "**Rock fragment**" means pieces of rocks or minerals having a diameter greater than two millimeters, such as gravel, cobbles, stones, and boulders.
- (89) "**Sanitary sewer system**" means all facilities, including approved LOSS, used in the collection, transmission, storage, treatment, or discharge of any waterborne waste, whether domestic in origin or a combination of domestic, commercial, or industrial wastewater. LOSS are only considered sanitary sewer systems if they are designed to serve urban densities. Sanitary sewer system is also commonly known as public sewer system.
- (90) "**Seepage pit**" means an excavation where the sidewall or bottom is designed to dispose of effluent without the use of pipe or other approved method of distribution.
- (91) "**Septage**" means the mixture of solid wastes, scum, sludge, and liquids pumped from septic tanks, pump chambers, holding tanks, or other OSS components.
- (92) "**Septic tank**" means a water tight treatment receptacle receiving the discharge of sewage from a building sewer or sewers; designed and constructed to permit separation of settleable and floating solids from the liquid, and detention and anaerobic digestion of the organic matter, prior to discharge of the liquid.
- (93) "**Septic tank effluent (STE)**" means liquid waste with characteristics typical of effluent from a properly sized septic tank treating residential strength sewage.

- (94) "**Sewage tank**" means a water tight prefabricated or cast-in-place septic tank, pump tank, holding tank, grease interceptor tank, recirculating filter tank, tank used with a proprietary product, or any other tank used in an OSS. This term also includes tanks used in a septic tank effluent pump or vacuum collection or transmission system for an OSS.
- (95) "**Site risk survey (SRS)**" means a screening tool used to identify and evaluate potential impacts to public health and the environment from a LOSS.
- (96) "**Soil log**" means a detailed description of soil characteristics providing information on the soil's capacity to act as an acceptable treatment and dispersal medium for sewage.
- (97) "**Soil scientist**" means a person certified by the American Society of Agronomy or Soil Scientist Society of America as a Certified Professional Soil Scientist.
- (98) "**Soil texture**" means the USDA numerical classification of soil particles two millimeters or less in size and the description of the percent of sand, silt, and clay.
- (99) "**Soil type**" means one of seven numerical classifications based on USDA classifications of soil texture, structure and percent rock fragments as described in Table 1 in WAC 246-272B-03400.
- (100) "**sf**" means square feet.
- (101) "**SRS**" means site risk survey.
- (102) "**STE**" means septic tank effluent.
- (103) "**Strong structure**" means peds are distinct in undisturbed soil. They separate cleanly when soil is disturbed, and the soil material separates mainly into whole peds when removed.
- (104) "**Subsurface drip system**" means a pressurized wastewater distribution system that can deliver small, precise doses of effluent to soil surrounding the dripline.
- (105) "**Surface water**" means any body of water, whether fresh or marine, which either flows or is contained in natural or artificial unlined depressions or drainage course and contains water for forty-eight continuous hours during May through October. Such bodies include, but are not limited to, natural and artificial lakes, ponds, springs, rivers, streams, canals, ditches, swamps, marshes, tidal waters, and wetlands.
- (106) "**Test pit**" means an excavation used to observe the soil profile in its original condition for purpose of completing a soil log.
- (107) "**Timed dosing**" means delivery of discrete volumes of sewage at prescribed time intervals.
- (108) "**Treatment component**" means a technology or process that reduces targeted constituents in sewage in preparation for dispersal or disposal.

- (109) "**Trench**" means a drainfield component consisting of an excavation with a width of three feet or less.
- (110) "**TSS**" means total suspended solids, typically expressed in mg/L.
- (111) "**Uniformity coefficient**" means a numeric quantity calculated by dividing the size of the sieve opening which will pass sixty percent of a sample by the size of the opening which will pass ten percent of the sample on a weight basis. Symbolically this is depicted as $d_{60}/d_{10} = U_c$.
- (112) "**USDA**" means United States Department of Agriculture.
- (113) "**USEPA**" means United States Environmental Protection Agency.
- (114) "**Vertical separation**" means the depth of unsaturated, original, undisturbed soil between the infiltrative surface of a drainfield component and the highest seasonal water table, a restrictive layer, or soil types 6 or 7 as illustrated by the profile drawings of drainfields in Figure 1 below.

Figure 1: Profile Drawings of Drainfields Showing Examples of Vertical Separation



- (115) "**Very gravelly**" means soil with thirty-five to fifty-nine percent rock fragments by volume.
- (116) "**Water table**" means the upper surface of the groundwater, whether permanent or seasonal.
- (117) "**Well**" means water well, resource protection well, and dewatering well as defined in RCW 18.104.020.

WAC 246-272B-01200 Applicability and Relationship to Other Statutes and Regulations

- (1) This chapter applies to all LOSS constructed, operated, and maintained in the state of Washington, except for:
 - (a) Systems receiving industrial wastewater discharges;
 - (b) Systems receiving storm water discharges;
 - (c) Combined sanitary sewer and storm water systems;
 - (d) Evaporative lagoon systems with design flows above three thousand five hundred gallons per day;
 - (e) Systems with design flows above one hundred thousand gallons per day; and
 - (f) Systems that discharge to surface water or to land surface.
- (2) This chapter requires LOSS owners and those proposing to construct a LOSS to comply with applicable sections of chapter 90.48 RCW, Water pollution control, regarding control and prevention of pollution of waters of the state including, but not limited to:
 - (a) Surface and groundwater standards established under RCW 90.48.035; and
 - (b) Those provisions requiring all known, available, and reasonable methods of treatment.
- (3) This chapter is intended to be consistent with the reclaimed water requirements under chapter 90.46 RCW, Reclaimed water use.
- (4) This chapter is intended to be consistent with other statutes and rules that apply to professional engineers in chapter 18.43 RCW, Engineers and land surveyors, and Title 196 WAC, Licensing, department of (engineers and land surveyors, board of registration for professional).
- (5) This chapter is intended to be consistent with the requirements of any comprehensive plan or development regulation adopted under chapter 36.70A RCW, Growth management-- Planning by selected counties and cities, or any other applicable comprehensive plan, land use plan, or development regulation adopted by a city, town, or county.
- (6) In addition to the requirements of this chapter, it is the responsibility of a person designing, constructing, owning, or operating and maintaining a LOSS to also comply with chapter 27.53 RCW, Archaeological sites and resources.
- (7) In addition to the requirements of this chapter, it is the responsibility of a person designing, constructing, owning, or operating and maintaining a LOSS to also comply with applicable local requirements including, but not limited to, land use and development regulations, comprehensive plans, designated sensitive and critical areas regulations, and building permit and inspection requirements.

WAC 246-272B-01300 General Requirements

- (1) Persons may not install or operate a LOSS without an operating permit as provided in this chapter.
- (2) Owners shall obtain an operating permit from the department and shall renew it annually.
- (3) LOSS permitted prior to the effective date of this chapter, that do not fully comply with the design, construction, and operating requirements in this chapter may continue in service without upgrade until modified, expanded, or repaired. The department shall require upgrades if it determines there is a threat to public health or the environment.
- (4) The LOSS owner shall operate and maintain the LOSS to consistently and reliably treat sewage.
- (5) The department may impose more stringent requirements than those described in this chapter when necessary to protect public health or the environment.

PART 2: APPROVAL AND PERMITTING PROCESS

Subpart A - New Construction

WAC 246-272B-02000 Site Review - Pre-design Report, Soil Characterization, and Site Inspection

- (1) The owner proposing a new LOSS shall submit to the department:
 - (a) Two hard copies and one copy in electronic format acceptable to the department of the predesign report that meets the requirements of WAC 246-272B-03000 and is prepared, stamped, signed, and dated by a design engineer; and
 - (b) The base fee as established in chapter 246-272 WAC, Wastewater and reclaimed water use fees.
- (2) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the conceptual treatment design appears to be viable, the notice of determination must include an invoice for the inspection fee as established in chapter 246-272 WAC, Wastewater and reclaimed water use fees, and instructions to proceed to the site inspection.
 - (b) If the conceptual treatment design is not viable, the notice of determination must include an invoice for all unpaid fees, the reasons for the determination, and a statement that the department is discontinuing review of the project.

- (3) Upon receiving the notice to proceed, the owner may proceed with the site inspection. To proceed, the owner shall:
 - (a) Schedule the site inspection with the department, design engineer and the person who prepared the soil logs if different than the design engineer; and
 - (b) Pay the inspection fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees.
- (4) After receiving the fee, the department shall inspect the proposed LOSS site with the design engineer and the person who prepared the soil logs, if different than the design engineer, to:
 - (a) View test pits;
 - (b) Verify soil type and other predesign report information; and
 - (c) Determine if more information or changes are needed, including laboratory analysis of soil consistent with WAC 246-272B-03400.
- (5) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department determines that the soil and site information is consistent with the conceptual treatment design, the notice of determination must include the maximum loading rate and instructions to proceed to the environmental review.
 - (b) If the department determines that the soil and site information is not consistent with the conceptual treatment design, the notice of determination must include an invoice for all unpaid fees, the reasons for the decision, and a statement that the department is discontinuing review of the project. Once the department discontinues review, the LOSS project ends. The department shall treat any future LOSS project submittals involving the same location as a new LOSS project subject to the requirements of subsection (1) of this section.

WAC 246-272B-02050 Environmental Review - Site Risk Survey and Hydrogeology Report

- (1) Upon receiving the notice to proceed, the owner may proceed with the environmental review. To proceed, the owner shall submit an SRS that meets the requirements of WAC 246-272B-03200.
- (2) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department determines that the SRS contains sufficient information to determine the public health and environmental impacts of the LOSS and the LOSS is feasible, the notice of determination must include instructions to proceed to engineering.

- (b) If the department determines that site conditions identified in the SRS require further evaluation to determine the public health and environmental impacts of the LOSS, the notice of determination must include instructions for the owner to submit an HGR.
- (3) Upon receiving the notice requiring an HGR, the owner may complete an HGR. To proceed, the owner shall submit an HGR that meets the requirements of WAC 246-272B-03300 and is prepared, signed, and dated by a licensed hydrogeologist.
- (4) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department determines that the HGR contains sufficient information and the LOSS is feasible, the notice of determination must include instructions to proceed to engineering.
 - (b) If the department determines that the HGR indicates the LOSS is not feasible due to unacceptable environmental or public health impacts, the notice of determination must include an invoice for all unpaid fees and the reasons for the decision, and the department shall discontinue review of the project.
- (5) An owner may satisfy the requirements of an SRS by submitting an HGR that meets the requirements of WAC 246-272B-03300.

WAC 246-272B-02100 Engineering

- (1) Upon receiving the department determination that the HGR contains sufficient information to determine the public health and environmental impacts of the LOSS and the LOSS is feasible, the owner may proceed with engineering. To proceed, the owner shall submit two hard copies and one copy in an electronic format acceptable to the department of an engineering report that meets the requirements of WAC 246-272B-04000, and a draft O&M manual that meets the requirements of WAC 246-272B-04200 that are prepared, stamped, signed, and dated by a design engineer.
- (2) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department approves the engineering report and draft O&M manual, the notice of determination must include instructions to proceed to plans and specifications.
 - (b) If the department does not approve the engineering report and draft O&M manual, the notice of determination must include an invoice for all unpaid fees, the reasons for the decision, and a statement that the department is discontinuing review of the project.
- (3) Upon receiving the notice to proceed, the owner may proceed with plans and specifications. To proceed, the owner shall submit to the department three hard copies and one copy, in an electronic format acceptable to the department, of plans and specifications that meet the requirements of WAC 246-272B-04400 that are prepared, stamped, signed, and dated by a design engineer.

- (4) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department approves the plans and specifications, the notice of determination must include an invoice for unpaid fees, a copy of the department-approved plans and specifications, and instructions to submit a completed operating permit application.
 - (b) If the department does not approve the plans and specifications, the notice of determination must include an invoice for all unpaid fees and the reasons for the decision, and the department shall discontinue review of the project.
- (5) If the department approves the plans and specifications, the department shall send a copy of the department-approved plans and specifications to the design engineer.
- (6) The owner shall use department-approved plans and specifications for bidding and construction purposes.

WAC 246-272B-02150 LOSS 14,500 gpd and Below - Operating Permit Application and Approval To Construct

- (1) To apply for an operating permit, the owner of a LOSS with design flow of 14,500 gpd and below shall submit a completed operating permit application on a form provided by the department; the operating permit fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees; and all other unpaid fees.
- (2) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department determines that the application meets the requirements of this chapter, the notice of determination must include the draft operating permit, and an invoice for the inspection fee and any additional review fees established in chapter 246-272 WAC, Wastewater and reclaimed water use fees.
 - (b) If the department determines that the application does not meet the requirements of this chapter, the notice of determination must include an invoice for all unpaid fees, the reasons for the decision, and a statement that the department is discontinuing review of the project.
- (3) If the owner disagrees with the department draft operating permit, the owner may submit comments to the department within thirty days of receipt.
- (4) The department shall consider comments submitted by the owner, and issue approval to construct and the operating permit after all fees are paid.

WAC 246-272B-02200 LOSS greater than 14,500 gpd - Operating Permit Application

- (1) To apply for an operating permit, the owner of a LOSS with a design flow greater than 14,500 gpd shall complete and submit an operating permit application on a form provided by the department; the operating permit fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees; and all other unpaid fees.
- (2) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department determines that the application meets the requirements of this chapter, the notice of determination must include the draft operating permit and instructions to provide public notice that meets the requirements of WAC 246-272B-02250.
 - (b) If the department determines that the application does not meet the requirements of this chapter, the notice of determination must include an invoice for all unpaid fees and the reasons for the decision, and the department shall discontinue review of the project.
- (3) If the owner disagrees with the department draft operating permit, the owner may submit comments to the department, within thirty days of receipt.
- (4) The department shall consider comments submitted by the owner and may modify the draft operating permit before the owner provides public notice.

WAC 246-272B-02250 LOSS greater than 14,500 gpd - Public Notice

- (1) Within one year of receiving the notice of determination under WAC 246-272B-02200 (2)(a), the owner may proceed with public notice. To proceed, the owner shall provide public notice that meets the requirements of this section prior to receiving department approval to construct the LOSS.
- (2) The owner shall provide the draft public notice to the department for review and approval. The public notice must include the following information:
 - (a) Date of notice;
 - (b) Name, mailing and e-mail addresses of the owner;
 - (c) Brief description of development to be served by the proposal, including property location and local zoning of the development and drainfield site;
 - (d) Proposed LOSS design flow;
 - (e) Proposed LOSS waste strength;
 - (f) Proposed location of treatment and drainfield site, giving street address and parcel number;

- (g) How to obtain a copy of the operating permit application, draft operating permit, LOSS project information, or additional information from the owner; and
 - (h) How to comment to the department and the date comments are due. Comments are due thirty days from the first date of publication.
- (3) The department shall review and provide a written response to the owner within fourteen days of receipt of the draft public notice. The department may approve the notice as submitted or require changes to the notice including, but not limited to, corrections, or additional distribution or posting of the public notice to interested parties, local governments, or state agencies.
- (4) The owner shall, at the owner's expense:
- (a) Make changes to the public notice as directed by the department prior to publication and distribution;
 - (b) Publish the public notice once a week for two consecutive weeks in a local paper of general circulation in the county where the project is proposed;
 - (c) Provide additional distribution or posting of the public notice if directed by the department; and
 - (d) Submit an affidavit of publication to the department within fourteen days of the second publication.
- (5) If the department determines that the public notice does not meet the requirements of this section, the department shall notify the owner in writing and include an invoice for all unpaid fees and the reasons for the decision, and the department may:
- (a) Allow the owner an opportunity to correct public notice deficiencies in order to meet the requirements of this section; or
 - (b) Discontinue review of the project.

WAC 246-272B-02300 LOSS greater than 14,500 gpd - Operating Permit and Approval to Construct

- (1) The department shall consider comments received within thirty days of the first published public notice required by WAC 246-272B-02250, and may:
- (a) Require additional information from the owner;
 - (b) Require changes to the LOSS design, O&M manual, or management plan; or
 - (c) Modify the draft operating permit.
- (2) The department shall notify the owner in writing of additional submittals required by subsection (1) of this section.

- (3) The owner shall submit required information and changes to the LOSS design, O&M manual, or management plan to the department.
- (4) After reviewing all submitted information, the department shall provide a written notice of determination to the owner.
 - (a) If the department determines that the proposed LOSS meets the requirements of this chapter, the notice of determination must include an invoice for the final inspection fee, the annual operating permit fee, all other unpaid fees, and the operating permit.
 - (b) If the department determines that the LOSS does not meet the requirements of this chapter, the notice of determination must include an invoice for all unpaid fees and the reasons for the decision, and the department shall discontinue review of the project.
- (5) The department shall provide on the department's web site at doh.wa.gov the notice of final decision that identifies whether the LOSS operating permit has been approved and issued, or has been denied. The department may also use any of the following methods to provide the notice of final decision:
 - (a) Publication in a local newspaper of general circulation in the county of the proposal;
 - (b) Electronic mail;
 - (c) Press release; or
 - (d) Other means of notification the department deems appropriate.
- (6) An owner may appeal the department's decision on the operating permit by requesting an adjudicative proceeding consistent with WAC 246-272B-08200.
- (7) An aggrieved person may appeal the department's issuance of an initial operating permit according to WAC 246-272B-08300.
- (8) The department shall notify the owner in writing of approval to construct when all fees are paid and all appeals, if any, are resolved.

WAC 246-272B-02350 Construction

- (1) The owner may not begin construction until receiving the department's written approval to construct.
- (2) After receiving approval to construct, the owner shall annually apply to renew the operating permit.
- (3) If construction does not begin within two years following the date of the department's approval of the plans and specifications:

- (a) The approval for plans and specifications, any approval given to documents following public notice, and notice to construct expire and become null and void. If these approvals expire, the operating permit becomes null and void.
- (b) The owner may request a single extension of up to two years of the plans and specifications approval and all subsequent approvals prior to the two year expiration date by submitting a written request including a status report and construction schedule with the anticipated completion date.
- (c) The department may impose additional terms and conditions if it grants an extension.
- (4) The owner shall use an installer that meets the requirements of WAC 246-272B-05000 to construct the LOSS.
- (5) If during construction, the owner determines a substantial change to the approved plans and specifications is necessary, the owner shall submit revised plans and specifications that are prepared, stamped, signed, and dated by a design engineer to the department for review and approval.
- (6) The department shall review the revised plans and specifications, approve or deny the changes, and notify the owner of the decision in writing and include an invoice for review fees.
- (7) The owner shall construct the LOSS consistent with the approved plans and specifications, and Part 5 of this chapter.
- (8) After the design engineer has verified the LOSS has been pretested and functions consistently with the approved engineering documents and plans and specifications, the owner shall schedule the final inspection with the department and design engineer.
- (9) The department shall conduct the final inspection in accordance with WAC 246-272B-05300 and notify the owner in writing of the inspection results.
- (10) If the LOSS fails the final inspection, the department may:
 - (a) Allow the owner the opportunity to correct deficiencies and schedule another final inspection with the department and design engineer; or
 - (b) Determine the LOSS is unable to pass final inspection.
- (11) If the department determines the LOSS is unable to pass final inspection, the department shall notify the owner in writing. The notice must include an invoice for all unpaid fees, the reasons for the decision, and a statement that the department is discontinuing review of the project and the LOSS may not be put into service.
- (12) If the LOSS passes the final inspection, the owner shall submit to the department the construction completion report, final O&M manual, record drawings, and final management plan, all of which must be prepared, stamped, signed, and dated by a design engineer; and all unpaid fees within sixty days of receiving the final inspection results.

- (13) After receiving final documents and all unpaid fees, the department may approve the construction completion report, final O&M manual, record drawings, and final management plan as submitted or require changes. If the final documents are approved, the department shall notify the owner in writing that the LOSS may be put into service. The LOSS may not be put into service until the owner receives department notification.
- (14) The owner shall provide copies of the final department-approved O&M manual to the operator and management entity.

Subpart B - First Department Operating Permit for Existing LOSS

WAC 246-272B-02400 LOSS Constructed on or Before July 1, 1984

- (1) The owner of a LOSS constructed on or before July 1, 1984, who does not have an operating permit issued by the department shall submit:
 - (a) A completed application on a form provided by the department;
 - (b) Copies of all available design and construction documentation, including previous design and construction reviews of the LOSS by the department of ecology or local health jurisdiction;
 - (c) A copy of any permit previously issued by the department of ecology or a local health jurisdiction; and
 - (d) The annual operating permit fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees.
- (2) The department shall review the application and all other documents submitted and may issue an operating permit unless there is a current known failure. The operating permit may have conditions including, but not limited to, the following owner requirements:
 - (a) Submit inspection results prepared, stamped, signed, and dated by a design engineer that identify and map the basic treatment elements of the LOSS;
 - (b) Submit an SRS;
 - (c) Submit an engineering evaluation prepared, stamped, signed, and dated by a design engineer to verify that the LOSS is operating properly to treat sewage, and protect public health and the environment;
 - (d) Submit an O&M manual; or
 - (e) Prohibit additional connections to the LOSS until the owner demonstrates that the LOSS treatment process, drainfield, and reserve area meet requirements specified in WAC 246-272B-06050, 246-272B-06100, and 246-272B-06250 through 246-272B-06500.

- (3) If the LOSS is failing, the owner shall comply with the requirements in WAC 246-272B-07450.

WAC 246-272B-02450 LOSS with Current Permit from Department of Ecology or Local Health Jurisdiction

- (1) The owner of a LOSS permitted by the department of ecology or local health jurisdiction shall continue to maintain a current permit and meet its terms and conditions until the department issues a LOSS operating permit.
- (2) The department shall notify the owner when to submit an operating permit application to the department.
- (3) The owner shall submit a complete operating permit application on a form provided by the department and annual operating permit fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees, within thirty days of receiving notification from the department.
- (4) The department shall review the operating permit application and other information obtained from the department of ecology or local health jurisdiction and may issue an operating permit. The operating permit may have conditions including, but not limited to, the following:
- (a) Continue existing permit conditions;
 - (b) Submit inspection results prepared, stamped, signed, and dated by a design engineer that identify and map the basic treatment elements of the LOSS;
 - (c) Submit an SRS;
 - (d) Submit an engineering evaluation prepared, stamped, signed, and dated by a design engineer to verify that the LOSS is operating properly to treat sewage, and protect public health and the environment;
 - (e) Submit an O&M manual; or
 - (f) Prohibit additional connections to the LOSS until the owner demonstrates that the LOSS treatment process, drainfield, and reserve area meet requirements specified in WAC 246-272B-06050, 246-272B-06100, and 246-272B-06250 through 246-272B-06500.
- (5) If the LOSS is failing, the owner shall comply with the requirements in WAC 246-272B-07450.

WAC 246-272B-02500 LOSS Constructed After July 1, 1984, Without Current Operating or Discharge Permit

- (1) The owner of a LOSS constructed after July 1, 1984, that does not have an operating or discharge permit from the department, department of ecology, or local health jurisdiction shall submit:
 - (a) An operating permit application on a form provided by the department;
 - (b) Copies of all design and construction documents, including any previous design and construction review of the LOSS by the department of ecology or local health jurisdiction;
 - (c) Inspection results prepared, stamped, signed, and dated by a design engineer that identify and map the basic treatment elements of the LOSS;
 - (d) An SRS;
 - (e) An engineering evaluation prepared, stamped, signed, and dated by a design engineer to verify that the LOSS is operating properly to treat sewage, and protect public health and the environment; and
 - (f) The annual operating permit fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees.
- (2) The department may also require the owner to submit a predesign report, engineering report, plans and specification, O&M manual, or management plan.
- (3) The department shall review the operating permit application and other information provided by the owner or obtained from the department of ecology or local health jurisdiction and may issue an operating permit.
- (4) The department shall not approve any additional connections to the LOSS until the owner demonstrates that the LOSS treatment process, drainfield, and reserve area meet requirements specified in WAC 246-272B-06050, 246-272B-06100, and 246-272B-06250 through 246-272B-06500.
- (5) If the LOSS is failing, the owner shall comply with the requirements of WAC 246-272B-07450.

Subpart C - Permitted LOSS

WAC 246-272B-02550 LOSS Modifications

- (1) When a LOSS owner proposes a modification to the design, operation, or physical facilities, or when the department requires the owner to make such a modification, the owner shall consult with the department to determine the appropriate site review, environmental review, or engineering documents to prepare and submit.

- (2) Based on consultation with the department, the owner proposing a LOSS modification shall submit to the department:
 - (a) Two hard copies and one copy in electronic format acceptable to the department, that meets the requirements of this chapter of one or more of the following documents: Predesign report, SRS, HGR, engineering report, management plan, O&M manual; or
 - (b) Three hard copies and one copy in electronic format acceptable to the department of plans and specifications that meet the requirements of WAC 246-272B-04400; or
 - (c) Documents identified in subsection (2)(a) and (b) of this section; and
 - (d) The base fee as established in chapter 246-272 WAC, Wastewater and reclaimed water use fees.
- (3) The owner and department shall follow the process for preparing, submitting, reviewing, and approving site review, environmental review, and engineering submittals consistent with WAC 246-272B-02000, 246-272B-02050, and 246-272B-02100.
- (4) The department shall notify the owner in writing of its decision to approve or deny the proposal to repair, expand, or otherwise modify a LOSS.
- (5) If the department approves the proposal to repair, expand, or otherwise modify a LOSS where the existing and proposed design flow is 14,500 gpd or less, the department shall issue a notice to construct after receiving all unpaid fees, and the owner shall comply with the requirements of Part 5 of this chapter.
- (6) If the department approves the proposal to repair or otherwise modify a LOSS where the existing design flow is more than 14,500 gpd, the flow will not increase, and waste strength will not change, the department shall issue a notice to construct after receiving all unpaid fees, and the owner shall comply with the requirements of Part 5 of this chapter.
- (7) If the department approves the proposal to repair, expand, or otherwise modify a LOSS, the owner shall submit an operating permit application consistent with WAC 246-272B-02200, and provide public notice consistent with WAC 246-272B-02250 when:
 - (a) The proposed modification expands the design flow from 14,500 gpd or less to greater than 14,500 gpd; or
 - (b) The existing design flow is greater than 14,500 gpd and:
 - (i) The design flow increases; or
 - (ii) The waste strength characteristics change.
- (8) If the proposal is denied, the notification must include the reasons for the denial.

- (9) LOSS owners proposing modifications to the design, operation, or physical facilities identified in subsection (7) of this section shall follow applicable requirements of WAC 246-272B-02300 and 246-272B-02350.
- (10) LOSS owners shall report any change in ownership or management entity to the department a minimum of thirty days prior to the change taking effect.
- (11) Any new owner shall submit an application for a new operating permit, the permit fee, and a new management plan that meets the requirements of WAC 246-272B-04100 thirty days prior to assuming ownership.
- (12) The department may approve or deny the change in ownership, notifying the owner of the decision in writing.
 - (a) If the department approves the change in ownership, it shall issue the new owner an operating permit within thirty days of receiving the new application and management plan.
 - (b) If the department denies the change in ownership, the notice of the decision must include the reasons for the decision.
- (13) If the change in ownership is denied:
 - (a) The owner to whom the operating permit is issued may continue to operate the LOSS;
 - (b) The department may allow another person to operate the LOSS under a compliance agreement or order; or
 - (c) The department may direct the person operating the LOSS without a valid operating permit to discontinue operating the LOSS.

WAC 246-272B-02650 Operating Permit Renewals

- (1) The owner shall submit a completed operating permit renewal application, annual report, all other information required by the department, and the annual permit fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees, to the department at least thirty days prior to the expiration date of the current operating permit.
- (2) The department shall review the completed renewal application, submitted information, the existing permit, and other relevant information to determine compliance with this chapter and existing operating permit conditions and requirements.
- (3) The department shall issue, deny, or modify a renewal operating permit within thirty days of receiving the complete renewal form and other required items, or notify the owner of any delay within thirty days.
- (4) During the department's review of the completed renewal application and other materials, the current LOSS operating permit shall remain in full force and effect until the owner is notified of the department's decision.

- (5) In the renewal operating permit, the department shall impose conditions or requirements it determines are necessary to demonstrate the LOSS is properly operated and maintained to protect public health and the environment.

WAC 246-272B-02700 Operating Permit Requirements and Conditions

- (1) The department shall issue a LOSS operating permit for the LOSS and owner named in the application.
- (2) The department may issue a new operating permit when there is a change in LOSS ownership or management, according to WAC 246-272B-02550.
- (3) LOSS owners shall employ one or more operators meeting the requirements of WAC 246-272B-07200 at all times and shall notify the department of any change in the operator, including when there is no operator, within thirty days.
- (4) LOSS owners shall employ an approved management entity at all times that meets the requirements of WAC 246-272B-04100.
- (5) Operating permit conditions may include, but are not limited to, requiring:
 - (a) Monitoring information;
 - (b) Reports;
 - (c) New or modified documents such as SRS, HGR, O&M manual, engineering report, engineering inspection and evaluation of the LOSS, plans and specifications, record drawings, or other information to the department; and
 - (d) LOSS component repairs or replacement.
- (6) The owner shall notify the department within five calendar days when the LOSS is not in compliance with any operating permit monitoring limit or condition.
- (7) The owner shall submit an annual operating report that:
 - (a) Summarizes results and actions taken over the prior year related to the LOSS, including treatment upsets and monitoring violations, if any;
 - (b) Discusses any proposed modifications to the monitoring and reporting plan for the next year;
 - (c) Lists recorded influent sewage volume, measured in gpd; and
 - (d) Compares actual peak and average daily flows to the LOSS design flow.
- (8) Reports required in the operating permit have the following due dates:
 - (a) Monthly reports are due on the 10th of each month for the prior month.

- (b) Quarterly reports are due on the 10th of April, July, October, and January for the prior calendar quarter.
- (c) Annual reports are due with the application for permit renewal.

PART 3: SITE AND ENVIRONMENTAL REVIEW REQUIREMENTS

Subpart A - Site Review

WAC 246-272B-03000 Site Review - Predesign Report

At a minimum, the predesign report must include the following information:

- (1) Contact information for the owner and design engineer;
- (2) Site address, legal description, and name of the county where the project is located;
- (3) Vicinity map showing:
 - (a) The project site;
 - (b) Project property boundaries;
 - (c) Parcels surrounding and adjoining the project property boundaries; and
 - (d) Zoning and current land use of all identified properties and parcels.
- (4) Site map scaled to clearly show:
 - (a) Project boundaries;
 - (b) Topographic contours with maximum intervals of five feet, including the data source for the map;
 - (c) Cuts, banks, fill;
 - (d) Slopes greater than thirty percent;
 - (e) Areas of soil or slope instability;
 - (f) Bedrock outcrops;
 - (g) All items identified in WAC 246-272B-06050, Table 3 that are within the minimum horizontal setback distance noted in the table;
 - (h) All wells within one thousand feet of the project property boundaries;
 - (i) Location of one hundred-year flood boundaries, if any, within the mapped area;

- (j) Proposed primary and reserve drainfield boundaries; and
 - (k) Test pits.
- (5) Identification of tribal lands and archaeological resources within one thousand feet of the primary or reserve drainfield perimeter.
 - (6) A description of underground utilities at the site;
 - (7) USDA NRCS soil map and mapping unit description;
 - (8) A narrative discussion of the LOSS project describing at a minimum:
 - (a) The development with specific residential and nonresidential facilities identified;
 - (b) The drinking water source serving the development;
 - (c) The total land area available, in acres, for the development and all LOSS components;
 - (d) Applicable parts of the city, town, or county comprehensive plan or development regulations for all property the LOSS will be sited on and the development it serves, including the primary and reserve drainfield areas;
 - (e) How the LOSS project complies and is consistent with local comprehensive plans and land use and development regulations, including standards developed for any sensitive or critical areas designated by a city, town, county, or local health jurisdiction within one thousand feet of the drainfield perimeter;
 - (f) Any city, town, county, or local health jurisdiction requirement for the property to connect to public sewer;
 - (g) Expected project design flow and waste strength;
 - (h) Proposed treatment and dispersal method; and
 - (i) A description of how the owner proposes to meet the ownership and management requirements in WAC 246-272B-04100(2).
 - (9) Soil logs meeting the requirements in WAC 246-272B-03400 from the primary and reserve drainfield areas;
 - (10) Soil type and hydraulic loading rate using Table 1 in WAC 246-272B-03400;
 - (11) Narrative describing the physical characteristics of the primary and reserve drainfield site including:
 - (a) Topography and slope;
 - (b) Vegetation;
 - (c) Predominant soil type;

- (d) Vertical separation;
 - (e) Site drainage patterns; and
 - (f) Water table and any restrictive layers.
- (12) Calculations and a discussion showing that the proposed site meets the minimum land area requirements of WAC 246-272B-03500 using the values in Table 2 in that section for the identified soil types; and
- (13) If available, a copy of the SEPA checklist and determination or other environmental review and local planning determination for the development.

WAC 246-272B-03100 Site Review – Inspection

- (1) The owner shall prepare test pits that are open and available for inspection, and meet the requirements of WAC 246-272B-03400.
- (2) The owner shall provide a means for safe ingress and egress and is responsible for constructing, maintaining, and closing test pits in a safe manner as required by chapter 296-155 WAC, Safety standards for construction work.
- (3) The owner shall provide the department representative at the time of inspection a topographic site map scaled to clearly show:
 - (a) Numbered test pit locations within the proposed primary and reserve drainfield areas;
 - (b) Accurate geographic location of test pits; and
 - (c) A reference point that is marked on the site that can be used for horizontal measurement.
- (4) The owner, design engineer, or soil scientist shall be prepared to mark the boundaries of the proposed drainfield areas if requested by the department.
- (5) The owner shall make equipment and an operator available to dig additional test pits if required by the department or if the proposed drainfield is relocated. If not, and an additional site inspection is necessary, the owner shall pay an additional site inspection fee established in chapter 246-272 WAC, Wastewater and reclaimed water use fees.

Subpart B - Environmental Review

WAC 246-272B-03200 Environmental Review - Site Risk Survey

At a minimum, the SRS must include the following information:

- (1) Design flow and waste strength.
- (2) A description of the physical characteristics of the primary and reserve drainfield site including:

- (a) Predominant soil type;
 - (b) Vertical separation; and
 - (c) Water table.
- (3) Identification of sensitive or critical areas designated by a local, state, or federal agency if the primary or reserve drainfield is located within the boundaries of the area including, but not limited to:
- (a) Critical aquifer recharge area;
 - (b) Sole source aquifer;
 - (c) Designated wellhead protection area;
 - (d) Marine recovery area; and
 - (e) One hundred-year flood plain.
- (4) Identification of sensitive lands or resources within one-half mile of the primary or reserve drainfield perimeter including, but not limited to:
- (a) Fish hatcheries;
 - (b) Shellfish growing areas; and
 - (c) Water recreation areas.
- (5) Basic hydrogeology information for the primary and reserve drainfield including, but not limited to:
- (a) Well logs for all wells within one thousand feet;
 - (b) Depth to groundwater including perched groundwater and deeper aquifers;
 - (c) Vadose zone characteristics, including the presence of impermeable layers or aquitards;
 - (d) Direction of groundwater flow;
 - (e) Groundwater quality information, including nitrate and fecal coliform;
 - (f) Nitrate screening balance; and
 - (g) Potential hydraulic continuity to surface water.
- (6) Topographic map that clearly shows site features including:
- (a) Map scale and north arrow;
 - (b) Section, township, and range where project is located;

- (c) Project or property boundaries;
 - (d) Location of proposed primary and reserve drainfields;
 - (e) Location of areas prone to flooding including any designated one hundred-year flood plain boundaries;
 - (f) Unstable areas prone to significant surface or mass erosion;
 - (g) Direction of groundwater flow;
 - (h) Other contaminant sources including other OSS;
 - (i) Critical area boundaries or other sensitive areas listed in subsections (3) and (4) of this section;
 - (j) Surface water and wetlands within one thousand feet of the proposed drainfield perimeter; and
 - (k) Active and abandoned wells within one thousand feet of the proposed drainfield perimeter.
- (7) Other information the department may request to determine public health and environmental impacts from the LOSS.

WAC 246-272B-03300 Environmental Review - Hydrogeology Report

- (1) The department will determine the scope of the HGR based on the site conditions identified in the SRS, if one has been completed.
- (2) If an SRS has not been completed, the owner shall include the information listed in WAC 246-272B-03200 in the HGR.
- (3) The HGR must include sufficient site specific information and analysis for the department to determine the public health and environmental impacts of the LOSS, including:
 - (a) Further analysis of the site conditions identified in the SRS; and
 - (b) Mitigation to reduce or eliminate potential impacts.
- (4) The HGR must also include a ground and surface water monitoring plan as appropriate.

Subpart C - Site Standards

WAC 246-272B-03400 Soil Characterization

- (1) The owner shall install enough test pits to characterize soil type and conditions across both the primary and reserve drainfield areas.
- (2) Each test pit must be:

- (a) Prepared so the soil profile can be viewed in original undisturbed position to a depth of at least three feet deeper than the anticipated infiltrative surface, or to a restrictive layer or to seasonal high water table, whichever is shallower; and
 - (b) Open and accessible during the department's inspection.
- (3) Soil logs must be prepared by either a soil scientist or design engineer and include the following:
- (a) Numbers that correspond to the test pit number;
 - (b) Collection date;
 - (c) Weather conditions on the day the test pits were excavated;
 - (d) Soil names and particle size limits of the USDA NRCS Soil Classification System;
 - (e) The most restrictive soil type for hydraulic loading;
 - (f) The most coarse soil type for treatment;
 - (g) Groundwater depth in profile, if present;
 - (h) The presence of fill or debris in the soil profile;
 - (i) Other characteristics that affect the treatment or water movement potential of the soil;
 - (j) The following information, by horizon:
 - (i) Soil type using Table 1 below;
 - (ii) Depth;
 - (iii) Thickness;
 - (iv) Texture;
 - (v) Structure;
 - (vi) Percent rock;
 - (vii) Relative soil density;
 - (viii) Moist soil color using a Munsell soil color chart to describe both the soil matrix and mottling, if present; and
 - (ix) Unusually wet soil; and
 - (k) If prepared by a design engineer, the design engineer's stamp, signature, and date.
- (4) The department may require the owner to submit soil samples for laboratory analysis to confirm soil type and to support the proposed hydraulic loading rates.

- (a) Soil analyses must be performed by a qualified laboratory and reported using the USDA NRCS Soil Classification System.
 - (b) Each sample must be identified by project name, date collected, weather conditions, test pit number, and depth where the sample was collected to the nearest inch.
 - (c) The owner shall provide a copy of the laboratory results to the department.
- (5) When water table measurements are needed to assess the impact of the LOSS on the environment and the highest seasonal water table cannot be reliably determined, the department may require an analysis based on:
- (a) Continuous water table measurements at the site recorded during months of probable high-water table conditions; and
 - (b) Corresponding average monthly precipitation data for the area from the national weather service.
- (6) The department may require additional soil information relevant to the LOSS design.

Table 1: Soil Types and Hydraulic Loading Rates

| Soil Type | Soil Textural Classification | Maximum Hydraulic Loading Rate, for residential strength effluent, gpd/sf |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1 | Gravelly and very gravelly coarse sands, all extremely gravelly soils. | 1.0 |
| 2 | Coarse sands. | 1.0 |
| 3 | Medium sands, loamy coarse sands, loamy medium sands. | 0.8 |
| 4 | Fine sands, loamy fine sands, sandy loams, loams. | 0.6 |
| 5 | Very fine sands, very fine loamy sand, very fine sandy loams; or silt loams and sandy clay loams with a moderate or strong structure (excluding platy structure). | 0.4 |
| 6 | Other silt loams, sandy clay loams, clay loams, silty clay loams. | Not suitable |
| 7 | Sandy clay, clay, silty clay, strongly cemented or firm soils, soil with a moderate or strong platy structure, any soil with a massive structure, any soil with appreciable amounts of expanding clays. Soils greater than 90% rock. | Not suitable |

WAC 246-272B-03500 Minimum Land Area

- (1) To manage nutrient loading, and in addition to any nutrient reduction treatment required by the department based on the SRS or HGR prepared under WAC 246-272B-03200 and 246-272B-03300, the owner shall dedicate a minimum land area for the total development served by the LOSS and the LOSS drainfield.
- (2) For all types of development, the maximum daily volume of effluent that can be discharged per acre of gross land area is shown in Table 2 in this section.
- (3) Table 2 applies to residential strength effluent.
- (4) This section does not apply to individual lot sizes.

Table 2: Maximum Effluent per Acre

| Finest Textured Soil Type within the Vertical Separation | Maximum Effluent, gpd per Acre |
|----------------------------------------------------------------|-----------------------------------|
| 1 and 2 | 900 |
| 3, 4, and 5 | 1,575 |

PART 4: ENGINEERING REQUIREMENTS

WAC 246-272B-04000 Engineering Report

- (1) The engineering report must outline the scope of the LOSS project, provide necessary background information, the design guidance or standards used, calculations for developing plans and specifications, and impact on public health and the environment.
- (2) The engineering report must be prepared using design and technical standards in Part 6 of this chapter and consistent with good engineering practice.
- (3) The engineer may incorporate by reference, or include in an appendix, information developed for the site review or environmental review, if still relevant.
- (4) At a minimum the report must include:
 - (a) An executive summary providing a brief overview of the following:
 - (i) Nature of the project, such as a new development, expansion, phased construction;
 - (ii) Location of the LOSS;
 - (iii) Proposed ownership and management;

- (iv) Facilities served when the development is complete;
 - (v) Design flow;
 - (vi) Wastewater characteristics and strength;
 - (vii) Site and soil characteristics; and
 - (viii) Treatment and dispersal proposal;
- (b) A narrative providing a detailed explanation of the following:
- (i) Facilities served when the development is complete;
 - (ii) Existing or anticipated wastewater characteristics and strength;
 - (iii) Proposed treatment and dispersal method;
 - (iv) Local comprehensive plans, land use and development regulations, sensitive area designations, and requirements by local jurisdictions to connect to public sewer that apply to property the LOSS will be sited on and the development to be served, including the primary and reserve drainfield areas;
 - (v) Existing sewer or water systems on the development site; and
 - (vi) Source of drinking water and water system purveyor for properties served by the LOSS;
- (c) A copy of the applicable parts of:
- (i) City, town, or county comprehensive plans or development regulations for property the LOSS will be sited on and the development it serves, including the primary and reserve drainfield areas; and
 - (ii) City, town, county, or local health jurisdiction requirements for the property to connect to public sewer;
- (d) A statement that the LOSS and development are consistent with the regulations and designations identified in (c) of this subsection;
- (e) An explanation of how the LOSS and the development are consistent with the local comprehensive plan, land use and development regulations, and sensitive and critical areas. The explanation must provide sufficient information to demonstrate that the LOSS and the development are consistent with these regulations and designations, and may include copies of relevant portions of the local comprehensive plan, land use or development regulations, sensitive area designations, or other related documents pertaining to the LOSS site and proposed development;
- (f) A copy of the SEPA checklist and determination or other environmental review and local planning determination for the project;

- (g) A vicinity map showing the project's location;
- (h) A map and development plan of the development area scaled to clearly show the following:
 - (i) Total development area;
 - (ii) Proposed primary and reserve drainfield areas;
 - (iii) Any surface water, wetland, or well within one thousand feet of the drainfield perimeter;
 - (iv) Topographic contour lines and elevations shown at intervals of ten feet or less and verified by field measurements;
 - (v) Drainage basins and drainage patterns throughout the development site;
 - (vi) Any existing or proposed storm water systems or retention basins on the development site;
 - (vii) Location of one hundred-year flood boundaries within one thousand feet of the drainfield perimeter;
 - (viii) Existing or proposed structures, roads, and parking areas adjacent to the proposed drainfield;
 - (ix) Location of existing and proposed encumbrances affecting system placement; and
 - (x) All water, sewer, greywater, reclaimed water, storm water, irrigation lines within ten feet of the project or property boundaries;
- (i) An analysis of the site's capacity to treat and dispose of the proposed quantity and quality of sewage;
- (j) SRS as described in WAC 246-272B-03200, if one was completed;
- (k) HGR as described in WAC 246-272B-03300, if one was completed;
- (l) Soil characterization as described in WAC 246-272B-03400 if updated since the department approval of the predesign report;
- (m) A discussion of proposed treatment processes addressing:
 - (i) Wastewater characterization, flow patterns, and any site specific constituents of concern of the wastewater;
 - (ii) Treatment standard approved by the department in the site review and environmental review process, and the expected treatment performance of the proposed treatment technology;
 - (iii) Proposed O&M activities; and

- (iv) Any alternative treatment processes evaluated;
- (n) Confirmation, including calculations, that the development and LOSS design complies with the minimum land requirements in WAC 246-272B-03500;
- (o) Design criteria, calculations, and any other supporting material needed to develop the plans and specifications, including:
 - (i) Design flow;
 - (ii) Soil type and hydraulic loading rate;
 - (iii) Pipe sizes;
 - (iv) Hydraulic evaluation and drainfield dosing calculations to determine dose volume, orifice size, spacing, residual head;
 - (v) Pump selection with pump and system curves;
 - (vi) Tank size; and
 - (vii) Treatment component design calculations, if applicable, and supporting performance information;
- (p) Proposed monitoring and sampling for influent, effluent, and, if necessary, water quality monitoring to demonstrate treatment standards will be met on an ongoing basis;
- (q) A summary description of how the LOSS will be owned and managed after construction;
- (r) A copy of the legal title or recorded easement to the property where the LOSS will be located showing that the owner retains legal control of the drainfield and LOSS components. If there will be sewage tanks on individual lots, the report must include a plan for obtaining easements if not already established;
- (s) Discussion of the construction process summarizing how the requirements of Part 5 will be met;
- (t) Updated general information, including changes to the following:
 - (i) Name, telephone number, fax number, mailing address, and e-mail address of:
 - (A) Owner of the LOSS proposal;
 - (B) Authorized representative of the owner, if any;
 - (C) Legal owner of property where the LOSS is proposed to be installed;
 - (D) Design engineer;
 - (E) Certified operator, if known; and

- (F) Any other project contact;
- (ii) Project site address, county, tax parcel number, and legal description; and
- (u) A management plan that meets the requirements of WAC 246-272B-04100.

WAC 246-272B-04100 Management Plan

- (1) The management plan must include, at a minimum:
 - (a) A statement identifying whether the ownership of the development served by the LOSS is:
 - (i) A single owner; or
 - (ii) A collection of individually owned lots or units.
 - (b) If a development has individually owned lots or units, a statement that it is managed by:
 - (i) A public entity or a wastewater company regulated by the Washington utilities and transportation commission; or
 - (ii) A private management entity with a public entity or a wastewater company regulated by the Washington utilities and transportation commission contracted as a third party guarantor.
 - (c) A copy of the agreement, ordinance, covenant, or other legal document given to all customers that explains the rights and responsibilities of individual users of the LOSS and of the owner, management entity, or other responsible person. The agreement, ordinance, covenant, or other legal document must include, but is not limited to, the following:
 - (i) The fees and rates to be charged;
 - (ii) How charges may be amended; and
 - (iii) A list of substances that are prohibited from entering the LOSS in WAC 246-272B-06000.
 - (d) A narrative describing the management entity's experience managing LOSS and OSS including, but not be limited to:
 - (i) A list of all LOSS and OSS currently managed and owned, and counties they are located in;
 - (ii) Number of staff and their qualifications.
 - (e) Name, telephone number, fax number, mailing address, and e-mail address for the following:

- (i) Management entity;
 - (ii) Primary contact person for the management entity;
 - (iii) Third-party guarantor, if any.
- (f) A copy of all recorded LOSS and LOSS component easements that allow access to perform O&M, repair, modification, and replacement, if located on private property or in the public right of way, including easements for sewage tanks on individual lots. Easements for sewage tanks on individual lots must be obtained and recorded as the lots are built upon, if not before.
- (g) A description of the specific duties of the management entity;
- (h) A contingency plan to operate, maintain, and manage the LOSS so that public health and the environment are protected during a transition from one management entity to another;
- (i) Signed and notarized management agreement between the LOSS owner and the management entity in which the management entity agrees to comply with the following requirements:
- (i) Operate and maintain the LOSS consistent with this chapter and any other applicable rules or statutes, and with the requirements in the owner's operating permit;
 - (ii) Provide adequate management, staff, and facilities to properly manage the LOSS;
 - (iii) Provide the owner and the department updated contact information including name, telephone number, fax number, mailing address, and e-mail address when changes occur;
 - (iv) Contract with licensed, certified, or local health jurisdiction-approved professionals for maintenance service, pumping, electrical, and mechanical repair and modifications, as needed; and
 - (v) When a proprietary treatment component is used, employ the proprietary treatment component manufacturer to monitor and maintain the proprietary system, or employ a LOSS operator who meets the requirements of WAC 246-272B-07200(3).
- (j) Maintain records of performance and all inspections, repairs, sampling, pumping, and improvements;
- (k) Proof of an accounting and audit system set up and maintained using standard accounting practices; and

- (1) Description of how the owner or management entity will obtain and maintain adequate current and future funding for LOSS operations and capital improvement expenses including:
 - (i) Long-term maintenance and operation of the LOSS and operator costs;
 - (ii) Inspection, repair, and replacement of components; and
 - (iii) Compliance with any conditions of construction approval or conditions that may be included in the operating permit.
- (2) If the LOSS serves individually owned units or lots, the management plan must also include the following:
 - (a) Articles of incorporation and bylaws, including procedures to amend existing agreements for homeowner associations, corporations, or other associations of owners.
 - (b) Name of the association's or corporation's registered agent; and
 - (c) Copies of recorded easements to the LOSS and all components, including sewage tanks on individual lots, regarding access to perform O&M, repair, modification, and replacement. Easements for sewage tanks on individual lots must be obtained and recorded as the lots are built upon, if not before.

WAC 246-272B-04200 Operations and Maintenance Manual

The O&M manual must include the following information:

- (1) Name, telephone number, fax number, mailing address, and e-mail address for the following:
 - (a) Operator;
 - (b) Owner;
 - (c) Design engineer;
 - (d) Installer;
 - (e) Electrician;
 - (f) Pumper;
 - (g) Management entity;
 - (h) Primary contact person for the management entity; and
 - (i) Third party guarantor, if any.
- (2) Owner and operator responsibilities;

- (3) Copies of LOSS legal documents including, but not limited to, the management contract;
- (4) LOSS information including:
 - (a) Narrative description of treatment and dispersal process and components;
 - (b) LOSS flow diagram or schematic; and
 - (c) Design criteria:
 - (i) Number and type of units served;
 - (ii) Design flow;
 - (iii) Soil type and drainfield hydraulic loading rate;
 - (iv) Sieve analysis, if any;
 - (v) Drainfield capacity;
 - (vi) Tank capacities; and
 - (vii) Treatment component capacities.
- (5) Normal operation and maintenance procedures and schedules, including at a minimum:
 - (a) Summary and schedule of permit conditions to be met;
 - (b) Flow metering reading;
 - (c) Recommended component settings;
 - (d) Process control information;
 - (e) Periodic facilities inspection to verify efficiency of operation, adequacy of performance, and general condition of the equipment and components;
 - (f) Periodic inspection of scum and sludge levels and the integrity of LOSS sewage tanks and tanks on individual lots and cleaning filters, pumping tanks, or making repairs as needed;
 - (g) Periodic maintenance of pumps, motors, and switches;
 - (h) Periodic calibration of sampling and measuring devices;
 - (i) Replacement or repair of worn or damaged equipment;
 - (j) Methods that provide dosing and resting cycles for the drainfield; and
 - (k) Other maintenance activities as needed, depending on the type of system.

- (6) Trouble-shooting guide listing possible failure and malfunction situations and responses to repair, replace, or modify LOSS components to restore LOSS function;
- (7) Abnormal operation procedures including, but not limited to:
 - (a) Emergency contact information for the owner, management entity, operator, pumper, local health jurisdiction, department, and any contractors or maintenance provider; and
 - (b) Emergency notification procedures to alert and advise customers, the department, and the local health jurisdiction.
- (8) Documentation of repairs;
- (9) Ongoing component testing methods and schedules;
- (10) Recordkeeping procedures for the following:
 - (a) Operator inspections;
 - (b) Monitoring and sampling;
 - (c) Routine and emergency maintenance;
 - (d) Repairs;
 - (e) Modifications; and
 - (f) Annual reports.
- (11) Safety procedures, including where to find a copy of the following Department of Labor and Industries rules:
 - (a) Chapter 296-809 WAC, Confined spaces;
 - (b) Chapter 296-62 WAC, General occupational health standards;
 - (c) Chapter 296-823 WAC, Occupational exposure to bloodborne pathogens; and
 - (d) Chapter 296-803 WAC, Lockout/tagout (control of hazardous energy).
- (12) Electrical component information and wiring diagram for alarms, panels, pumps, dosing controls;
- (13) Manufacturer cut sheets for all components requiring routine or periodic maintenance;
- (14) Annual operating permit renewal schedule and fee schedule, including where to find the current application form;
- (15) Copies of the following LOSS documents:

- (a) Department approval letter of the engineering report, plans and specifications, and final O&M manual;
 - (b) Current operating permit;
 - (c) Construction completion report submitted with final O&M manual; and
 - (d) LOSS record drawings submitted with final O&M manual showing the locations of all easements.
- (16) Initial component testing information submitted with the final O&M manual, including:
- (a) Tank water tightness testing results;
 - (b) Pipe pressure testing results;
 - (c) Pump chamber drawdown information; and
 - (d) Drainfield squirt heights.
- (17) The final monitoring and reporting plan in its own section of the O&M manual that meets the requirements in WAC 246-272B-04300 submitted with the final O&M manual; and
- (18) Any other information required by the department.

WAC 246-272B-04300 Monitoring and Reporting Plan

At a minimum, the monitoring and reporting plan must include:

- (1) Constituents of the sewage or effluent that must be tested to assure that treatment components are meeting treatment level requirements, and to monitor groundwater or surface water:
 - (a) As required by the department; and
 - (b) For process control.
- (2) Values or ranges of values that must be met for the constituents listed in subsection (1) of this section;
- (3) Sampling frequency, including time and day samples will be taken. Samples must be taken when maximum concentrations of contaminants are expected;
- (4) Procedures for decontaminating sampling equipment and sample ports;
- (5) Field test methods;
- (6) Sampling methods;
- (7) Well purging methods, if applicable;

- (8) Handling and labeling of containers;
- (9) Holding times;
- (10) Quality assurance and quality control procedures;
- (11) Transport of samples;
- (12) List of equipment that will be used for sampling and field testing;
- (13) Test method for each constituent;
- (14) Monitoring that will be performed by a proprietary treatment manufacturer or their agent as described in WAC 246-272B-04100 (1)(g)(v);
- (15) Map or schematics showing any monitoring wells and all sample points;
- (16) Plans and construction specifications for monitoring wells, monitoring points, and piezometers;
- (17) Response plan for abnormal or elevated sampling results which may include additional sampling, notification to the department, treatment, or other appropriate action;
- (18) Any report forms;
- (19) Procedures for submitting required monitoring results to the department; and
- (20) Procedures and schedules for recordkeeping.

WAC 246-272B-04400 Plans and Specifications

- (1) Construction plans and specifications must be clear and detailed documents. Hard copies must use a common engineering drawing size of 22 x 34 inches, 24 x 36 inches, or 11 x 17 inches.
- (2) Plans must include the following:
 - (a) Design flow, treatment level, drainfield and tank sizing, and hydraulic loading rate;
 - (b) LOSS schematic or flow diagram;
 - (c) Hydraulic profile of the LOSS; and
 - (d) Plan and profile views as applicable of all LOSS components.
- (3) Plan sets must be scaled to clearly show all necessary information and include the following:
 - (a) A title sheet, plan and profile sheets, and other information that outlines and details the LOSS facilities design:

- (i) Title block indicating the project title, owner's name, date, seal and signature of the design engineer;
 - (ii) Index to individual sheets;
 - (iii) Vicinity map with project site location;
 - (iv) Master site plan showing facilities served and general system layout; and
 - (v) List of abbreviations, definitions, and symbols used within the plans.
- (b) A general statement that all work must be in conformance with the requirements of this chapter and other design and technical standards specified by the design engineer.
- (4) Plan sheets must be consecutively numbered and include, as appropriate:
- (a) A north arrow;
 - (b) Description of scale in text and with a graphical bar;
 - (c) A descriptive title and date;
 - (d) Plan views;
 - (e) Section views;
 - (f) Profile views;
 - (g) Elevations;
 - (h) Easement and franchise locations and boundaries;
 - (i) Component details;
 - (j) General layout; and
 - (k) Supplemental views.
- (5) Sewage tanks and other treatment component plans and specifications must:
- (a) Show location, dimensions, and elevations of all treatment and pumping units;
 - (b) Include detailed plan and cross-section views with dimensions;
 - (c) Include installation details including placement depth and bedding materials, and connections to the tank to minimize settling impacts;
 - (d) Include a detailed standard plan, including any related electrical components, and installation requirements for tanks designed for individual lots;
 - (e) Specify tank capacity, baffling, filters, risers and other appurtenances, liquid volume, emergency, scum and sludge volumes, float switch or other control component settings;

- (f) Identify manufacturer and model for prefabricated tanks; and
- (g) Include a statement that:
 - (i) Any substitutions must be approved by the design engineer; and
 - (ii) All prefabricated tanks must meet the requirements of chapter 246-272C WAC, On-site sewage system tanks.
- (6) Plans and specifications must include design and structural calculations and all necessary construction information for tanks constructed on-site.
- (7) Plans and specifications for collection and transmission piping must specify:
 - (a) Pipe type, material and size;
 - (b) Pipe elevations;
 - (c) Depth from grade and slope if applicable;
 - (d) Installation details including placement depth and bedding materials;
 - (e) Location and detail for all cleanouts and other appurtenances;
 - (f) Horizontal setbacks from all other utility piping; and
 - (g) All water-sewer crossing detail and instructions.
- (8) Plans for the drainfield component must:
 - (a) Use an appropriate scale of 1:50 or less;
 - (b) Show plan view of trenches or beds in relation to site topography, showing contours on maximum two-foot intervals;
 - (c) Show trench or bed:
 - (i) Length;
 - (ii) Separations;
 - (iii) Pipe size, materials, and configuration; and
 - (iv) Detail of orifice size, spacing and orientation.
 - (d) Show locations of numbered test pits and test wells, if any, in relation to primary and reserve drainfields; and
 - (e) Show trench or bed profile with width, depth, piping, cover and any features such as sand, gravel, geotextile, chambers.
- (9) Plans for alarm systems must:

- (a) Show location of panels and alarms; and
 - (b) Identify manufacturer and model number of panel.
- (10) Plans for flow metering must show:
- (a) Valve locations;
 - (b) Access boxes to grade; and
 - (c) Any special installation instructions.
- (11) Plans must show all electrical components and include a statement that all components meet applicable state or federal codes.
- (12) Plan notes must include quality assurance, inspection, and testing:
- (a) Where appropriate, the installer shall provide documentation to the design engineer that sand or other media meets specifications;
 - (b) The design engineer or authorized representative shall inspect the work during construction;
 - (c) The design engineer shall schedule a final inspection and drainfield pressure test witnessed by the department prior to cover; and
 - (d) The installer shall call for a special inspection for the following type of work:
 - (i) Poured-in-place septic tanks and pump chambers and other special containment vessels;
 - (ii) Proprietary treatment or distribution components;
 - (iii) Any special excavation requirements;
 - (iv) Placement of select fill material or final elevation of fill;
 - (v) Testing of the pressure distribution network prior to final inspection;
 - (vi) Pressure testing of all piping; and
 - (vii) Water tightness testing of all tanks.
- (13) All LOSS construction specifications must be in conformance with state or nationally recognized standards. Examples include, American Public Works Association standards, Ten States Standards, Department of Ecology's Criteria for Sewage Works Design, Department of Transportation's Standard Specifications for Road, Bridge, and Municipal Construction, and the department's recommended standards and guidance.
- (14) Specifications must include all construction information not shown on the plans and necessary to inform the installer of the design requirements including, but not limited to:

- (a) The quality of materials;
- (b) Workmanship and fabrication of the project;
- (c) Type, size, strength, operating characteristics, and rating of equipment;
- (d) Allowable leakage for testing gravity sewer pipe;
- (e) Electrical apparatus and wiring components;
- (f) Meters;
- (g) Operating tools;
- (h) Construction materials;
- (i) Special filter or drainfield media other than native soil;
- (j) Other appurtenances;
- (k) Instructions for testing materials and equipment as needed to meet design standards;
and
- (l) LOSS component and process testing to confirm functionality prior to department final inspection.

PART 5: CONSTRUCTION REQUIREMENTS

WAC 246-272B-05000 Installer Qualifications and Responsibilities

The installer shall:

- (1) Be currently approved by the local health jurisdiction in the county where the LOSS is to be constructed.
- (2) Have the following experience:
 - (a) Three or more years experience installing OSS; or
 - (b) A record of successful completion of at least one similar installation, including a pressure distribution drainfield.
- (3) Maintain a copy of approved plans and specifications on-site during construction;
- (4) Follow the approved plans and specifications or obtain approval from the design engineer prior to making field changes;

- (5) Install sewage tanks approved by the department according to the provisions of chapter 246-272C WAC, On-site sewage system tanks;
- (6) Be on the site at all times during the excavation and construction of the LOSS;
- (7) Backfill and grade the site after construction to prevent surface water from accumulating over any LOSS component; and
- (8) Leave the drainfield lines uncovered until the drainfield passes the department's final inspection. Driplines may be covered prior to inspection.

WAC 246-272B-05100 Construction Oversight and Testing

The design engineer or the engineer's authorized representative shall:

- (1) Conduct inspections to:
 - (a) Verify LOSS construction and materials conform with approved plans and specifications; and
 - (b) Collect data for the record drawings.
- (2) Inspect the following:
 - (a) Poured-in-place sewage tanks construction;
 - (b) Installation of proprietary and public domain treatment and dispersal components;
 - (c) Installation of LOSS components in difficult conditions including, but not limited to, steep slopes and shallow soils; and
 - (d) Placement of sand or other fill material.
- (3) Conduct or witness LOSS component testing to verify that all results fall within acceptable limits:
 - (a) Water tightness testing of all tanks under WAC 246-272B-05200; and
 - (b) Pressure testing of all new collection and conveyance piping according to an acceptable industry standard; and either
 - (c) Pressure and flow testing of the subsurface drip system to verify it functions properly prior to scheduling a LOSS final inspection by the department; or
 - (d) Pressure testing of the drainfield to verify it functions properly prior to scheduling a LOSS final inspection by the department.
- (4) Record baseline pressure and flow information and provide passing results to the department during the final inspection.

WAC 246-272B-05200 Water Tightness Testing of Sewage Tanks

The design engineer shall verify that all sewage tanks used in the LOSS are tested for water tightness by either vacuum testing or water-pressure testing.

- (1) Vacuum testing steps:
 - (a) Seal the empty tank;
 - (b) Temporarily seal access openings, risers, and inlet and outlet pipes; and
 - (c) Introduce negative pressure into the tank and apply a vacuum to four inches (one hundred millimeters) of mercury.
 - (d) The tank passes if ninety percent of vacuum is held for two minutes.
- (2) Water-pressure testing steps:
 - (a) Seal the empty tank;
 - (b) Seal access openings, risers, and inlet and outlet pipes;
 - (c) Fill the tank with water two inches into the riser and let stand for twenty-four hours; and
 - (d) Add water to the tank, if necessary, to the original level.
 - (e) The tank passes if the water level is unchanged after one hour.
- (3) The design engineer shall reject tanks that do not meet the water tightness standard.
- (4) If the tank fails, the owner may try to repair and retest the tank.
 - (a) The test must be completed according to the requirements of subsection (2) or (3) of this section.
 - (b) If the water-pressure test method is used, the twenty-four hour standing time is not required.

WAC 246-272B-05300 Department Final Inspection

- (1) The department shall conduct a final inspection for all LOSS and witness a pressure test of the drainfield prior to cover except for LOSS with subsurface drip systems.
- (2) The department may accept baseline pressure and flow information from the design engineer in lieu of witnessing a pressure test of subsurface drip systems.
- (3) The department may allow the drainfield to be partially covered prior to the final inspection if:

- (a) The design engineer verifies the LOSS has been pretested and functions according to the approved design; and
- (b) The department is able to witness a pressure test of at least the distal orifice in every lateral during the final inspection.

WAC 246-272B-05400 Post-Construction Documentation

Post-construction documents must include the following:

- (1) A LOSS construction completion report prepared by the design engineer that:
 - (a) Is on a form provided by the department;
 - (b) States the LOSS was constructed in substantial accordance with the approved plans and specifications; and
 - (c) Notes changes from the approved plans and specifications, if any.
- (2) LOSS record drawings that:
 - (a) Include one hard copy in a common engineering drawing size of 22 x 34 inches, 24 x 36 inches, or 11 x 17 inches, and one copy in electronic format; and
 - (b) Are scaled to clearly show all necessary information.
- (3) The final management plan that meets the requirements of WAC 246-272B-04100.
- (4) A final O&M manual for the installed LOSS that meets the requirements of WAC 246-272B-04200.

PART 6: DESIGN AND TECHNICAL STANDARDS

Subpart A - General Requirements

WAC 246-272B-06000 General Design Requirements

- (1) Design engineers shall use design criteria detailed in this chapter and from generally accepted guidance and standards when designing LOSS.
- (2) All sewage from a building served must be directed to the LOSS, unless the LOSS permit allows another option.
- (3) LOSS must be designed to produce effluent prior to dispersal that is equal to or higher quality than STE.
- (4) LOSS owners and operators are responsible for ensuring that certain substances do not enter a LOSS collection system. These include:

- (a) Strong bases, acids, chlorinated solvents, or other toxic or hazardous substances;
 - (b) Fire or explosion hazards;
 - (c) Solid or viscous wastes that could plug sewer lines;
 - (d) Drainage from surface runoff, footing drains, roof drains, subsurface storm water infiltration systems, swimming pools, hot tubs, and other nonsewage drains; and
 - (e) Industrial wastewater.
- (5) Chemicals in common household products used in moderate amounts are exempt from the provisions of subsection (4) of this section.
- (6) Drainage identified in subsection (4) of this section must also be prevented from entering any areas where LOSS components are located, including primary and reserve drainfield areas.

WAC 246-272B-06050 Horizontal Setbacks

- (1) The design engineer shall design the LOSS and verify it is installed in compliance with the minimum horizontal setbacks shown in Table 3 of this section.
- (2) The design engineer shall increase the separation distance between the LOSS and a public drinking water well, spring, or surface water supply if required by the water purveyor's source water protection program, prepared under chapter 246-290 WAC, Group A public water supplies.
- (3) The department may require greater horizontal setbacks than the minimum values shown in Table 3 when needed to protect public health and the environment. Such areas include, but are not limited to, those with:
- (a) Highly permeable soils;
 - (b) Unconfined aquifers;
 - (c) Locally identified and state-identified areas of concern such as critical aquifer recharge areas or shorelines;
 - (d) Shallow soils;
 - (e) Saturated soils; and
 - (f) Hand-dug or improperly abandoned wells.
- (4) The department may approve a sewer line placed less than ten feet from a water line only:
- (a) With the written approval of the owner of the water line; and

- (b) When the water line is protected from leakage and contamination consistent with the Department of Ecology "Criteria for Sewage Works Design," August 2008, or the Department of Ecology and Department of Health publication "Pipeline Separation Design and Installation Reference Guide," July 2006.

Table 3: Minimum Horizontal Setbacks

| Items requiring setback | From edge of drainfield and reserve area | From sewage tank and distribution box | From building sewer, and nonperforated distribution pipe |
|---------------------------------------------------------------------------------|------------------------------------------|---------------------------------------|----------------------------------------------------------|
| Well or suction line | 100 ft. | 50 ft. | 50 ft. |
| Public drinking water well | 100 ft. | 100 ft. | 100 ft. |
| Spring used as a drinking water source | 200 ft. | 200 ft. | 100 ft. |
| Surface water (measured from ordinary high water mark) | 100 ft. | 50 ft. | 10 ft. |
| Pressurized water supply line | 10 ft. | 10 ft. | 10 ft. |
| Decommissioned well: Decommissioned according to chapter 173-160 WAC | 10 ft. | N/A | N/A |
| Lined storm water pond located: | | | |
| Down-gradient from LOSS component: | 75 ft. | 10 ft. | 10 ft. |
| Up-gradient from LOSS component | 30 ft. | 10 ft. | 10 ft. |
| Unlined storm water pond (up or down-gradient from the LOSS component) | 100 ft. | 50 ft. | 10 ft. |
| Building foundation and in-ground swimming pool located: | | | |
| Down-gradient from LOSS component | 30 ft. | 5 ft. | 2 ft. |
| Up-gradient from LOSS component | 10 ft. | 5 ft. | 2 ft. |
| Property or easement line | 5 ft. | 5 ft. | N/A |
| Interceptor, curtain drains, foundation drains, lined drainage ditches located: | | | |
| Down-gradient from LOSS component | 30 ft. | 5 ft. | N/A |
| Up-gradient from LOSS component | 10 ft. | N/A | N/A |

Table Continued

| Items requiring setback | From edge of drainfield and reserve area | From sewage tank and distribution box | From building sewer, and nonperforated distribution pipe |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------------------|----------------------------------------------------------|
| Other site features that may allow effluent to surface located: Down-gradient from LOSS component | 30 ft. | 5 ft. | N/A |
| Up-gradient from LOSS component | 10 ft. | N/A | N/A |
| Down-gradient cuts or banks with at least 5 ft. of original, undisturbed soil above a restrictive layer | 25 ft. | N/A | N/A |
| Down-gradient cuts or banks with less than 5 ft. of original, undisturbed, soil above a restrictive layer | 50 ft. | N/A | N/A |
| Down-gradient subsurface storm water infiltration or dispersion component | 30 ft. | N/A | N/A |
| Up-gradient subsurface storm water infiltration or dispersion component | 100 ft. | N/A | N/A |
| Other adjacent drainfields, including individual OSS beds or dispersal sectors | 10 ft. | N/A | N/A |

WAC 246-272B-06100 Vertical Separation

- (1) A vertical separation of at least three feet is required between the infiltrative surface of the drainfield bed or trench and:
 - (a) The highest seasonal water table;
 - (b) A restrictive layer; or
 - (c) Soil types 6 or 7.

- (2) The department may allow a reduction of vertical separation to a minimum of two feet when all of the following criteria are met:
 - (a) Soil types 2-5;
 - (b) Treatment is provided prior to dispersal as follows:
 - (i) For LOSS with design flows up to and including 14,500 gpd, Treatment Level C or better;
 - (ii) For LOSS with design flows greater than 14,500 gpd, Treatment Level HQE.

- (c) Information collected during the site review process clearly demonstrates minimum vertical separation can be maintained across the primary and reserve drainfield areas;
 - (d) An HGR is submitted that demonstrates that the site can safely and adequately disperse the effluent; and
 - (e) The monitoring and reporting plan includes a sampling program and schedule that demonstrates that required performance standards are consistently met.
- (3) The department may impose additional requirements when necessary to protect public health and the environment including, but not limited to:
- (a) Higher level of treatment;
 - (b) Monitoring and evaluation of the seasonal high water table;
 - (c) Additional tank capacity to handle flow surges and allow flow attenuation; and
 - (d) Increased horizontal setbacks.

WAC 246-272B-06150 Design Flows

- (1) The design engineer shall use the following minimum design flows, which include the appropriate peaking factors, for developments or portions of developments serving residential facilities such as single-family residences, multi-family dwellings, and mobile home parks with total LOSS design flows of 14,500 gpd or less:
- (a) Modifications of existing developments:
 - (i) 120 gpd per bedroom; or
 - (ii) 240 gpd per existing dwelling unit, residence or mobile home lot or space, whichever is greater.
 - (b) New residential developments and new mobile home parks:
 - (i) 120 gpd per bedroom; or
 - (ii) 360 gpd per lot or space, whichever is greater.
- (2) The design engineer shall use 270 gpd minimum design flow per dwelling unit, residence or mobile home lot or space for residential developments or portions of developments serving residential facilities, with total LOSS design flow greater than 14,500 gpd.
- (3) For commercial and nonresidential developments or portions of developments that serve commercial and nonresidential facilities, the department may accept the following:
- (a) Design flows listed in Table 4 in this section; or
 - (b) Design flows from other generally recognized sources, on a case-by-case basis.

Table 4: Typical Design Flows for Nonresidential Facilities

| Type of Facility | Design Unit ¹ | Design Flow (gpd) |
|---------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------|
| Schools with showers and cafeteria ² | per student | 16 |
| Schools without showers and with cafeteria ² | per person | 12.6 |
| Schools without showers and without cafeteria | per person | 10 |
| Boarding schools ² | per person | 75 |
| Temporary farm worker housing ² | per person | 50 |
| Hotels, motels, and B&Bs | per room | 130 |
| Restaurants ² | per seat | 50 |
| Truck stops and Interstate restaurants ² | per seat | 180 |
| Offices, with showers | per person, per 8-hr shift | 25 |
| Offices, without showers | per person, per 8-hr shift | 15 |
| Nursing homes ² | per bed | 200 |
| Elder care facilities, retirement homes ² | per bed | 100 |
| Laundromats ² | per machine | 500 |
| Churches, without kitchen | per seat | 3 |
| Churches, with kitchen ² | per seat | 5 |
| Day care centers | per person | 20 |
| Picnic areas | per person | 5 |
| Campgrounds, RV parks with flush toilets only, no laundry or wet sewer hookup | per camp site | 50 |
| Campgrounds, RV parks with flush toilets, showers, laundry, no wet sewer hookup | per camp site | 75 |
| Campgrounds, RV parks with flush toilets, showers, and wet sewer hookup, with or without laundry ² | per RV space | 120 |
| Trailer dump stations ² | per dump | 40 |
| Resort cabin | per person | 40 |
| Bar, cocktail lounge ² | per seat | 20 |

¹Does not include employees and staff, unless indicated.

²Indicates potential for waste strength to exceed that of residential strength sewage, requiring Treatment Level E or higher.

- (4) For the department to evaluate alternate design flows, a written request and the following information must be submitted:
 - (a) The preceding year's actual metered flow data read at intervals acceptable to the department to capture seasonal and peak usage; or
 - (b) Comparable flow data from similar existing facilities, including:
 - (i) From a minimum of three similar developments; and
 - (ii) Using a peaking factor if average flows are recorded.

WAC 246-272B-06200 Sewage Characterization

- (1) The design engineer shall identify sewage characteristics in terms of the following:
 - (a) CBOD5, TSS, O&G, BOD5, and fecal coliform bacteria;
 - (b) Other parameters that can impact treatment anywhere in the treatment sequence including, but not limited to, pH, temperature and dissolved oxygen; and
 - (c) Nitrogen and phosphorus, where either parameter is identified as a contaminant of concern.
- (2) For LOSS treating sewage from nonresidential or commercial sources, the design engineer shall submit:
 - (a) Discharger information to show the sewage is not from an industrial facility;
 - (b) Sewage characterization that identifies any parameters not typically found in residential strength sewage; and
 - (c) Data that demonstrates that effluent quality is or will be equivalent to or better than effluent from a properly sized septic tank treating residential strength sewage.

WAC 246-272B-06250 Treatment

- (1) Treatment to produce effluent of a higher quality than STE is required when:
 - (a) LOSS conditions match those in Table 6 of this section that require minimum Treatment Levels E, C, B, HQE, N10, N20, or P;
 - (b) Sewage characteristics exceed typical values expected from residential strength sewage; or
 - (c) The department determines it is needed based on results of the site and environmental review process.
- (2) Treatment level parameters are shown in Table 5 of this section. The values represent maximum annual average effluent requirements.

- (3) Treatment technology requirements are in WAC 246-272B-06550.
- (4) Table 6 shows minimum required treatment levels for various conditions.
- (5) To determine the minimum treatment level for a proposed LOSS, the design engineer shall:
 - (a) Identify the coarsest textured soil within the vertical separation shown in the soil logs;
 - (b) Use Table 6 in this section with the coarsest textured soil type, and proposed design flow and sewage characteristics to identify a minimum treatment level; and
 - (c) Increase the treatment level, if the drainfield is near areas where pathogens or other effluent parameters are a public health or environmental concern including, but not limited to:
 - (i) Shellfish growing areas;
 - (ii) Designated swimming areas; and
 - (iii) Well head protection areas.
- (6) The design engineer shall propose, at a minimum, specific values for Treatment Level HQE parameters and performance levels based on project-specific site and soil conditions. The department shall review and, if appropriate, confirm parameter values and performance levels.
- (7) For LOSS with design flow of 14,500 gpd or less, the design engineer shall not use disinfection treatment to meet the fecal coliform standard in:
 - (a) Treatment Level B for drainfields in Type 1 soils; or
 - (b) Treatment Level C.
- (8) For LOSS with design flow above 14,500 gpd, the department may allow disinfection treatment to meet the fecal coliform standard if all of the following conditions are met:
 - (a) The owner shall employ a qualified operator for the lifetime of the LOSS;
 - (b) The monitoring and reporting plan described in WAC 246-272B-04300 must demonstrate performance standards are consistently met; and
 - (c) The management plan described in WAC 246-272B-04100 must verify that the ownership, management, and financial resources are adequate to meet subsection (7)(a) and (b) of this section for the lifetime of the LOSS.

- (9) The department may:
- (a) Impose more stringent treatment and design requirements if necessary to protect public health or the environment;
 - (b) Require, as a condition of the operating permit, ongoing influent, effluent, and groundwater monitoring, to assure performance requirements are met;
 - (c) Require the owner to have a service contract with the proprietary treatment manufacturer or a qualified operator according to WAC 246-272B-07200(3) when the department determines the proposed treatment requires frequent operator attention to meet performance requirements; or
 - (d) Deny approval for LOSS designs that propose using specific technologies or treatment processes that have monitoring and sampling histories indicating inadequate or unreliable performance.

Table 5: Treatment Levels

| Effluent Parameters* | | | | | | |
|-----------------------------|-----------------------------|---------------|---------------|------------------|--------------|-------------|
| Treatment Level | CBOD ₅ (mg/L) | TSS (mg/L) | O&G (mg/L) | FC (#/100 ml) | TN (mg/L) | P (mg/L) |
| HQE | * * | * * | * * | * * | * * | * * |
| B | 15 | 15 | | 1,000 | | |
| C | 25 | 30 | | 50,000 | | |
| E | 125 | 80 | 20 | | | |
| N ₁₀ | | | | | 10 | |
| N ₂₀ | | | | | 20 | |
| P | | | | | | * * |

* The values represent effluent maximum annual averages.

* * Site specific; see WAC 246-272B-06250(7).

Table 6: Requirement Minimum Treatment Levels for Various Conditions

| Conditions | Minimum Required Treatment Level |
|------------------------------------------------------------------------------|-------------------------------------------------------|
| Project Specific ¹ | HQE ² |
| Vertical Separation of 2 to < 3 feet, design flow higher than 14,500 gpd | HQE |
| Soil Type 1 | B |
| Vertical Separation of 2 to < 3 feet, design flow 14,500 gpd or less | C |
| Sewage that is not residential strength | E |
| All sites not requiring B, C, E or HQE | STE |
| Sites where nitrogen or phosphorus is identified as a contaminant of concern | N ₁₀ , N ₂₀ , or P ³ |

Table 6 Notes:

1. As identified during the site review process.
2. HQE: High quality effluent; project specific standards are set case-by-case. Treatment Level HQE is required where Treatment Level B is inadequate, or may be chosen by the LOSS owner.
3. As required by the department, based on the environmental review. Nitrogen treatment higher than N10 may be required for some sites. Phosphorus or other treatment value will be project specific, determined in the environmental review or by local or state regulation.

WAC 246-272B-06350 Drainfields

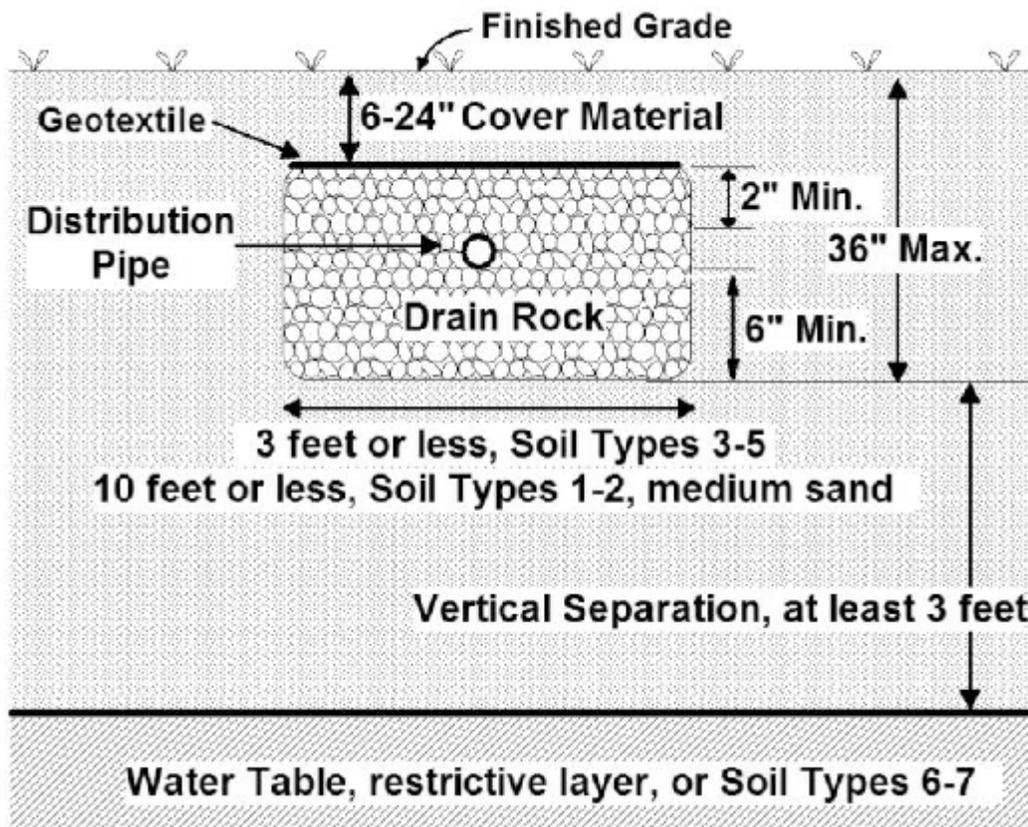
- (1) Pressure distribution with timed dosing to the drainfield is required for all LOSS projects. A typical drainfield profile is shown in Figure 2 in this section.
- (2) The drainfield area must be sufficient to allow installation of the required capacity and for a reserve area calculated using requirements in this section.
- (3) The drainfield for a new LOSS must be located on the property served or within one-half mile or less from the new drainfield site property line to the closest point of the development property line.
- (4) Any easements and right of way franchises must be obtained, recorded on the property title, and copies submitted to the department according to WAC 246-272B-04100 (1)(f).
- (5) The design engineer shall not design or approve the installation of a drainfield as part of a LOSS where:

- (a) The slope is greater than thirty percent or seventeen degrees;
 - (b) The area is subject to:
 - (i) Encroachment by buildings or other construction including, but not limited to, placement of power poles and underground utilities;
 - (ii) Cover by impervious material; or
 - (iii) Vehicular traffic.
 - (c) The reserve area is insufficient to treat and dispose of all of the design flow;
 - (d) The land is unstable;
 - (e) Surface drainage is directed toward the drainfield site; or
 - (f) Other activities or conditions identified by the department could adversely affect the soil or the performance of the LOSS.
- (6) Except with the use of subsurface driplines or when treatment is provided consistent with subsection (16) or (17) of this section, drainfield components must be sized as follows:
- (a) Hydraulic loading rates must not exceed the rates listed in WAC 246-272B-03400, Table 1;
 - (b) Calculation of the absorption area must be based on the design flow determined following requirements of WAC 246-272B-06150; and
 - (c) One hundred fifty percent of the required drainfield capacity must be constructed and sufficient area held in reserve to construct another fifty percent.
- (7) Drainfield sizing when subsurface dripline is used must meet the requirements of WAC 246-272B-06650 (20) and (22).
- (8) Drainfield pipe materials must meet the following minimum specifications:
- (a) ASTM D2241-05 Class 200 or equivalent; or
 - (b) For schedule 40 and schedule 80 PVC, the material must meet ASTM D1785-06.
- (9) A minimum of three equal-sized distribution sectors must be provided to allow for resting, emergency capacity, and repair capability.
- (10) Dosing must automatically rotate among the active distribution sectors.
- (11) The infiltrative surface must not be deeper than three feet below finished grade.
- (12) The infiltrative surface must be constructed level.
- (13) On sloping sites, the trenches and beds must run parallel to the natural ground contours.

- (14) For drainfields using drain rock and distribution pipe, the following are required:
- (a) A minimum of six inches of drain rock below the distribution pipe;
 - (b) A minimum of two inches of drain rock above the distribution pipe;
 - (c) A minimum of six inches of sidewall must be located in original undisturbed soil; and
 - (d) Six to twenty-four inches of cover material.
- (15) For drainfields using trenches, the following minimum separations are required:
- (a) Four and one-half feet between adjacent trench sidewalls; and
 - (b) Ten feet from the edge of one drainfield sector to the edge of an adjacent drainfield sector.
- (16) For drainfields using beds, the following are required:
- (a) Installation only in soil types 1 or 2, or in medium sands;
 - (b) Maximum bed width of ten feet; and
 - (c) Minimum separation between adjacent bed walls of ten feet.
- (17) With documentation and justification from the design engineer, the department may authorize one of the following design changes for a LOSS that meets Treatment Level C or better and has a design flow of 14,500 gpd or less:
- (a) The hydraulic loading rate in Table 1, WAC 246-272B-03400, may be increased:
 - (i) Up to a factor of two for soil types 2-4; or
 - (ii) Up to a factor of one and one-half for soil type 5;
 - (b) Vertical separation may be reduced as described in WAC 246-272B-06100; or
 - (c) The constructed drainfield capacity may be reduced from one hundred fifty percent to one hundred percent if the reserve area has the capacity to receive one hundred percent of the design flow.
- (18) With documentation and justification from the design engineer, the department may authorize one of the following design changes for a LOSS that meets Treatment Level C or better and has a design flow greater than 14,500 gpd.
- (a) The Table 1 hydraulic loading rate may be increased up to a factor of one and one-half for soil types 2-4;
 - (b) Vertical separation may be reduced as described in WAC 246-272B-06100; or

- (c) The constructed drainfield capacity may be reduced from one hundred fifty percent to one hundred percent if the reserve area has the capacity to receive one hundred percent of the design flow.
- (19) The department shall only approve one design change listed in subsections (17) or (18) of this section for any proposed LOSS.
- (20) The reserve area for the drainfield must be calculated based on maximum hydraulic loading rates in Table 1 in WAC 246-272B-03400 and may not be reduced by the provisions listed in subsection (17) or (18) of this section.

Figure 2: Typical Pressure Distribution Drainfield Profile



WAC 246-272B-06400 Design Requirements to Allow Monitoring and Maintenance

- (1) The design engineer shall design LOSS to facilitate operation, monitoring and maintenance. The design of cleanouts and monitoring ports must be consistent with good engineering practice and the department's recommended standards and guidance for pressure distribution systems.
- (2) All accesses to LOSS components must be designed to:
 - (a) Allow for monitoring and maintenance activities;
 - (b) Prevent unauthorized access; and
 - (c) Minimize confined space entry. Confined space entry is regulated by department of labor and industries under chapter 296-809 WAC, Confined spaces.
- (3) The design engineer shall design and verify that the LOSS meets the following minimum requirements:
 - (a) Service access ports must be installed at finished grade for all LOSS components;
 - (b) Monitoring ports must:
 - (i) Be a minimum of four inches in diameter;
 - (ii) Extend from the infiltrative surface of the drainfield to final grade;
 - (iii) Have a cap or cover to stop precipitation from entering them; and
 - (iv) Be anchored so they remain in place.
 - (c) Mechanical and electric distributing valves, if used, must be accessible to allow verification that they are working properly;
 - (d) Controls and warning devices must be clearly accessible and visible including, but not limited to:
 - (i) Process controls, such as measuring devices, float and pressure activated pump on-off switches, pump-run timers, and process flow controls;
 - (ii) Diagnostic tools, such as dose cycle counters and flow meters on either the water supply or sewage stream or hour meters on the sewage stream; and
 - (iii) Alarms.
 - (e) Audible and visual alarms must be placed on a circuit independent of the pump circuit.

WAC 246-272B-06450 Sewage Tanks

- (1) The design engineer shall specify and the installer shall install only sewage tanks that comply with the requirements of chapter 246-272C WAC, On-site sewage system tanks, and this section.
- (2) Sewage tanks must be tested for water tightness after installation at the project site, per requirements of WAC 246-272B-05200. The department shall not issue final approval for a LOSS with a sewage tank that does not pass the water tightness test.
- (3) Sewage tanks used in proprietary treatment systems must be sized according to the manufacturer's specifications.
- (4) Septic tanks must have:
 - (a) An effluent screen with a maximum mesh size of one-eighth inch for all applications;
 - (b) The following minimum liquid volumes:
 - (i) One thousand gallons per residence for LOSS treating sewage from a residential development where individual lots each have a tank;
 - (ii) Three times the daily design flow for all other LOSS.
- (5) Where proprietary treatment is used, the department may approve other septic tank sizes if justified by the manufacturer.
- (6) Sizing of a sewage tank used for hydraulic surge control or where batch treatment occurs must be justified and any effect on treatment must be addressed.
- (7) The design engineer shall size the pump chamber so there is sufficient volume, at a minimum, for:
 - (a) Routine dosing;
 - (b) Pump submergence;
 - (c) Scum and sludge storage; and
 - (d) Emergency storage.
- (8) Emergency storage must be provided in the pump chamber or in the LOSS at or before the point at which pumping will stop during a power outage, as follows:
 - (a) Twenty-four hours of reserve capacity for LOSS with design flow from 3,500 up to and including 14,500 gpd; and
 - (b) Twelve hours reserve capacity for LOSS with design flow above 14,500 gpd.
- (9) No reduction in pump tank reserve volume is allowed with a back-up power generator.

- (10) Grease interceptors must have:
- (a) A minimum volume of one thousand gallons; or
 - (b) Two times the daily greywater design flow of the facility served, whichever is greater.

WAC 246-272B-06500 Collection, Conveyance, and Other Piping Appurtenances

- (1) Collection and conveyance systems and their sewer pipes, manholes, air release valves, lift stations, and other appurtenances must be designed and constructed to prevent contamination of drinking water, and protect ground and surface water, public health, and the environment from contamination with untreated or partially treated sewage.
- (2) The design and construction of LOSS piping must be consistent with good engineering practice, the Department of Ecology's publication "Criteria for Sewage Works Design," August 2008, and the Department of Ecology and Department of Health publication "Pipeline Separation Design and Installation Reference Guide," July 2006.
- (3) LOSS piping systems must be designed to prevent infiltration and inflow of groundwater, surface water and storm water.
- (4) The department may require owners of existing LOSS to conduct infiltration and inflow analysis and may require repair and replacement of piping and appurtenances to reduce infiltration and inflow.

Subpart B - Specific Technologies

WAC 246-272B-06550 Public Domain and Proprietary Technologies

- (1) The department shall only approve treatment technologies and distribution technologies that comply with this section.
- (2) For public domain treatment technologies with department published recommended standards and guidance and approved specific treatment levels, the design engineer shall submit stamped, signed, and dated design calculations and reference the applicable standards and guidance documents used for the calculations.
- (3) For public domain treatment technologies with no department published recommended guidelines and standards, the design engineer shall submit a stamped, signed, and dated engineering report that:
 - (a) Demonstrates the treatment technology can consistently meet the required treatment level;
 - (b) Contains supporting information, including flow data, and influent and effluent quality sampling results from a minimum of three LOSS installations with similar design loading to support the performance claim; and
 - (c) Includes design calculations citing the industry recognized source.

- (4) For proprietary treatment technologies registered with the department according to chapter 246-272A WAC, On-site sewage systems, with flows less than 3,500 gpd to the treatment component, the design engineer shall submit stamped, signed, and dated design calculations or references manufacturer sizing guidelines.
- (5) For proprietary treatment technologies registered with the department according to chapter 246-272A WAC, On-site sewage systems, and unregistered proprietary treatment technologies with flows 3,500 gpd or greater to the treatment component, the design engineer shall submit a stamped, signed, and dated engineering report that includes:
 - (a) Dated written confirmation from the proprietary product design engineer stating the technology is suitable for the proposed LOSS and can consistently meet the required treatment level;
 - (b) Design calculations or references to manufacturer sizing guidelines; and
 - (c) Supporting information, including flow data, and influent and effluent quality sampling results from a minimum of three LOSS installations with similar design loading to support the performance claim.
- (6) For all public domain distribution technologies that the department has developed recommended standards and guidance, the design engineer shall submit stamped, signed, and dated design calculations and reference the applicable standard, guidance, or rule used.
- (7) For proprietary distribution technologies that are registered with the department according to chapter 246-272A WAC, On-site sewage systems, the design engineer shall submit stamped, signed, and dated design calculations and reference the applicable standard, guidance, or rule used.

WAC 246-272B-06600 Pressure Distribution

- (1) Pressure distribution with timed dosing of LOSS effluent to the drainfield is required.
- (2) The maximum spacing between the outside laterals and the edge of the trench or bed must be one-half of the selected orifice spacing, with a variance of one-half foot or less.
- (3) All pressure distribution laterals must be equipped with cleanouts and monitoring ports at the distal ends and accessible at finished grade.
- (4) Required distribution system minimum residual pressure head:
 - (a) Is two feet or 0.87 psi for distribution systems with three-sixteenth inch diameter orifices and larger; and
 - (b) Is five feet or 2.18 psi for distribution systems with orifices smaller than three-sixteenth inch diameter.

- (5) If any portion of the pump fittings or effluent transport line is at a higher elevation than the drainfield, the distribution system must be equipped with an air vacuum release valve or other device to prevent siphoning.
- (6) Duplex alternating pumps that provide timed dosing to the drainfield are required.
- (7) Quick disconnect couplers or an equivalent quick disconnect system for all sewage pumps are required.
- (8) If float switches are used, they must be mounted independent of the pump discharge and transport line.
- (9) All mechanical and electrical components must be rated for wastewater applications.
- (10) The control panel for the pressure distribution pumps must:
 - (a) Contain an elapsed time meter and a dose counter;
 - (b) Be in an enclosure that is secure from tampering and, if outside, resistant to weather; and
 - (c) Be equipped with both audible and visual alarms.
- (11) The drainfield dose frequency must be a minimum of six doses per day.
- (12) Except where subsurface drip distribution is used, the volume of each dose must be at least five times the internal volume of the pipe dosing network to be pressurized.
- (13) The variation in orifice discharge rates within any one lateral must not be more than ten percent.
- (14) The variation in orifice discharge rates over the entire distribution system must not be more than fifteen percent.
- (15) Orifices must be no smaller than one-eighth inch in diameter.
- (16) Orifices must be evenly distributed along the laterals and spaced as follows:
 - (a) In soil types 1, 2, and 3, and in sand filters, sand-lined trenches and beds, recirculating gravel filters and mounds, the maximum orifice spacing must be:
 - (i) One orifice per six square feet of infiltrative surface when not using gravelless chambers; or
 - (ii) One orifice per nine square feet of infiltrative surface when using gravelless chambers.
 - (b) In soil types 4 and 5, the maximum orifice spacing must be one orifice every six feet on center along the lateral.

- (17) When using gravelless chambers with pressure distribution, the orifices must be oriented in the twelve o'clock position.
- (18) Pressure distribution systems with design flows greater than 14,500 gpd must include:
 - (a) The capacity for remote or off-site operation and alarm notification; and
 - (b) A means to connect to an emergency power generator.
- (19) Electrical components and wiring must comply with WAC 296-46B-501, Special occupancies NEC Class I locations.
- (20) Electrical control and other electrical components must be approved by Underwriters Laboratories (UL) or an equivalent rating agency.

WAC 246-272B-06650 Subsurface Drip Systems

- (1) Subsurface drip systems must have a:
 - (a) Supply line to deliver effluent to the dripline; and
 - (b) Return line to route filter and line flushing waste back to the primary treatment unit.
- (2) Where Treatment Level C or better is provided, the return line may be double-plumbed to the primary treatment tank and pump chamber to return flush water to the pump chamber under normal operation, and to the primary tank during chemical cleaning flushes.
- (3) The dripline must be installed to a minimum depth of eight inches into original, undisturbed soil. Where frost is a concern, the design engineer should consider deeper placement.
- (4) Maximum dripline installation depth is three feet below finished grade.
- (5) For determining vertical separation, the infiltrative surface for a drip system may be assumed to be the same as installed dripline depth.
- (6) Air and vacuum relief valves must be installed:
 - (a) At the high point of each distribution sector on both the supply and return sides; and
 - (b) In a valve box with access to finished grade, including a gravel sump.
- (7) All mechanical and electrical components must be rated for wastewater applications.
- (8) Electrical components and wiring used in drip system design must comply with requirements of WAC 296-46B-501, Special occupancies NEC Class I locations.
- (9) Electrical control and other electrical components must be approved by Underwriters Laboratories (UL) or an equivalent rating agency.
- (10) Duplex alternating pumps that provide timed dosing to the drainfield are required.

- (11) Quick disconnect couplers or an equivalent quick disconnect system for all sewage pumps are required.
- (12) If float switches are used, they must be mounted independently of the pump discharge and transport line.
- (13) The control panel for the pumps must:
 - (a) Include read-outs for a flow meter and a pressure gauge, calibrated for the system design flow and pressure range;
 - (b) Include a means to track and verify dosing;
 - (c) Be in an enclosure that is secure from tampering and, if outside, resistant to weather;
 - (d) Be equipped with both audible and visual alarms;
 - (e) Include the capacity for remote or off-site operation and alarm notification; and
 - (f) Provide a means to connect to an emergency power generator.
- (14) Automatic flushing of the filters, manifolds, and dripline is required.
- (15) A chemical injector port must be installed at an appropriate location in the drip system to allow future injection of chemicals when needed for cleaning.
- (16) Any additional filtration recommended by the dripline manufacturer must be provided.
- (17) A flow meter with totalizer feature and a pressure gauge, both with remote read-out capability, are required for all drip systems.
- (18) All components requiring regular service or used to monitor system performance, such as filters, actuated valves, flow meters, and pressure gauges, must be installed in a valve box with locking lid and access at finished grade.
- (19) A minimum of twelve equally spaced timed doses per day per distribution zone is required.
- (20) Calculation of the absorption area must be based on:
 - (a) The design flow that meets the requirements of WAC 246-272B-06150; and
 - (b) The requirements in this section, including Table 7.
- (21) Maximum nominal emitter discharge rates are:
 - (a) One and three-tenths gallons per hour in soil types 1, 2, and 3; and
 - (b) Six-tenths gallons per hour in soil types 4 and 5.
- (22) The values in Table 7 must be used to determine the minimum number of emitters and minimum dripfield area required for a subsurface drip system.

- (a) Select the desired emitter and dripline spacing.
- (b) Determine the minimum number of emitters required by dividing the design flow of the LOSS by the maximum daily emitter discharge that corresponds to the soil type and selected emitter and dripline spacing.
- (c) Calculate the minimum dripfield area by multiplying the minimum number of emitters by the area per emitter value that corresponds to the chosen emitter and dripline spacing.

Table 7: Maximum Daily Emitter Discharge Rates

| | | | Maximum Daily Emitter Discharge (gpd/Emitter)* | | | | |
|-----------------------------|------------------------------|-------------------------------------|---------------------------------------------------|-----|------|-----|-------|
| | | | Soil Types | | | | |
| Emitter Spacing (inches) | Dripline Spacing (inches) | Area per Emitter (ft ²) | 1* * | 2 | 3 | 4 | 5 |
| 6 | 12 | 0.5 | 0.5 | 0.5 | 0.25 | 0.2 | 0.125 |
| 12 | 12 | 1.0 | 1 | 1 | 0.5 | 0.4 | 0.25 |
| 12 | 18 | 1.5 | 1 | 1 | 0.8 | 0.6 | 0.4 |
| 12 | 24 | 2.0 | 1 | 1 | 0.8 | 0.8 | 0.4 |
| 24 | 24 | 4.0 | 1 | 1 | 1 | 1 | 0.4 |

* Table values apply regardless of additional treatment.

* * Requires treatment to Treatment Level B or better.

WAC 246-272B-06700 Sand-Lined Trenches and Beds

- (1) Sand-lined trenches or beds may be used to meet Treatment Level B.
- (2) The minimum dosing frequency is:
 - (a) Twelve equally spaced timed doses per day for coarse sand; or
 - (b) Six equally spaced timed doses per day for ASTM C-33 sand.
- (3) The maximum allowable hydraulic loading rate is one gallon per square foot per day.
- (4) The design engineer shall:
 - (a) Use coarse sand that meets the following specifications:
 - (i) Particle size distribution per Table 8 of this section;
 - (ii) Effective particle size from 0.3 to 0.5 mm; and

- (iii) Uniformity coefficient less than four; or
- (b) Use sand that meets the ASTM-33 specification, Table 9 of this section and:
 - (i) Has no more than forty-five percent passing any one sieve and retained on the next consecutive sieve, of those listed in Table 9 of this section; and
 - (ii) Has a fineness modulus of not less than 2.3 or more than 3.1. The fineness modulus is calculated by adding the cumulative percents of samples retained on the sieves listed in Table 9 and dividing the sum by 100; or
- (c) Verify that the sand material meets the desired specification and provide to the department a particle size analysis of the sand material.
- (5) The minimum depth of sand media is twenty-four inches.
- (6) The design engineer shall:
 - (a) Design the LOSS to meet the drainfield requirements in Table 3 in WAC 246-272B-06050 for the minimum horizontal setback from the edge of the sand-lined trench or bed;
 - (b) Specify that for installations in type 1 soil, trench and bed widths be increased by one foot from the calculated minimum absorption area based on design flow; the additional volume must be filled with sand media in order to prevent effluent from bypassing filter media by flowing out the sidewalls; and
 - (c) Specify monitoring ports as required in WAC 246-272B-06400.

Table 8: Coarse Sand - Required Particle Size Distribution

| Sieve | Particle Diameter, mm | Percent Passing by Weight |
|----------|-----------------------|---------------------------|
| 3/8 inch | 9.50 | 100 |
| No. 4 | 4.75 | 95 to 100 |
| No. 8 | 2.36 | 80 to 100 |
| No. 16 | 1.18 | 45 to 85 |
| No. 30 | 0.6 | 15 to 60 |
| No. 50 | 0.3 | 3 to 15 |
| No. 100 | 0.15 | 0 to 4 |

Table 9: Fine Aggregate - ASTM C-33 Sand - Particle Size Distribution

| Sieve | Particle Diameter, mm | Percent Passing by Weight |
|--------------|------------------------------|----------------------------------|
| 3/8 inch | 9.50 | 100 |
| No. 4 | 4.75 | 95 to 100 |
| No. 8 | 2.36 | 80 to 100 |
| No. 16 | 1.18 | 50 to 85 |
| No. 30 | 0.6 | 25 to 60 |
| No. 50 | 0.3 | 5 to 30 |
| No. 100 | 0.15 | 0 to 10; prefer < 4 |
| No. 200 | 0.075 | 0 - 3; prefer 0 |

WAC 246-272B-06750 Intermittent Sand Filters

- (1) Intermittent sand filters may be used to meet Treatment Level B.
- (2) Pressure distribution to the filter media is required.
- (3) The minimum dosing frequency is:
 - (a) Twelve equally spaced timed doses per day for coarse sand; or
 - (b) Six equally spaced timed doses per day for ASTM C-33 sand.
- (4) The maximum hydraulic loading rate for the sand filter is one gallon per day per square foot.
- (5) The minimum depth of sand media is twenty-four inches.
- (6) The influent wastewater quality distributed to the filter media must meet or exceed effluent characteristics from a properly sized septic tank treating residential strength sewage.
- (7) The minimum horizontal setback from the sand filter must meet the sewage tank requirements in Table 3 in WAC 246-272B-06050.
- (8) The maximum depth of cover material over the distribution technology is twelve inches.
- (9) The design engineer shall meet the sand specification requirements in WAC 246-272B-06700(4).
- (10) The filter bed must be contained in:

- (a) A flexible membrane-lined pit where the membrane has a minimum thickness of thirty mm and there is a three-inch layer of sand beneath the membrane; or
 - (b) A concrete vessel that is water tight, durable, and structurally sound.
- (11) The underdrain must be designed with sufficient void storage volume for a single dose to the filter and maintain unsaturated filter material above the underdrain component.
- (12) Filtrate may be collected and discharged from the bottom of the filter by either gravity flow or a pumpwell system.
- (13) When filtrate is discharged by gravity, a boot and exit pipe must exit the side of the liner and be installed:
- (a) By the manufacturer or the manufacturer's representative;
 - (b) So the boot outlet is bedded in sand;
 - (c) With the boot properly secured to the outlet pipe, such as with stainless steel bands, screws, and sealant strips, or as recommended by the manufacturer; and
 - (d) Watertight. If the boot will be submerged in a seasonal high water table, the installer shall test and verify it is watertight.
- (14) Monitoring ports for intermittent sand filters must meet the requirements in WAC 246-272B-06400 (3)(b).
- (15) Two monitoring ports must be installed every one thousand square feet in the sand filter and distributed uniformly throughout the filter area.
- (a) One monitoring port must be installed to the top of the filter media; and
 - (b) One monitoring port must be installed to the bottom of the underdrain.

WAC 246-272B-06800 Recirculating Gravel Filters

- (1) A recirculating gravel filter may be used to meet Treatment Level C.
- (2) Pressure distribution of the effluent to the filter media is required.
- (3) Filter media must meet the following specifications:
 - (a) Effective particle size between three mm and five mm; and
 - (b) Uniformity coefficient less than or equal to two.
- (4) Filter media depth must be at least thirty-six inches.
- (5) The recirculating pump must be controlled by a timer.

- (6) The dosing schedule must provide for at least forty-eight doses per day, equally spaced throughout the day.
- (7) Doses must be uniform in volume.
- (8) The influent or filtrate mixture must cycle through the filter five times before dispersal.
- (9) The maximum hydraulic loading rate for the gravel filter is five gallons per day per square foot, if influent BOD5 is no greater than 230 mg/L.
- (10) The hydraulic loading rate must be calculated on the basis of the incoming BOD as follows:

$$\text{Loading Rate (expressed as gpd/ft}^2\text{)} = \frac{1150}{\text{BOD}_5 \text{ of septic tank effluent}}$$

- (11) The maximum influent values are:
 - (a) BOD5 - 575 mg/L; and
 - (b) O&G - 30 mg/L.
- (12) The minimum horizontal setback from the recirculating gravel filter must meet the sewage tank requirements in Table 3 in WAC 246-272B-06050.
- (13) The filter bed must be contained in:
 - (a) A flexible membrane-lined pit where the membrane has a minimum thickness of thirty mm and there is a three-inch layer of sand beneath the membrane; or
 - (b) A concrete vessel that is water tight, durable, and structurally sound.
- (14) Monitoring ports for recirculating gravel filters must meet the requirements in WAC 246-272B-06400 (3)(b).
- (15) Two monitoring ports must be installed every one thousand square feet in the recirculating gravel filter and distributed uniformly throughout the filter area.
 - (a) One monitoring port must be installed to the top of the media interface; and
 - (b) One monitoring port must be installed to the bottom of the underdrain.
- (16) The minimum volume of a recirculating mixing tank is:
 - (a) One hundred fifty percent of the daily design flow for residential applications; or
 - (b) One hundred percent of the daily design flow for nonresidential applications.

- (17) Underdrain and filtrate handling must be designed as required in WAC 246-272B-06750 (11), (12), and (13).
- (18) The return flow from the recirculating gravel filter must be split to direct:
 - (a) A minimum of eighty percent of the effluent back to the recirculating or mixing tank; and
 - (b) The remainder to the drainfield or next downstream LOSS component.

WAC 246-272B-06850 Cesspools and Seepage Pits

The department shall not approve a LOSS design that includes a cesspool, a drywell, or a seepage pit.

WAC 246-272B-06900 Holding Tank Sewage Systems

- (1) An owner shall not install or use a holding tank sewage system for any new residential development or expansion of residential development, except as set forth in this section.
- (2) The department may approve installation of holding tank sewage systems only for:
 - (a) Permanent uses limited to controlled, part-time, commercial usage, such as recreational vehicle parks and trailer dump stations;
 - (b) Short term use in case of an emergency situation as allowed in WAC 246-272B-07450(4); or
 - (c) Repairs as allowed in WAC 246-272B-07400(11).
- (3) An owner proposing to use a holding tank sewage system shall:
 - (a) Hire a design engineer who follows good engineering practice and prepares a design consistent with the department's recommended standards and guidance on holding tank sewage systems;
 - (b) Submit and receive department approval of an O&M manual that meets the requirements of WAC 246-272B-04200; and
 - (c) Use a holding tank registered by the department according to chapter 246-272C, On-site sewage system tanks, and tested for water tightness under WAC 246-272B-05200.

PART 7: LOSS OPERATIONS REQUIREMENTS

Subpart A - Routine Operations

WAC 246-272B-07000 Management Requirements

- (1) A single owner development must be managed by a public entity, a wastewater company regulated by the Washington utilities and transportation commission, or a private management entity.
- (2) A development where lots or units served by the LOSS are individually owned must be managed by:
 - (a) A public entity; or
 - (b) A private management entity with a public entity or a wastewater company regulated by the Washington utilities and transportation commission contracted as a third-party guarantor.

WAC 246-272B-07050 Operations and Maintenance Requirements

- (1) The owner shall operate and maintain the LOSS according to:
 - (a) The requirements in this chapter;
 - (b) The current operating permit issued by the department, including all conditions and requirements of the operating permit; and
 - (c) LOSS operating procedures such as those described in department guidance, texts, handbooks, and manuals.
- (2) The owner shall maintain financial resources sufficient for O&M of the LOSS including, but not limited to:
 - (a) Creating and continuously funding operating and reserve accounts;
 - (b) Setting and adjusting fees and rates for connections, monthly service charges, charges for routine and emergency repairs; and
 - (c) Establishing a process to collect on delinquent accounts or disconnect customers.
- (3) The owner shall respond to customer concerns and service complaints in a timely manner.
- (4) The owner shall not install or maintain a bypass to divert sewage or partially treated sewage around any feature of the treatment process, unless approved in writing by the department.

- (5) The owner shall not allow substances listed in WAC 246-272B-06000 to enter into the LOSS collection system or any other LOSS component.
- (6) The owner shall conduct reliable and representative monitoring following operating permit conditions and requirements, and provide results to the department.
- (7) As required in the operating permit, samples must be analyzed by an accredited laboratory, according to chapter 173-50 WAC, Accreditation of environmental laboratories.
- (8) O&M data must be available to the department and a third-party guarantor, if any.
- (9) The owner shall use reasonable security measures to protect the LOSS treatment processes and components, including the soil profile, from possible damage or harm by unauthorized persons, vehicles, animals, vegetation, or other sources.

WAC 246-272B-07100 Department Inspections

- (1) The department may enter and inspect any LOSS site or LOSS facility to determine compliance with chapter 70.118B RCW, Large on-site sewage disposal systems or this chapter:
 - (a) On any weekday that is not a legal holiday between the hours of 8:00 a.m. and 5:00 p.m.; and
 - (b) At any time with the consent of the owner or owner's agent.
- (2) The department may inspect:
 - (a) All records, including records of O&M;
 - (b) All data submitted;
 - (c) All permits; and
 - (d) The LOSS, all LOSS components, and all LOSS performance equipment.
- (3) During an inspection, the department shall have free and unimpeded access to all:
 - (a) Buildings, warehouses, storage facilities, and other places reasonably considered to be or to have been part of the LOSS;
 - (b) Ledgers, books, accounts, memorandums, or records required to be compiled or maintained in this chapter; and
 - (c) Products, components, maintenance supplies, or other material used in connection with the LOSS.
- (4) During the inspection, the department may take such samples as may be reasonably necessary to verify compliance.

- (5) The owner shall take preventative or corrective action as directed by the department when results of an inspection indicate conditions which may harm or are harming LOSS operation or which are in violation of any requirements of this chapter.

WAC 246-272B-07150 Reliability and Emergency Response

- (1) All LOSS must provide adequate treatment in quantity and quality to sewage in a reliable manner at all times.
- (2) The owner shall create and implement operating procedures for normal operating conditions.
- (3) The owner shall create and implement operating procedures for abnormal operating conditions, such as those associated with floods, unscheduled power outages, facility failures, and LOSS maintenance, including procedures to notify the department.
- (4) The owner shall document procedures for LOSS operation during normal and abnormal operating conditions in the O&M manual as required in WAC 246-272B-04200.
- (5) The department may require the owner to prepare an engineering report according to WAC 246-272B-04000 that evaluates any problem with normal or abnormal operations, recommends and designs solutions to correct the problem. The department may require corrective actions to be implemented.

WAC 246-272B-07200 Operator Qualifications and Responsibilities

- (1) Owners of LOSS using mechanical treatment or lagoons with design flow greater than 14,500 gpd shall employ one or more operators certified according to chapter 173-230 WAC, Certification of operators of wastewater treatment plants.
- (2) Owners of LOSS with design flow greater than 14,500 gpd not using mechanical treatment or lagoons shall employ one or more operators approved by a local health jurisdiction in Washington state.
- (3) The operator of a LOSS using proprietary treatment shall be qualified to monitor and maintain that LOSS. Examples of a qualified operator include someone who:
 - (a) Has experience successfully operating a LOSS with similar technology;
 - (b) Is an employee or authorized agent of the treatment component manufacturer;
 - (c) Is trained, authorized in writing by, and in good standing with the manufacturer of the proprietary treatment;
 - (d) Has education or certification in operating similar technology; or
 - (e) Has other qualifications acceptable to the department.

- (4) Owners of LOSS with design flows of 14,500 gpd or less shall employ one or more operators approved by a local health jurisdiction in Washington state.
- (5) If an operator described in WAC 246-272B-07200 (2) or (4) is unavailable, the owner of a LOSS shall propose and the department may accept a person with OSS or LOSS experience.
- (6) The operator shall prepare and sign monitoring reports, certifying that the results are correct and the report is complete, whether results are from process gauges or from an accredited laboratory.

WAC 246-272B-07250 Metering

- (1) The LOSS owner shall install and maintain one or more flow monitoring devices to measure flow.
- (2) The LOSS owner or operator shall record and report flow data in gpd as directed in the operating permit.

WAC 246-272B-07300 Sewage Tank Management

- (1) The owner, management entity, or operator shall create and follow a routine schedule as required in WAC 246-272B-04200(5) for:
 - (a) Sewage tank inspection for septage, grease, and scum; and
 - (b) Sewage tank pumping.
- (2) When removing septage, grease, scum, or sewage from a LOSS, the owner shall: Employ only persons approved by the local health jurisdiction to pump and transport septage, grease, scum, or sewage and that:
 - (a) Transport septage, grease, scum, or sewage only in vehicles clearly identified with the name of the business;
 - (b) Record and report septage removal to the owner as required by the approved O&M manual and the LOSS operating permit; and
 - (c) Dispose of septage, grease, scum, or sewage, or apply septage biosolids to land consistent with local health jurisdiction regulations and chapter 173-308 WAC, Biosolids management.

Subpart B - LOSS Changes

WAC 246-272B-07400 Modifications

- (1) When an owner modifies a LOSS, the component or components being modified must meet the requirements of this chapter.
- (2) If the LOSS cannot meet the requirements of subsection (1) of this section, the department may consider repair or replacement of a LOSS component that is located and designed to meet new construction and treatment standards to the maximum extent allowed by the site and:
 - (a) Protects drinking water sources and distribution systems, and shellfish growing areas;
 - (b) Minimizes nitrogen discharge in areas where nitrogen is identified as a contaminant of concern;
 - (c) Prevents the direct discharge of sewage or partially treated sewage to groundwater, surface water, or upon the surface of the ground;
 - (d) Meets the horizontal setbacks described in WAC 246-272B-06050 to public drinking water sources and distribution pipes;
 - (e) Maximizes vertical separation, and distance to any well, spring, suction line and surface water; and
 - (f) Meets other requirements, as directed by the department to protect public health and the environment.
- (3) Component modifications that require department approval must follow the procedures outlined in WAC 246-272B-02550. Examples of modifications requiring department approval include drainfield repair or replacement; repairs or replacement that also include improvements expanding the LOSS capacity or service area; and treatment process changes.
- (4) Routine LOSS repair and equipment replacement activities that do not affect capacity or treatment performance do not require department review. Examples include pump replacement or repair, with equivalent size; minor collection pipe repair or replacement; and replacement of most valves and switches.
- (5) In any submittal documents, the design engineer shall identify all the contributing factors of the failure or need for repair or replacement and design the repair or replacement to mitigate those identified possible causes or contributing factors.
- (6) Drainfield reserve area is not required for repairs.
- (7) All LOSS component repairs or replacements, including those to drainfields, must be located on:

- (a) The property served; or
 - (b) A repair or replacement site where the distance between the property served and the repair or replacement site has been approved by the department based on site conditions and risk to public health and the environment.
- (8) If needed, the owner shall obtain easements and right of way franchises, record them on the property title, and submit copies of the recorded documents to the department.
- (9) A drainfield that cannot be repaired or replaced constitutes a failure of the LOSS and the owner shall comply with WAC 246-272B-07450.
- (10) If a repair or replacement is not possible or feasible, the LOSS owner shall consult the department.

WAC 246-272B-07450 Failures

- (1) LOSS or LOSS component failures include, but are not limited to:
- (a) Sewage or partially treated sewage on the ground;
 - (b) Sewage backing up into a connected residence or structure caused by slow soil absorption of the treated effluent or other failure;
 - (c) Sewage or partially treated sewage leaking from a septic tank, pump chamber, holding system or collection system;
 - (d) Cesspools or seepage pits where evidence of groundwater or surface water quality degradation exists;
 - (e) Plant growth above the drainfield that indicates the effluent is not filtering down through the soil profile;
 - (f) Inadequately treated effluent contaminating groundwater or surface water; or
 - (g) Noncompliance with standards stipulated in the operating permit.
- (2) The owner shall address and correct all failures immediately. LOSS component failures that can be corrected by repair or replacement must follow the requirements in WAC 246-272B-07400.
- (3) The owner of a LOSS that has a failure shall report the condition to the department by telephone or by e-mail within one business day of discovery.
- (4) The department may require:
- (a) Modifications, reduction in capacity, changes in operations, additional monitoring, temporary use of a holding tank, or other emergency measures in order to reduce or eliminate the risk to public health and actual or potential environmental contamination;

- (b) Residences, structures, lots, and units that are connected to the failing LOSS to connect to another LOSS with sufficient approved capacity or to a sanitary sewer system, if available;
 - (c) The LOSS owner to apply for a National Pollutant Discharge Elimination System permit or a state waste discharge permit from the department of ecology, if effluent will be discharged to the land surface or into surface water; or
 - (d) The LOSS to be shut down and abandoned, according to WAC 246-272B-07500.
- (5) When the owner is directed by the department to discontinue operation of a LOSS or to cease serving some or all dwellings, structures, lots, or units, the owner shall give department-approved written notice to all affected customers and property owners within ten business days, return receipt requested.
- (6) The department may direct the owner to discontinue use of the LOSS or any portion of the LOSS due to a system or component failure.

WAC 246-272B-07500 Abandonment

The LOSS owner who is permanently abandoning any portion of a LOSS, including a septic tank, seepage pit, cesspool, or other sewage container, and all accessible parts of the drainfield that may become a hazard, including distribution boxes and pump chambers, shall provide:

- (1) Written notice of the abandonment to the department and local health jurisdiction of the county where the LOSS is located a minimum of one year in advance;
- (2) Department-approved, return receipt requested written notice of the abandonment to all affected customers and property owners whose connected dwellings, structures, lots, or units will no longer have sewage service a minimum of one year in advance;
- (3) Hire an approved pumper to remove all partially treated sewage;
- (4) Remove all mechanical and electrical equipment;
- (5) Remove or destroy all lids;
- (6) Fill any voids with soil or gravel; and
- (7) Meet any other local or state requirements.

WAC 246-272B-07550 Connection to a Sanitary Sewer System

- (1) The department may require the LOSS owner to connect some or all residences, structures, lots and units to a sanitary sewer system consistent with WAC 246-272B-07450 (4)(b).
- (2) If the local health officer or local regulations require connection to a sanitary sewer system, the owner shall abandon the LOSS according to WAC 246-272B-07500.

- (3) The department shall not approve a new LOSS if sanitary sewer service is available within two hundred feet of the property line, or other distance specified in local regulation, and:
 - (a) The local board of health or county has passed a local regulation requiring connection to a sanitary sewer system to protect public health; or
 - (b) Connection to a sanitary sewer system is required by the local comprehensive land use plan or local development regulations.

PART 8: WAIVERS, ENFORCEMENT, AND APPEALS

WAC 246-272B-08000 Waivers

- (1) The LOSS project applicant or LOSS owner may request a waiver from specific requirements of this chapter. The request must:
 - (a) Be in writing;
 - (b) Identify the requirement requested to be waived;
 - (c) State the reason for the waiver; and
 - (d) Provide supporting information.
- (2) The department may grant a waiver request if it:
 - (a) Is consistent with the applicable standards and the intent of this chapter; and
 - (b) Provides a comparable level of public health and environmental protection to the requirement being waived.
- (3) If the department approves a waiver request, the department shall notify the requestor of the decision in writing.
- (4) If the department denies a waiver request, the department shall notify the requestor of the decision in writing stating the reasons for the denial.

WAC 246-272B-08100 Enforcement

- (1) The department shall enforce this chapter and chapter 70.118B RCW, Large on-site sewage disposal systems.
- (2) When any person is out of compliance with a law or rule regulating LOSS and administered by the department, the department may take appropriate enforcement actions, regardless of any prior approvals issued.

- (3) The department may initiate enforcement action against the owner to bring the system into compliance by using one or more of the following options, which include, but are not limited to:
 - (a) A conference between the department and the owner to explore facts and resolve problems;
 - (b) A compliance agreement between the department and the owner;
 - (c) A notice of correction;
 - (d) A notice of violation;
 - (e) A state departmental order;
 - (f) Civil penalties;
 - (g) Operating permit conditions or approval conditions;
 - (h) Injunctions; and
 - (i) Other authorized proceedings.
- (4) The department may issue an emergency stop work order or department order to refrain from using any LOSS or portion of the LOSS or improvements to the LOSS until all permits, certifications, approvals, and determinations to proceed required by rule or statute are obtained.
- (5) The department may issue an order to stop work on LOSS construction activities that occur or are scheduled to occur prior to receiving department approval, determination to proceed, or a department operating permit.
- (6) The department may impose civil penalties pursuant to RCW 70.118B.050 in an amount of up to ten thousand dollars per day per violation.
- (7) The department may deny an application for an operating permit, approval, or determination to proceed, or revoke, suspend or modify a permit, approval, or determination to proceed if:
 - (a) The permit was obtained by fraud;
 - (b) An owner violates or fails to comply with any term or condition of the permit;
 - (c) A LOSS failure or the need for a repair or replacement of a LOSS component has resulted from neglect or poor management practices;
 - (d) A person fails, refuses, or is unable to comply with chapter 70.118B RCW, Large on-site sewage disposal systems or this chapter;

- (e) There is a change in any condition that requires the LOSS to temporarily or permanently limit or stop operating; or
 - (f) It is necessary to comply with applicable water quality provisions in chapter 90.48 RCW, Water Pollution Control Act.
- (8) The department may enjoin a violation or threatened violation of this chapter or chapter 70.118B RCW, Large on-site sewage disposal systems, in the superior court in the county in which the system is located or in Thurston County.

WAC 246-272B-08200 Notice of Decision, Appeals, and Adjudicative Proceedings

- (1) The department's notice of a denial, suspension, modification, or revocation of a permit; approval; or determination to proceed must be consistent with RCW 43.70.115. An applicant or permit holder has the right to an adjudicative proceeding to contest the decision.
- (2) The department's notice of imposition of a civil penalty must be consistent with RCW 43.70.095 and 70.118B.050. A person upon whom the department imposes a civil penalty has the right to an adjudicative proceeding.
- (3) A person upon whom the department imposes a civil penalty or issues a notice of denial, suspension, modification or revocation of a permit; approval; or determination to proceed may contest a department decision within twenty-eight days of receipt of the decision by filing a written application for an adjudicative proceeding by a method showing proof of receipt with the Administrative Hearings Unit, Department of Health. The person must include the following in or with the application:
 - (a) A specific statement of the issue or issues and law involved;
 - (b) The grounds for contesting the department decision; and
 - (c) A copy of the contested department decision.
- (4) An adjudicative proceeding is governed by the Administrative Procedure Act (chapter 34.05 RCW), this chapter, and chapter 246-10 WAC, Administrative procedure-- Adjudicative proceedings.

WAC 246-272B-08300 Third-Party Appeals to Department Permit Decisions for LOSS Over 14,500 gpd and Adjudicative Proceedings

- (1) A person aggrieved by the issuance of an initial permit, or by the issuance of a subsequent permit to increase the volume of waste disposal or to change effluent characteristics, for systems with design flows of more than 14,500 gpd, has the right to an adjudicative proceeding.
- (2) The application for an adjudicative proceeding must be in writing and must state the basis for contesting the action, include a copy of the decision and be served on and received by

the department within twenty-eight days of receipt of notice of final decision and be served in a manner that shows proof of receipt.

- (3) An adjudicative proceeding conducted under this section is governed by chapter 34.05 RCW, Administrative Procedure Act.

PART 9: SEVERABILITY

WAC 246-272B-09000 Severability

If any provision of this chapter or its application to any person or circumstances is held invalid, the remainder of this chapter, or the application of the provision to other persons or circumstances is not affected.