WAC 173-350-330 Surface impoundments and tanks. (1) **Surface impoundments and tanks - Applicability.**

(a) These standards apply to:

(i) Surface impoundments used to store or treat leachate, liquids, or semisolid wastes associated with solid waste facilities permitted under this chapter including, but not limited to, limited purpose landfills, recycling facilities, transfer stations, and piles used for storage or treatment, or with landfills permitted under chapter 173-351 WAC, Criteria for municipal solid waste landfills;

(ii) Tanks with a capacity greater than one thousand gallons used to store or treat leachate, liquids, or semisolid wastes associated with solid waste facilities permitted under this chapter including, but not limited to, limited purpose landfills, recycling facilities, transfer stations, and piles used for storage or treatment, or with landfills permitted under chapter 173-351 WAC, Criteria for municipal solid waste landfills; and

(iii) Piping systems within the boundaries of solid waste facilities that convey solid waste to or from surface impoundments and tanks as described in (a)(i) or (ii) of this subsection.

(b) These standards do not apply to:

(i) Surface impoundments, tanks, or piping systems that are elements of:

(A) Wastewater treatment systems permitted under local, state or federal water pollution control permits, including stormwater permits, when those permits specify requirements equivalent to those of this section for surface impoundments, tanks and piping systems associated with the permitted system; and

(B) Leachate management features at compost facilities regulated under WAC 173-350-220, except that tanks used to store leachate must meet design standards in subsection (4)(b) of this section.

(ii) Septic tanks regulated under chapter 246-272A WAC, On-site sewage systems, that receive only domestic sewage generated at the solid waste facility;

(iii) Wastewater features that convey only domestic sewage generated at the solid waste facility to a domestic wastewater facility;

(iv) Agricultural waste operations conducted in accordance with a farm management plan written in conjunction with the local conservation district;

(v) Underground storage tanks subject to chapter 173-360 WAC, Underground storage tanks;

(vi) Tanks used to store moderate risk waste subject to WAC 173-350-360; and

(vii) Tanks with a capacity of five thousand gallons or less meeting the conditions for exemption under Table 220-A(1), Table 225-A(1), or Table 250-A(1).

(c) Specific elements of these standards apply to or are referenced as criteria for other activities that are primarily regulated under other sections of this chapter, or by other regulations. Those other activities include, but are not limited to:

(i) Beneficial use permit exemptions under WAC 173-350-200(3);

(ii) Composting facility design standards under WAC 173-350-220(4);

(iii) Land application operating criteria under WAC 173-350-230(6);

(iv) Anaerobic digester design standards under WAC 173-350-250(4); and

(v) Standards for facilities storing biosolids or sewage sludge under WAC 173-308-280.

(2) **Surface impoundments and tanks – Permit exemptions.** There are no exemptions for surface impoundments and tanks.

(3) **Surface impoundments and tanks – Permit requirement - Location.**

(a) Surface impoundments and tanks must not be located in unstable areas unless the owner or operator demonstrates that engineering measures have been incorporated in the facility's design to ensure that the integrity of the liners, monitoring system and structural components will not be disrupted. The owner or operator must place the demonstration in the application for a permit.

(b) No surface impoundment or tank regulated under this section may be located closer than one hundred feet to an existing drinking water supply well.

(4) **Surface impoundments and tanks – Permit requirement - Design.** Surface impoundments and tanks must be designed so that the facility can be operated to meet the performance standards of WAC 173-350-040, and the following design standards:

(a) All surface impoundments regulated under this section must be designed and constructed to meet the following requirements:

(i) Have a liner consisting of a minimum 30-mil thickness geomembrane overlying a structurally stable foundation to support the liners and the contents of the impoundment. (HDPE geomembranes used as primary liners or leak detection liners must be at least 60-mil thick to allow for proper welding.) The jurisdictional health department may approve the use of alternative designs if the owner or operator can demonstrate during the permitting process that the proposed design will prevent migration of solid waste constituents or leachate into the ground or surface waters at least as effectively as the liners described in this subsection.

(ii) Have a groundwater monitoring system that complies with the requirements of WAC 173-350-500 or a leak detection layer. If a leak detection layer is used, it must consist of an appropriate drainage layer underlain by a geomembrane of at least 30-mil thickness.

(iii) Have embankments and slopes designed to maintain structural integrity under conditions of a leaking liner and capable of withstanding erosion from wave action, overfilling, or precipitation.

(iv) Have a minimum of eighteen inches of freeboard above the design operating capacity to provide protection against wave action, overfilling, or precipitation. Impoundment operating capacity volume calculations must be based on the facility design, monthly water balance, and normal climatic precipitation and evaporation data for the location of the facility. During the permitting process the jurisdictional health department may reduce the freeboard requirement provided that other specified engineering controls are in place which prevent overtopping.

(v) Identify a leakage rate for the primary containment system that will trigger corrective action.

(vi) When a surface impoundment is constructed with a single geomembrane liner, the owner or operator must test the liner using an electrical leak location evaluation capable of detecting a hole three millimeters in its longest dimension or other equivalent postconstruction test method prior to being placed in service. Results of the test must be submitted with the construction record drawings; and

(vii) All surface impoundment liners must be designed so that the bottom of the lowest liner component is a minimum of five feet above

the seasonal high level of groundwater, unless the owner or operator can demonstrate during the permitting process that the proposed liner design will not be affected by contact with groundwater. For the purpose of this section, groundwater includes any water-bearing unit that is horizontally and vertically extensive, hydraulically recharged, and volumetrically significant.

(b) Tanks must be designed and constructed to meet the following requirements:

(i) Tanks and ancillary equipment must be tested for leaks or tightness using a method acceptable to the jurisdictional health department prior to being covered, enclosed or placed in use. If a tank is found to leak or not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed and verified to the satisfaction of the jurisdictional health department prior to the tank being covered or placed in use;

(ii) Tanks that are constructed or installed to be wholly or partially below ground must:

(A) Be designed to resist buoyant forces in areas of high groundwater;

(B) Be equipped with a leak detection system capable of detecting a release from the tank; and

(C) Have a leakage rate identified for the primary containment system. Leakage above this rate will trigger corrective action.

(iii) For tanks or components in which the external shell of a metal tank or any metal component will be in contact with the soil or water, a determination must be made by a corrosion expert of the type and degree of external corrosion protection that is needed to ensure the integrity of the tank during its operating life. This determination must be included with design information submitted with the permit application;

(iv) Above ground tanks must be equipped with secondary containment. This may be accomplished by use of a double-walled tank with leak detection, or construction of a separate containment structure using materials compatible with the waste being stored and capable of containing the volume of the largest tank within its boundary plus the precipitation from a twenty-five-year storm if the containment structure is exposed to precipitation;

(v) Areas used to load or unload tanks must be designed to contain spills, drips and accidental releases during loading and unloading of vessels;

(vi) Tanks and piping must be protected from impact by vehicles or equipment through use of curbing, grade separation, bollards or other appropriate means;

(vii) Tanks must be structurally suited for the proposed use; and

(viii) Tanks, valves, fittings and ancillary piping must be protected from failure caused by freezing.

(c) All facilities which include surface impoundments or tanks regulated under this section must provide controls to limit public access and prevent unauthorized vehicular traffic and illegal dumping of wastes. This must be accomplished by use of artificial barriers, natural barriers, or both, as appropriate to protect human health and the environment. A lockable gate is required at each entry to the facility.

(5) **Surface impoundments and tanks – Permit requirements – Documentation.**

(a) The owner or operator must submit construction documents for, at a minimum, any proposed addition or modification of elements de-

scribed in subsection (4) of this section to the jurisdictional health department for review and approval. The construction documents for proposed construction of engineered features must be prepared by a professional engineer registered in the state of Washington, and must include:

(i) An engineering report that presents the design basis and calculations for the engineered features of the surface impoundment and tank systems, stormwater management features, and emission control features as required by the permitting air authority where applicable. The engineering report must demonstrate that the proposed design will meet the performance standards of this chapter;

(ii) Scale drawings of the facility including the location and size of waste handling areas, fixed equipment, buildings, stormwater management features where applicable, access roads, traffic patterns, and other constructed areas and buildings integral to facility operation;

(iii) Design specifications for the engineered features of the facility including any surface impoundment and tank systems, run-on/runoff controls, stormwater management features, and aeration and emission management features as required by a permitting air authority where applicable; and

(iv) A construction quality assurance plan that describes monitoring, testing, and documentation procedures that will be performed during construction of the facility to ensure that facility is constructed in accordance with the approved design.

(b) The owner or operator must provide copies of the construction record drawings for engineered features at the facility and a report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan, to the jurisdictional health department and the department. The owner or operator must not commence operation in a newly constructed portion of the facility until the jurisdictional health department has determined that the construction was completed in accordance with the approved engineering report/plans and specifications and has approved the construction documentation in writing.

(6) **Surface impoundments and tanks – Permit requirements - Operating.** The owner or operator of a surface impoundment or tank must:

(a) Operate the facility in compliance with the performance standards of WAC 173-350-040 and this subsection. In addition, the owner or operator must develop, keep, and follow a plan of operation approved as part of the permitting process. The plan must describe the facility's operation and convey to site operating personnel the concept of operation intended by the designer. The plan of operation must be available for inspection at the request of the jurisdictional health department. If necessary, the plan may be modified with the approval, or at the direction, of the jurisdictional health department. Each plan of operation must include the following:

(i) A description of the types of solid waste to be handled at the facility;

(ii) A description of the procedures used to ensure that dangerous waste and other unacceptable waste are not accepted at the facility;

(iii) A description of how wastes are handled on-site during the facility's active life, including:

(A) The equipment and procedures that will be used to prevent overfilling of surface impoundments or tanks;

(B) The equipment and procedures that will be used to maintain a minimum of eighteen inches of freeboard in surface impoundments; and

(C) The equipment and procedures that will be used to control access to the site.

(iv) A description of how the owner or operator will ensure the facility is operated in a way to:

(A) Control litter, dust, and nuisance odors; and

(B) Control rodents, insects, and other vectors.

(v) A description of how operators will inspect and maintain the facility to prevent malfunctions, deterioration, operator errors and discharges that may cause or lead to the release of wastes to the environment that could pose a threat to human health, including the inspection form operators will use. Inspections must be conducted as needed, but at least weekly, to ensure that facility is meeting the operational standards unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process. Facility inspection reports must be maintained in the operating record. The elements addressed in this description must include:

(A) The groundwater monitoring system, if required;

(B) The overfilling prevention equipment, including details of filling and emptying techniques;

(C) The liners and embankments, tank piping, and secondary containment;

(D) Procedures for cleaning containment structures, including removal of sediment, vegetation, and debris; and

(E) Procedures for testing surface impoundment liners, tanks, and piping systems for leaks.

(vi) A description of how the operators will maintain operating records on the amounts (weight or volume) and types of waste received and removed from the facility, including the form or computer printout used to record this information. Facility annual reports must be maintained in the operating record. Facility inspection reports must be maintained in the operating record, including at least the date of inspection, the name and signature of the inspector, a notation of observations made, and the date and nature of any needed repairs or remedial action. Significant deviations from the plan of operation shall be noted in the operating record. Records must be kept for a minimum of five years and shall be available upon request by the jurisdictional health department;

(vii) A description of safety planning and emergency activities, including:

(A) How on-site fire protection will be provided, as determined by the local and state fire control jurisdiction;

(B) How communications sufficient to handle emergencies will be provided between employees working at the facility and management offices, on-site and off-site;

(C) Response procedures in the event of fire, a description of fire protection equipment available on-site and actions to take if there is a fire or explosion; and

(D) Response procedures in the event leaks are detected, or other releases occur.

(viii) Acknowledgment that the owner or operator will inspect surface impoundments, tanks and associated piping, pumps and hoses as needed, but at least weekly, to ensure they are operating as designed and meeting the operational standards, unless an alternate schedule is approved by the jurisdictional health department as part of the permitting process;

(ix) Acknowledgment that the owner or operator will inspect surface impoundment liners for leaks no less frequently than every five years. The frequency and methods of inspection must be specified in the plan of operation and must be based on the type of liner, expected service life of the material, and the site-specific service conditions. The jurisdictional health department must be given sufficient notice and have the opportunity to be present during liner inspections;

(x) Acknowledgment that the owner or operator will conduct leak or tightness testing no less frequently than every two years on all below ground tanks and other tanks and piping that have not been equipped with a leak detection system capable of detecting a release from the tank or piping and where any portions of the tank or piping cannot be inspected visually. The jurisdictional health department must be given sufficient notice and have the opportunity to be present during leak or tightness testing events; and

(xi) Other details to demonstrate that the facility will be operated in accordance with this subsection and as required by the jurisdictional health department.

(b) Prepare and submit an annual report to the jurisdictional health department and the department by April 1st. The annual report must detail the facility's activities during the previous calendar year and must include the following information:

(i) Name and address of the facility;

(ii) Calendar year covered by the report;

(iii) Results of groundwater monitoring in accordance with WAC 173-350-500, if applicable;

(iv) Results of leak detection system monitoring, if applicable;

(v) Results of liner inspections and piping tightness testing, if applicable; and

(vi) Any additional information required by the jurisdictional health department as a condition of the permit.

(7) **Surface impoundments and tanks – Permit requirements - Groundwater monitoring.**

(a) Surface impoundments not equipped with a leak detection layer are subject to the groundwater monitoring requirements of WAC 173-350-500.

(b) Surface impoundments equipped with a leak detection layer and tanks are not subject to the groundwater monitoring requirements of this chapter; however, surface impoundments must meet the performance standards of WAC 173-350-040.

(8) **Surface impoundments and tanks – Permit requirements - Closure.** The owner or operator of a surface impoundment or tank must develop, keep, and follow a closure plan that includes:

(a) Notification to the jurisdictional health department sixty days in advance of closure;

(b) Removal of all waste material from the surface impoundment or tank to a facility that conforms with the applicable regulations for handling the waste; and

(c) Methods of removing waste material.

(9) **Surface impoundments and tanks – Permit requirements - Financial assurance.** There are no specific financial assurance requirements for surface impoundments or tanks subject to this chapter; however, surface impoundments and tanks must meet the performance standards of WAC 173-350-040.

(10) **Surface impoundments and tanks - Permit application contents.** The owner or operator of a surface impoundment or tank must ob-

tain a solid waste permit from the jurisdictional health department, either as a separate permit or in compliance with subsection (11)(a) of this section. All applications for permits must be submitted in accordance with the procedures established in WAC 173-350-710. In addition to the requirements of WAC 173-350-710 and 173-350-715, each application for a permit involving surface impoundments or tanks must contain:

(a) Engineering reports/plans and specifications that address the standards of subsections (4) and (5) of this section;

(b) A construction quality assurance plan that addresses the requirements of subsection (5) of this section;

(c) A plan of operation meeting the requirements of subsection (6) of this section;

(d) For surface impoundments not equipped with a leak detection layer, hydrogeologic reports and plans that address the requirements of subsection (7) of this section;

(e) A closure plan meeting the requirements of subsection (8) of this section; and

(f) Documentation that all owners of property located within one hundred feet of the surface impoundment or tank have been notified that the proposed facility may impact their ability to construct water wells, in accordance with chapter 173-160 WAC, Minimum standards for construction and maintenance of wells.

(11) **Surface impoundments and tanks - Construction records.** The owner or operator of a surface impoundment or tank shall provide copies of the construction record drawings for engineered facilities at the site and a report documenting facility construction, including the results of observations and testing carried out as part of the construction quality assurance plan, to the jurisdictional health department and the department. Facilities shall not commence operation until the jurisdictional health department has determined that the construction was completed in accordance with the approved engineering report/plans and specifications and has approved the construction documentation in writing.

(12) **Surface impoundments and tanks – Relationship to other permits.**

(a) Permits for other types of solid waste facilities with surface impoundments or tanks to which this section is applicable must address the applicable requirements of this section in addition to requirements for the other types of solid waste handling.

(b) Surface impoundments that have the potential to impound more than ten-acre feet (three million two hundred fifty-nine thousand gallons) of liquid measured from the top of the embankment and would be released by a failure of the containment embankment must also be reviewed and approved by the dam safety section of the department.

[Statutory Authority: Chapter 70.95 RCW, and RCW 70.95.060, 70.95.215, 70.95.218, 70.95.260(6), 70.95.300, 70.95.305, 70.95.310, 70.95.440. WSR 18-17-008 (Order 13-08), § 173-350-330, filed 8/1/18, effective 9/1/18. Statutory Authority: Chapter 70.95 RCW. WSR 03-03-043 (Order 99-24), § 173-350-330, filed 1/10/03, effective 2/10/03.]