**R315. Environmental Quality, Waste Management and Radiation Control, Waste Management.**

**R315-322. Solid Waste Surface Impoundment Requirements.**

**R315-322-1. Applicability.**

Unless otherwise determined by the director, the standards set forth in Rule R315-322 shall apply to any solid waste surface impoundment, whether operated in connection with a solid waste management facility or on a stand-alone basis.

**R315-322-2. Solid Waste Surface Impoundment Location Standards.**

(1) A new solid waste surface impoundment or the expansion of an existing solid waste surface impoundment shall meet the location standards of Subsection R315-302-1(2).

(2) An existing solid waste surface impoundment shall be subject to the following location standards:

(a) the ecologically and scientifically significant natural area standards of Subsection R315-302-1(2)(a)(ii);

(b) the floodplain standards of Subsection R315-302-1(2)(c)(ii); and

(c) the standards listed in Subsection R315-302-1(2) in effect at an existing facility for protecting municipal drinking water, wetlands, and groundwater, before applying for a permit, shall be maintained for the life of the facility unless otherwise determined by the director.

(3) Location Standards Exemptions.

(a) Except for the standards listed in Subsection R315-322-3(3)(b), the director may grant an exemption from any location standard of Subsection R315-302-1(2) for a solid waste surface impoundment, on a site-specific basis if the director determines that the exemption will cause no adverse impacts to human health or the environment. If an exemption is granted, the director may require that the solid waste surface impoundment have a more stringent design, construction, monitoring program, or operational practices to protect human health or the environment.

(b) No exemptions shall be given for the following location standards at a solid waste surface impoundment:

(i) ecologically and scientifically significant natural area standards of Subsection R315-302-1(2)(a)(ii);

(ii) floodplain standards, unless the exemption meets the criteria of Subsection R315-302-1(2)(c)(ii);

(iii) the location standards for wetlands for a new or lateral expansion of an existing facility, unless the exemption meets the criteria of Subsection R315-302-1(2)(d); or

(iv) the location standards for groundwater for a new or lateral expansion of an existing solid waste surface impoundment that accepts hazardous waste from a very small quantity generator as defined in Subsection R315-260-10(c), unless the exemption meets the criteria of Subsection R315-302-1(2)(e)(vi).

**R315-322-3. Solid Waste Surface Impoundment General Requirements.**

(1) Each new solid waste surface impoundment shall meet the following applicable requirements, as determined by the director:

(a) The plan of operation requirements of Subsection R315-302-2(2), except plans to control wind-blown litter and disease vectors as found in Subsections R315-302-2(2)(h) and R315-302-2(2)(k) are not required.

(b) For solid waste surface impoundments that use enhanced evaporation systems, a plan to control overspray, including corrective actions to cleanup waste shall be included in the plan of operation.

(c) The recordkeeping requirements of Subsections R315-302-2(3)(a), R315-302-2(3)(b)(i), R315-302-2(3)(b)(iii), R315-302-2(3)(b)(iv), and R315-302-2(3)(b)(vi).

(d) The reporting requirements of Subsection R315-302-2(4).

(e) The inspection requirements of Subsection R315-302-2(5).

(2) Permit Application.

(a) The director may issue a temporary permit for an existing Class VII solid waste surface impoundment to facilitate the owner's or operator's good faith transition from regulation under Rule R649-9 to regulation under Rule R315-322 according to the requirements of Subsection R315-321-4(8).

(b) The owner or operator of any solid waste surface impoundment shall apply for and get a permit to operate by meeting the applicable requirements of Rule R315-310.

(c) The permit application shall include detailed construction and installation diagrams of the surface impoundment, including details of side slopes, liners, surface impoundment storage capacity, leak detection systems, dikes or levees, wind fences, piping, enhanced evaporation systems with justification, water treatment systems and tanks.

(d) Contingencies for releases shall be included in the plan required by Subsection R315-302-2(2)(f) and shall include procedures for repair of liners as specified in Subsection R315-322-5(12)(d).

(e) The owner or operator of a solid waste surface impoundment that does not accept hazardous waste from a very small quantity generator as defined by Subsection R315-260-10(c), shall submit details of controls and employee training programs used to prevent the acceptance of hazardous waste.

**R315-322-4. Solid Waste Surface Impoundment Standards for Performance.**

(1) Each solid waste surface impoundment shall meet the standards for performance as specified in Section R315-303-2.

(2) The owner or operator of a Class VII solid waste surface impoundment shall plan for and implement appropriate measures to protect waterfowl and other wildlife receptors that may reasonably be expected to come into contact with exploration and production wastes managed in Class VII solid waste surface impoundments.

(3) The solid waste surface impoundment shall be fenced and maintained to deter access by livestock and wildlife and, if determined necessary by the director, equipped with flagging, netting, or other measures, to deter entry by birds and waterfowl.

**R315-322-5. Standards for Design.**

(1) Surface impoundments shall be designed, maintained, and operated to meet the following requirements found in Section R315-322-5.

(2) Surface impoundments shall be designed for 55 acre-feet of water or less, unless otherwise approved by the director.

(3) Surface impoundment levees shall be constructed so that the inside grade of the levee is no steeper than 3:1 and the outside grade no steeper than 2:1.

(a) The top of the levee shall have a 2% cross slope toward the surface impoundment and be of sufficient width to allow for adequate anchoring of liner components and compaction.

(b) Vertical height of the levees may not exceed 25% of the total vertical depth of the surface impoundment.

(4) Unloading structures.

(a) The owner or operator shall submit detailed construction and installation diagrams of each unloading structure and an explanation of methods that control flow and prevent undesired waste from entering the solid waste surface impoundment, including hydrocarbons.

(b) Unloading structures shall be designed, maintained, and operated to adequately process the waste received each day.

(c) Unloading structures shall be designed with a leak detection system unless determined unnecessary by the director.

(5) The design, construction, and operation of any dewatering or other stabilization or treatment technique used in association with a solid waste surface impoundment shall comply with the requirements in Subsection R315-303-3(2)(b).

(6) Solid waste surface impoundments and associated enhanced evaporation systems shall be designed to prevent surface or subsurface discharge of water, and detailed information shall be submitted to demonstrate control features. Enhanced evaporation systems shall be located no closer than 100 feet from a facility's exterior boundary.

(7) Any container or tank storage area used to manage waste containing free liquids shall have secondary containment that:

(a) is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

(b) is sloped or otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation;

(c) has sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination;

(d) is designed and operated to prevent run-on into the containment system unless the system has sufficient excess capacity in addition to that required in Subsection R315-322-5(7)(c) to contain any run-on that might enter the system; and

(e) is operated to remove spilled or leaked waste and accumulated precipitation from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

(8) The owner or operator of a solid waste surface impoundment shall design the facility to control storm water run-on and run-off as specified in Subsections R315-303-3(1)(c) and R315-303-3(1)(d).

(9) The owner or operator of a solid waste surface impoundment shall design the impoundment to meet the applicable requirements of Subsection R315-303-3(8), except that the standards for groundwater protection are found in Subsection R315-322-5(11).

(a) In addition to the signage requirements of Subsection R315-303-3(8)(d), the owner or operator of Class VII solid waste surface impoundment shall erect a sign displaying the facility operator.

(b) In addition to the signage requirements of Subsection R315-303-3(8)(d), the owner or operator of Class VII solid waste surface impoundment located in Duchesne County or Uintah County shall erect a sign displaying the facility operator and the location using the Public Land Survey System.

(10) The owner or operator of a solid waste surface impoundment shall provide design drawings and as built drawings signed and sealed by a professional engineer according to Subsection R315-303-3(7).

(11) Groundwater Protection.

(a) The owner or operator of a solid waste surface impoundment shall comply with the groundwater standard for performance in Subsection R315-303-2(1) and shall be subject to the corrective action requirements of Section R317-6-6.15 as applicable.

(b) The owner or operator of a new solid waste surface impoundment or lateral expansion of an existing solid waste surface impoundment shall either:

(i) meet the groundwater alternative or waiver found in Subsection R315-302-1(2)(e)(vi);

(ii) monitor the groundwater beneath the impoundment as specified in Rule R315-308; or

(iii) install and maintain leak detection equipment and conduct monitoring according to Subsection R315-322-5(13).

(c) The owner or operator of an existing solid waste surface impoundment may not receive hazardous waste from a very small quantity generator unless the requirements of Subsection R315-322-5(11)(a) are met and no groundwater assessment or corrective action measures are required under Section R317-6-6.15.

(d) The owner or operator of an existing solid waste surface impoundment shall maintain existing groundwater monitoring wells or leak detection equipment and associated monitoring programs for the life of the facility, unless otherwise determined by the director.

(e) Groundwater monitoring wells, leak detection equipment, associated monitoring programs, or other groundwater monitoring controls may be required for an existing solid waste surface impoundment as determined by the director.

(12) Synthetic Liners.

(a) Materials used in lining solid waste surface impoundments shall be impervious and resistant to weather, tears and punctures, sunlight, and substances that might be contained in the waste including hydrocarbons, aqueous acids, alkalies, salt, fungi, or other produced water.

(b) If rigid materials are used as a liner, leak proof expansion joints shall be provided, or the material shall be of sufficient thickness and strength to withstand expansion, contraction, and settling movements in the underlying earth, without cracking.

(c) Information regarding the type, thickness, strength, and life span of materials to be used for lining the surface impoundment and the method of installation shall be included in the quality control and quality assurance construction plan required by Subsection R315-310-4(2)(c)(x).

(d) The owner or operator shall submit procedures to the director for repair of the liner, should leakage occur. Repair procedures shall be reviewed and signed by a professional engineer and may include repair procedures prepared by the liner manufacturer. Repair procedures shall include:

(i) methods used to remove liquids and solids as necessary from the surface impoundment;

(ii) management of waste removed;

(iii) location of the leak;

(iv) repair of the leak;

(v) testing of the repair; and

(vi) procedures for resuming operations.

(e) Solid waste surface impoundments following the groundwater monitoring requirements of Subsection R315-322-5(11)(b)(ii) shall either meet the liner design requirements of Subsection R315-303-3(4), or the dual liner design standards of Subsection R315-322-5(12)(f).

(f) Solid waste surface impoundments following the leak detection monitoring requirements of Subsection R315-322-5(11)(b)(iii) shall be designed with two synthetic liners, an upper primary and lower secondary liner, with a leak detection system between them. Synthetic liners shall be installed according to the manufacturer's instructions.

(i) The upper primary liner shall be impervious with a hydraulic conductivity no greater than 1 x 10-7 cm/sec and constructed with a minimum 60-mil HDPE or equivalent liner approved by the director.

(ii) The lower secondary liner shall be impervious and constructed with a minimum 40-mil HDPE or equivalent liner approved by the director.

(iii) The leak detection system between the upper primary and lower secondary liners shall be constructed with a HDPE geonet or equivalent liner to provide separation between the upper primary and lower secondary liners and to enable flow of any leaked fluid through the upper primary liner to the leak detection observation sump.

(13) Leak Detection System.

(a) The point of compliance shall be the space between the upper primary and lower secondary liners. The owner or operator shall submit detailed construction and installation diagrams for the leak detection system to the director.

(b) The leak detection design shall include a drainage and collection system placed between the upper primary and lower secondary liners and sloped to facilitate the earliest possible detection of a leak.

(c) The leak detection design shall include a vertical riser outside the dike allowing direct visual inspection of the sump from the surface. The sump shall be designed:

(i) to be large enough in diameter to allow for visual observation and sampling of any fluid, and extend to the lowest elevation of the lower secondary liner of the solid waste surface impoundment;

(ii) with a removable top for the sump riser that prevents entry of fluids; and

(iii) with leak detection piping capable of withstanding destruction resulting from contact with waste, structural loading from stresses and disturbances from overlying waste and cover materials, equipment operation, expansion or contraction, and facilitate clean-out maintenance.

(d) Leak detection monitoring shall be performed at each riser when liquid waste is present inside of the impoundment, and shall be:

(i) performed with no greater than five days between monitoring surveys, and on each day that waste is received in the impoundment; and

(ii) recorded in the facility operating record.

(e) Upon detecting a leak, the owner or operator of a solid waste surface impoundment shall:

(i) provide verbal notification to the director within 24 hours of detection;

(ii) submit written notification to the director within five days of detection; and

(iii) submit a written schedule for conducting repair within 15 days of detection, including the steps required by the repair plan specified in Subsection R315-322-5(12)(d).

**R315-322-6. Standards for Operation.**

(1) Each surface impoundment shall meet the operation and maintenance standards of Section R315-303-4 except the daily cover requirements of Subsection R315-303-4(4) and recycling container requirements of Subsection R315-303-4(6).

(2) Each solid waste surface impoundment shall be operated with a minimum of three feet of freeboard, unless otherwise determined by the director.

(3) The director may permit an owner or operator of a solid waste surface impoundment to sell, reclaim, recycle, or reuse materials in connection with its operations, as provided in the plan of operation.

(4) Oil Separation.

(a) Class VII solid waste surface impoundments shall be operated to separate oil from the produced water fraction of exploration and production waste, and owners and operators may not discharge the oil into the impoundment.

(b) Hydrocarbon accumulation, other than de minimis quantities, on a Class VII solid waste surface impoundment is prohibited. Any hydrocarbon accumulation shall be removed within 24 hours of the time accumulation began.

(5) Overspray including foam from sprinklers, wind, or enhanced evaporation systems, outside of lined areas shall be prevented.

(a) Operation of enhanced evaporation systems is prohibited when wind speeds at the unit are equal to or greater than 15 mph.

(b) If overspray outside of the lined area occurs, it shall be corrected and cleaned up to soil background levels immediately, or as soon as wind speeds allow.

(c) Sampling and analysis of soils suspected to be contaminated from overspray may be required by the director.

**R315-322-7. Closure and Post-Closure.**

(1) Financial Assurance.

(a) The owner or operator of each solid waste surface impoundment shall establish financial assurance as required by Rule R315-309.

(b) If the owner or operator of a solid waste surface impoundment has financial assurance, in effect and active, that covers the costs of closure and post-closure care of the surface impoundment as required by another federal or state agency that is as stringent as the requirements of Rule R315-309, the director may exempt the solid waste surface impoundment from the financial assurance requirements of Rule R315-309.

(2) Upon closure, the owner or operator of each solid waste surface impoundment shall:

(a) excavate, remove, and dispose of any liners, sludges, stained soils, and other solid wastes associated with the solid waste surface impoundment for disposal in a permitted solid waste management facility and install soil and seed according to Subsection R315-303-3(5)(a)(ii); or

(b) get a permit from the director to dispose of residual nonhazardous solid wastes associated with the solid waste surface impoundment on site, in compliance with Subsection R315-303-3(5) relating to closure requirements; or

(c) a combination of Subsections R315-322-7(2)(a) and R315-322-7(2)(b), as approved by the director; and

(d) make the required recording with the county recorder specified in Subsection R315-302-2(6).

(3) The post-closure care and monitoring shall be for five years or as long as determined necessary by the director, and shall consist of:

(a) the maintenance of any monitoring equipment and sampling and testing schedules as required by the director; and

(b) inspection and maintenance of any cover material, including repair as soon as possible of any erosion channels, and reseeding as required by the director.

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