

***R649-9 Approved by Utah Board of Oil, Gas and Mining on June 26, 2013.  
Effective July 1, 2013.***

**R649. Natural Resources; Oil, Gas and Mining; Oil and Gas.**

**R649-9. Waste Management and Disposal.**

**R649-9-1. Introduction.**

1. Section 40-6-5 UCA authorizes the board to regulate the disposal of produced water and oil-field wastes. It is the intent of the board and division to regulate E and P wastes and facilities for the disposal of these wastes in a manner that protects the environment, limits liability to producers, and minimizes the volume of waste.

2. These rules specify the informational and procedural requirements for waste management and disposal, the permitting of disposal facilities and the cleanup requirements for E and P waste related sites.

3. Design and construction requirements for disposal facilities approved prior to July 1, 2013 shall remain as previously permitted. Design and construction changes to these facilities after July 1, 2013 shall meet the following requirements as determined by the division.

4. These rules are intended for E and P waste disposal facilities excluding Class II injection wells and pits associated with wells.

**R649-9-2. General Waste Management**

1. Wastes addressed by these rules are E and P Wastes that are exempt from the RCRA hazardous waste management requirements.

1.1. Before using a commercial disposal facility the operator may contact the division to verify the status of the facility. The division regularly updates this information on the Division of Oil, Gas and Mining web site.

1.2. Each site and/or facility used for disposal must be permitted and in good standing with the division.

1.3. All approved disposal facilities not located at a well site shall be identified with a suitable sign showing facility name, operator, location and emergency number.

1.4. The disposal facility shall be fenced and maintained to deter access by livestock and wildlife and, if determined necessary by the division, equipped with flagging or netting to deter entry by birds and waterfowl.

2. Reduction of the amount of material generated that must be disposed of is the preferred practice.

2.1. Recycling should be used whenever possible and practical.

2.2. In general, good housekeeping practices shall be used.

2.3. Operators shall catch leaks, drips, contain spills, and cleanup promptly.

2.4. Disposal facilities shall be operated in accordance with an approved application and in a manner that does not cause safety or health hazards.

3. The method of disposal used shall be compatible with the waste that is the subject of disposal.

3.1. Whenever possible, injection of E and P waste into approved Class II wells is the division's preference.

3.2. RCRA exempt waste shall not be mixed with nonexempt waste.

4. Every operator shall submit, to the division, an Annual Waste Management Plan by January 15 of each year to account for the proper disposition of produced water and other E and P Wastes. This plan will include:

4.1. The type and estimated annual volume of wastes that will be or have been generated.

4.2. The facilities to be used for disposal.

4.3. The description of any waste reduction or minimization procedures.

4.4. Any onsite disposal/treatment methods or programs to be implemented by the operator.

4.5. If changes are made to the plan during the year, then the operator shall notify the division in writing, within 30 days, of this change.

### **R649-9-3. Permit and Application Requirements for Disposal Facilities**

1. No waste disposal facility shall operate without a division-issued permit.

2. Applications for new disposal facilities or modifications shall be submitted to the division and shall include the following:

2.1. Previously submitted material may be included by reference provided they are current and readily available to the division.

2.2. Evidence justifying the need for the proposed facility or expansion of an existing facility.

2.3. Names and addresses of all applicants, principal officers and owners with 25 percent or more interest in the facility.

2.4. Materials or products to be applied to the land surface or subsurface shall meet the division's current cleanup levels for contaminated soil and other wastes.

2.5. If leachability and/or toxicity are of concern due to the type or source(s) of wastes, tests will be required and may utilize the Toxicity Characteristic Leaching Procedure (TCLP), Synthetic Precipitation Leaching Procedure (SPLP) or any other test approved by the division.

2.6. A contingency plan designed to minimize any hazards to fresh water, public health and safety, or the environment in the event of an unplanned fire, explosion, or a release of contaminants or oil field waste to the air, soil, surface water or ground water.

2.7. A solid waste stream management plan describing all chemical processes, estimated volumes and chemical profiles used in the treatment of waste and odor, any products generated by these processes, method and schedule for disposal of precipitated solids and complete list of all wastes to be accepted at the facility.

2.8. A topographic map and drawing of the site, on a suitable scale, that identifies all geologic cross sections, side slopes, equipment, secondary containment, test borings, roads, fences, gates, wells and springs, drainage patterns, pipelines, surface area to be disturbed, buildings and chemical storage areas within one mile of the site perimeter and location relative to other site facilities. The drawings shall be of professional quality.

3. Siting requirements for new disposal facilities and

modifications.

3.1. The disposal facility shall be located on level, stable ground, and an acceptable distance away from any established or intermittent drainage.

3.2. The disposal facility shall be located a minimum of one mile from residences or occupied buildings not associated with the facility unless a waiver has been signed by the owners of the residences and buildings within one mile.

4. Geologic and hydrological requirements for new disposal facilities or modifications.

4.1. The disposal facility shall not be located in a geologically or hydrologically unsuitable area, such as aquifer recharge areas, protection zones for public drinking water sources, flood plains, drainage bottoms, and areas on or near faults, within 500 feet of a wetland, water-course or lakebed, permeable soil where ground water is less than 50 feet below the lowest elevation at which the operator will place oilfield waste, or within the area overlying a subsurface mine.

4.2. Regional and local geologic information shall include bedrock strike and dip, fracture patterns, slope stability, faulting, folding, rockfall, landslides, subsidence or erosion potential, and surface water features that may affect the design and operation of the facility.

4.3. Geological and hydrological evidence showing that the proposed disposal method will not adversely affect existing water quality or major uses of such waters.

4.3.1. Any intentional discharge of water will require an additional permit from the Division of Water Quality.

4.4. Test borings shall be taken in sufficient quantity and to an adequate depth, not to exceed 50 feet, to define subsurface conditions to assure that the facility will be constructed on a firm stable base.

4.5. Representative analysis of facility surface and subsurface soils submitted to the division shall include TDS, major cations and anions or other analysis determined necessary by the division for establishing background soil concentrations.

4.6. Geologic cross-sections submitted to the division shall include depth to shallow ground water, formation names, and type and name of the shallowest fresh water aquifer beneath the proposed site.

4.7. If determined necessary by the division, applicant shall submit ground water analysis of the aquifer(s) beneath the proposed site.

4.8. If determined necessary by the division, applicant shall submit potentiometric maps of the shallowest aquifer(s).

5. Engineering and design requirements for new disposal facilities and modifications.

5.1. Disposal facilities shall be designed and sealed by a registered engineer and inspected by a registered engineer during construction.

5.1.1. A construction certification shall be submitted, by the engineer, prior to the Division issuing an operation permit for the facility.

5.2. The disposal facility shall be designed appropriately for the intended purpose.

5.3. Facilities shall be designed, constructed and operated so as to contain liquids and solids in a manner that will protect fresh water, public health and safety, and the environment for the life of the operation.

5.3.1. The disposal facility shall be designed with secondary containment to capture the largest potential release in the event of a catastrophic failure.

5.4. Facilities shall be designed and constructed so as to prevent run-on and run-off of surface water, up to peak discharge from a 25 year, 24 hour storm.

5.5. The facility shall be designed such that disposal can only occur when an attendant is on duty, unless loads can be monitored or otherwise isolated for inspection before disposal or other security measures approved by the division.

#### **R649-9-4. Specific Requirements Applicable to Evaporation Facilities**

1. Evaporation facilities shall be designed, constructed and operated to meet the following specific requirements in addition to R649-9-3, Permit and Application Requirements for Disposal Facilities.

2. Applicant shall submit detailed construction/installation diagrams of ponds, side slopes, liners, pond storage capacity, leak detection systems, dikes or levees, wind fences, piping, enhanced evaporation systems with justification, water treatment systems and tanks.

2.1. Detailed information shall be submitted for all enhanced evaporation systems which demonstrates that unlawful discharge will not occur.

2.2. The facility shall be designed, maintained and operated to separate oil from produced water prior to discharge into a pond.

3. Applicant shall submit detailed construction/installation diagrams of unloading facilities and an explanation of the method for controlling and disposing of any liquid hydrocarbon accumulation on the ponds.

3.1. The unloading facility shall be designed, maintained and operated to adequately process the anticipated maximum daily quantity of produced water.

3.2. The unloading facility shall be designed with a leak detection system if determined necessary by the division.

3.2.1. Applicant shall submit procedures for repair should leakage occur.

4. Applicant shall submit the maximum daily quantity of water to be disposed of and a representative water analysis of such water that includes the concentrations of chlorides and sulfates, pH, total dissolved solids "TDS", and information regarding any other significant constituents if requested by the division.

5. Applicant shall submit climatological data describing the average annual evaporation and precipitation.

6. Ponds shall be designed, maintained and operated to meet the following requirements.

6.1. Ponds shall be designed for 10 acre-feet of water or less, unless otherwise approved by the division.

6.2. Ponds shall have adequate storage capacity to safely contain all produced water even during those periods when evaporation rates are at a minimum.

6.3. Ponds shall be designed to prevent unauthorized surface or subsurface discharge of water.

6.4. Ponds shall be designed to include a 2-foot free-board at all times.

6.5. Pond 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.

6.5.1. The top of the levee shall be level and of sufficient width to allow for adequate compaction.

6.5.2. Vertical height of the levees shall not exceed 25 percent of the total vertical depth of the pond.

7. Ponds 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.

7.1. The primary liner shall be impervious (a hydraulic conductivity no greater than  $1 \times 10^{-9}$  cm/sec) and constructed with a minimum 60-mil HDPE or equivalent liner approved by the division.

7.2. The secondary liner shall be impervious and constructed with a minimum 40-mil HDPE or equivalent liner approved by the division.

7.3. If rigid materials are used, 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.

7.4. Materials used in lining ponds shall be impervious and resistant to weather, tears and punctures, sunlight, hydrocarbons, aqueous acids, alkalies, salt, fungi, or other substances that might be contained in the produced water.

7.5. Applicant shall submit the type, thickness, strength, and life span of material(s) to be used for lining the pond and the method of installation.

7.6. Applicant shall submit procedures for repair of the liner, should leakage occur.

8. Applicant shall submit detailed construction/installation diagram for the leak detection system.

8.1. The leak detection design shall include, a drainage and collection system placed between the upper and lower liners and sloped so as to facilitate the earliest possible detection of a leak.

8.2. The leak detection design shall include a vertical riser outside the dike allowing direct visual inspection of the sump from the surface.

8.2.1. The sump shall be designed to extend a minimum of two feet below the inlet line from the pond, allowing visual detection of any fluid and sampling of fluid.

8.2.2. Designed with a removable top for the sump riser that will prevent entry of fluids.

8.3. Designed with leak detection piping capable of withstanding

chemical attack from oil field waste, structural loading from stresses and disturbances from overlying oil field waste and cover materials, equipment operation, expansion and/or contraction, and facilitate clean-out maintenance.

9. Evaporation facilities shall be operated to separate oil from produced water prior to discharge into a pond and prevent unauthorized surface discharge of water.

9.1. Hydrocarbon accumulation, other than de minimis quantities, on an evaporation pond is considered a violation and shall be removed within 24 hours.

9.2. Overspray from sprinklers and/or overspray caused by wind, including foam, outside lined areas are considered a violation and shall be corrected immediately.

9.3. Sampling and testing of soils suspected to be contaminated from overspray may be required by the division.

#### **R649-9-5. Specific Requirements Applicable to Landfarms**

1. Landfarms for the bioremediation of oil contaminated soils and materials shall be designed and constructed to meet the following specific requirements in addition to R649-9-3, Permit and Application Requirements for Disposal Facilities.

1.1. Landfarms shall be constructed on native soil with a hydraulic conductivity of no greater than  $1 \times 10^{-6}$  cm/sec.

1.2. With division approval, fresh water may be added as necessary to enhance bioremediation and control dust.

1.3. Application of microbes and nutrients for enhancing bioremediation requires prior division approval.

2. Landfarms shall be operated to meet the following requirements:

2.1. E & P waste accepted by the landfarm shall be sufficiently free of liquid content to pass a 60-mesh liquid paint filter test.

2.2. Pooling of liquids in the landfarm is prohibited. The operator shall remove freestanding liquid within 24 hours.

2.3. Within 72 hours after receipt of E & P waste the operator shall spread and disk the waste in twelve-inch or less lifts.

2.4. Soils shall be disked and turned regularly, a minimum of once a month.

2.5. Conduct treatment and soil monitoring to ensure that prior to adding an additional lift the soil concentrations do not exceed the division's current salinity and hydrocarbon cleanup standards.

2.6. Maintain records of the landfarm remediation activity. The records shall be readily accessible for division review.

#### **R649-9-6. Other Disposal Facility Requirements**

1. Facilities used for the treatment and disposal of E and P wastes other than evaporation ponds and landfarms shall be permitted by the division. This may include activities such as composting, solidifying, other bioremediation, water treatment, and others.

2. Application Requirements for Other Disposal Facilities require the following in addition to R 649-9-3, Permit and Application Requirements for Disposal Facilities:

2.1. A complete description of the proposed facility.

2.2. Processes involved including a complete list of all wastes

to be accepted at the facility and products generated.

2.3. Maps and drawings of suitable scale showing all facilities and equipment.

#### **R649-9-7. Noticing of Disposal Facilities**

1. The applicant for a new facility or major modification shall give written notice of the application, by certified mail, return receipt requested, to surface and mineral owners of record within one-half mile of the facility, the county commission of the county where the facility is located, and affected tribal and government agencies.

1.1. The notice shall include information describing the facility's location, basic plan of operations, and the applicant's name and address.

1.2. The applicant shall furnish the division proof of required notices.

1.3. The division may extend the distance requirements for notice if the division determines that the proposed disposal facility has the potential to adversely impact fresh water, public health, safety or the environment at a distance greater than one-half mile.

2. Within 30 days of the submission of an application for a disposal facility, the division shall review the application as to its completeness and adequacy for the intended purpose and shall require such changes that are found necessary to assure compliance with the applicable rules. If the application is in order, the division shall provide for a public notice to be published in a newspaper of general circulation in the county where the facility is to be located.

#### **R649-9-8. Bonding of Disposal Facilities**

1. Disposal facilities, other than injection wells and their associated facilities, shall be bonded according to this rule in order to protect the State and oil and gas producers from unnecessary liabilities and cleanup costs in the future. The objectives are to provide the State with adequate security for site reclamation and post closure cost should a facility owner default.

2. Permits issued after July 1, 2013 for new disposal facilities or modifications and facilities being reviewed for 5-year permit renewals, shall submit site reclamation and post closure cost estimates from a responsible third party contractor for division approval.

2.1. The applicant shall bond in the amount of the approved estimated site reclamation and post closure costs, or \$25,000, whichever is greatest.

3. Bonds accepted shall be of the same type as those accepted for wells i.e. surety, collateral, or a combination of the two as described in the R649-3-1.

4. The total bond will be held by the division or financial institution until the facility has been closed and inspected by the division in accordance with a division approved closure plan.

5. Bond amounts, for permits approved prior to July 1, 2013 will be calculated as follows, and the per volume or per acre figures may be adjusted periodically to compensate for change in cost to

perform the necessary cleanup work:

\$14,000 per acre of pit, partial acres will be calculated at the rate of \$14,000 per acre; plus

\$1.00 per barrel of produced water for one-quarter of the total storage capacity of the facility; plus

\$30 per cubic yard of solid or semi-solid waste material stockpiled at the facility.

\$10,000 Minimum bond amount.

5.1. Operators of disposal facilities permitted prior to July 1, 2013 shall have until July 1, 2018 (five years) to submit, to the division, a disposal facility site reclamation and post closure bond as required above in R649-9-8.2.

6. All disposal facilities, except injection wells covered by R649-3-1, will be covered by an adequate and acceptable bond before being permitted to accept any E and P waste.

7. Forfeiture of the bond shall be the same as those for wells as described in the R649-3-1.16.

#### **R649-9-9. Permit and Renewal Approval, Denial, Revocation, Suspension, Modification or Transfer**

1. Permit and renewal approval.

1.1. Construction approvals issued by the division are valid for one year from approval date. An extension may be granted by the division.

1.2. Operating approvals issued by the division for waste management facilities shall remain in effect for five years from the approval date.

1.3. After division review, permits may be renewed for successive 5-year terms.

1.3.1. Prior to renewal approval, the division shall review the operation, compliance history, bonding and technical requirements for the disposal facility.

1.3.2. The division, after notice to the operator, may require modifications of the disposal facility permit, including modifications necessary to the facility permit terms and conditions consistent with statutes, rules or judicial decisions.

2. An application may be denied if:

2.1. A complete application is not submitted.

2.2. The application does not meet R649-9-3.3 on siting and/or R649-9-3.4 on geologic and hydrologic requirements.

2.3. The proposed disposal facility or modification may be detrimental to fresh water, public health, safety or the environment.

2.4. The applicant is unable to justify good cause for the proposed facility.

2.5. An applicant or owner in the facility has a history of failure to comply with division rules and orders, state or federal environmental laws, or is in current violation of a division or board order requiring corrective action.

3. Revocation, suspension, or modification of a permit.

3.1. The division may revoke, suspend, or impose additional operating conditions or limitations on a disposal facility permit at any time, for good cause, after notice to the operator.

3.2. The division may suspend a waste disposal permit or impose

additional conditions or limitations in an emergency to forestall an imminent threat to fresh water, public health, safety or the environment.

3.3. Suspension of a disposal facility permit may be for a fixed period of time or until the operator remedies the violation or potential violation.

3.4. If the division suspends a disposal facility permit, the disposal facility shall not accept oil field waste during the suspension period.

4. Transfer of a permit.

4.1. The operator shall not transfer a permit without the division's prior written approval.

4.2. A request for transfer of a permit shall identify officers, directors and owners of 25 percent or greater in the transferee.

4.3. Unless the director otherwise orders, public notice or hearing are not required for the transfer request's approval.

4.4. If the division denies the transfer request, it shall notify the operator and the proposed transferee of the denial by certified mail, return receipt requested, and either the operator or the transferee may request, within 10 days of receipt of the notice, a public hearing before the board.

4.5. Until the division approves the transfer and the required assurance is in place, the division shall not release the transferor's financial assurance.

#### **R649-9-10. Construction and Inspection Requirements for Disposal Facilities**

1. Division personnel shall be afforded a reasonable opportunity for inspection of any proposed disposal facility during the construction and operation of the facility.

2. The division shall be notified at least 72 hours prior to the installation of leak detection systems or liners.

3. The division shall be notified after completion of facility construction so that a final inspection can be conducted to verify that the facility has been constructed in accordance with the approved application.

4. Failure to meet the requirements and standards for construction and operation of a disposal facility shall be considered as noncompliance and will result in the imposition of corrective actions and compliance schedules or a cessation of operations order.

#### **R649-9-11. Reporting and Recordkeeping for Disposal Facilities**

1. All unauthorized discharges or spills from disposal facilities including water observed in a leak detection system shall be reported, within 24 hours, to the division.

2. Each producer who utilizes any approved produced water disposal facility shall comply with the reporting requirements of R649-8-11.

3. Each operator of a disposal facility, excluding disposal wells, shall report to the division on a quarterly basis.

3.1. This report shall include the volume and type of wastes received at the facility during the quarter and results of the weekly leak detection system inspections.

3.2. Berms and outside walls shall be inspected quarterly and after a major rainfall or windstorm. Berm erosion or loss of integrity shall be reported to the division and may require immediate action.

4. The occurrence of water in a leak detection system during operation constitutes liner failure and requires immediate action.

4.1. The division has the option of allowing the operator a short period of time to take corrective action.

4.2. Further utilization will be allowed only after liner repairs and an inspection by the division.

5. Each owner/operator of a disposal facility shall keep records showing at a minimum the following: date and time waste was received, origin, volume, type, transporter, and generator of the waste. These records shall be available for inspection by the division for at least six years.

#### **R649-9-12. Closure and Post Closure of Disposal Facilities**

1. A plan for final closure of a disposal facility shall be submitted to the division, for approval, at least 60 days prior to cessation of operations. The closure plan shall include the following:

1.1. Provisions for removal of all equipment, buildings, fences and roads at the site.

1.2. Removal of berms.

1.3. Removal of liquids and solid waste to a division approved facility.

1.4. Disposal method for liners.

1.5. Plans and procedures for sampling and testing soils and ground water at the site.

1.5.1. Soils shall meet division cleanup standards or background levels whichever is less stringent.

1.6. A monitoring plan if required by the division.

1.7. Consideration of post disposal land use and landowner requests when the closure plan is developed.

2. During closure operations, the operator shall maintain the disposal facility to protect fresh water, public health, safety and the environment.

3. Location of the closed disposal facility shall be documented with the county recorder's office.

4. The bond for the disposal facility will be released when the division approved closure plan requirements have been met, as determined by the division.

#### **R649-9-13. Variances from Requirements and Standards**

Requests for approval of a variance from any of the requirements or standards of these rules shall be submitted to the director in writing and provide information as to the circumstances that warrant approval of the requested variance and the proposed alternative means by which the requirements or standards will be satisfied.