

Exploration and Production (E&P) Waste Management : Wastewater

Presentation to Water and Waste Management Committee

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Task From Committee:

- * At the January 24, 2013 meeting of the Water and Waste Management Committee, DENR staff was asked to research how wastewater should be managed onsite and to present background information at the March 2013 meeting.

Proposed General Rule:

- * Operators shall ensure E&P waste is properly stored, handled, transported, treated, recycled, or disposed of to prevent threatened environmental impacts. All waste management activities must be conducted in a manner that protects the land and waters of the state, except as permitted by applicable laws and regulations.

Overview From Other States:

- * Pits for storing fluids are generally recommended to be lined with either clay or other material.
- * Basic construction requirements:
 - * Capacity- 2 ft freeboard maintained, be able to retain 10yr-24 hr storm
- * Closure of pits to be within a certain time of final use of pit (when well is completed – when drill rig is removed from the site).



Types of Wastewater:

- * Produced Water: water that exists in subsurface formations and is brought to the surface during oil and gas production.
- * Encountered Water: shall mean water encountered during brine, oil, or gas drilling operations, which is of sufficient quantity to require disposal, and which is not Produced Water.
- * Drilling Fluids and muds
- * Fracking Fluids



Spills & Releases:

- * All spills/leaks/releases should be recorded showing the cause, size of spill and action taken, and the record to be maintained at facility.
- * Threshold levels for reporting- above a certain quantity requires immediate notification of spill/release and measures being taken to mitigate.

Recycling & Reuse:

- * Identify types of waste, proposed use of the waste, method of treatment, quality assurance, and any additional certifications or permits required by other laws and regulations.
- * Onsite treatment- membrane filtration, reverse osmosis, thermal distillation, other treatments.

Treatment & Disposal:

- * The receiving facility must be an authorized treatment facility by this state or by the state in which it is located.
 - * Operator must report name of facility and permit numbers
- * Encountered Water(s): shall mean water encountered during brine, oil, or gas drilling operations, which is of quantity to require disposal, and which is not Produced Water.
- * Produced water: shall be treated prior to placement in a pit to prevent crude oil and condensate from entering the pit.
- * Drilling fluids and muds: commercial solid waste disposal facility; land treatment/land application, or at a permitted centralized E&P Waste facility.
- * Bentonitic Drilling Fluids: drying and burial on non-crop land; land application as follows:
 - * Must have surface land owner approval, operator retain records of location, thickness (volume), and must respond to any requests for information or complaints about the land applied bentonite.
- * Reclaimed Water: (15NCAC 02U) meet tertiary quality effluent standards prior to storage or use.



Recommendations to Committee:

- The topic of wastewater management will require additional research into areas of solid waste disposal and land application.
 - Areas where construction standards are required should be under the Admin of Oil and Gas Committee.
- Site characterization for onsite treatment and disposal of wastewater should be required.
 - This should satisfy requirements under 15A NCAC 02T (land application) and 02U (reclaimed water).
- Notification of pit closure(s)- can be tracked from the well completion report.
 - * Number of days from date of well completion?
 - After dewatering and waste characterization, burial of inert materials onsite.
 - Residuals solidified and then wrapped and buried.
- ALL spills/releases to be reported, but a threshold for immediate reporting of spills/releases should be examined.



Discussion

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