New Mexico Environment Department Testimony in EIB 21-27 (R)

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Section 20.2.50.126 – Produced Water Management Units

Overview of Produced Water Management Units

- The majority of oil- and gas-bearing formations also contain naturally occurring water, often referred to as “formation” or “connate” water.
- When oil or gas is extracted, this “produced water” is also extracted as a by-product. The actual amount of produced water varies widely depending on the location or stage in the lifetime of a particular well. In addition to reflecting the chemical makeup of the geologic formation from which it is extracted, produced water will also contain suspended solids, dissolved solids, varying amounts of oil residues and organics containing VOCs, and the various chemicals used in the production process.
- Produced water from gas production typically has higher contents of low molecular-weight aromatic hydrocarbons, such as benzene, toluene, ethylbenzene, and xylene (“BTEX”) than produced water from oil production.

Overview of Produced Water Management Units

Conventional Oil and Gas

- On average, about 7 to 10 barrels, or 280 to 400 gallons, of water are produced for every barrel of crude oil.

Unconventional Oil and Gas

- Produced water from most unconventional resources, besides coal bed methane, is minimal due to tighter reservoir formations such as tight sands, oil shale, and gas shale reservoirs. Producers commonly import water to these operations for onsite use in drilling, fracturing, and production.

Emissions and Control Options

- VOC emissions from PWMU can be reduced by treating the produced water to remove hydrocarbons before the water enters the recycling facility or impoundment. The emissions are reduced when produced water is processed through separators and storage vessels, which separates the hydrocarbons from the produced water prior to sending to a PWMU.

Summary of Applicability, Emission Standards, and Monitoring Requirements

20.2.50.126 PRODUCED WATER MANAGEMENT UNITS

A. Applicability: Produced water management units as defined in this Part are subject to 20.2.50.126 NMAC and shall comply with these requirements no later than 180 days after the effective date of this Part.

B. Emission standards:

(1) The owner or operator shall use best management and good operational or engineering practices to minimize emissions of VOC from produced water management units (PWMU).

(2) The owner or operator shall not allow any dumping of untreated produced water to a PWMU without first processing and treating the produced water in a separator and/or storage vessel to minimize entrained hydrocarbons. ~~control VOC emissions from each produced water management unit to less than two tons per year.~~

C. Monitoring requirements: The owner or operator shall:

(1) develop a protocol to calculate the VOC emissions from each PWMU. The protocol shall include at a minimum: produced water throughput monitoring, semi-annual sampling and analysis of the liquid composition, hydrocarbon measurement method(s), representative sample size, and chain of custody requirements.

(2) calculate the monthly ~~rolling 12-month~~ total ~~of~~ VOC emissions in tons from each unit with the first month of emission calculations beginning within 180 days of the effective date of this Part;

(3~~2~~) monthly, monitor the best management and good operational or engineering practices implemented to reduce emissions at each unit to ensure and demonstrate their effectiveness;

(4) upon written request by the department, sample the PWMU to determine the VOC content of the liquid; and ~~and~~

(5~~3~~) comply with the monitoring requirements ~~in 20.2.50.112 NMAC~~of 20.2.50.112 NMAC.

Summary of Recordkeeping Requirements

D. Recordkeeping requirements:

(1) The owner or operator shall maintain the following electronic records for each PWMU ~~produced water management unit~~:

(a) ~~name or~~ unique identification number ~~of the unit and~~ and ~~-~~ UTM coordinates of the PWMU ~~of the unit and county~~;

(b) ~~a description of~~ the best management and good operational or engineering practices used to minimize ~~release~~ emissions of VOC from ~~at~~ the unit;

(c) the protocol, and the results of the sampling conducted in accordance with the protocol; and

(d~~e~~) a record of the ~~monthly rolling 12-month~~ annual total VOC emissions from each unit.

(2) The owner or operator shall comply with the recordkeeping requirements in 20.2.50.112 NMAC.

E. Reporting requirements: The owner or operator shall comply with the reporting requirements in 20.2.50.112 NMAC.

[20.2.50.126 NMAC - N, XX/XX/2021]