



# WQCC 25-34 Reuse of Treated Produced Water

Water and Natural Resource Committee  
October 30, 2025  
Artesia, NM

## Reuse of Treated Produced Water

- Produced Water is water that is brought to the surface during oil and gas production
- Oil & Gas production in Permian Basin (TX & NM) generates substantial volumes of produced water

**TX & NM: ~8B bbls/yr (1.1M AFA)**

*Context: Navajo Reservoir @ ~ 900k AF*

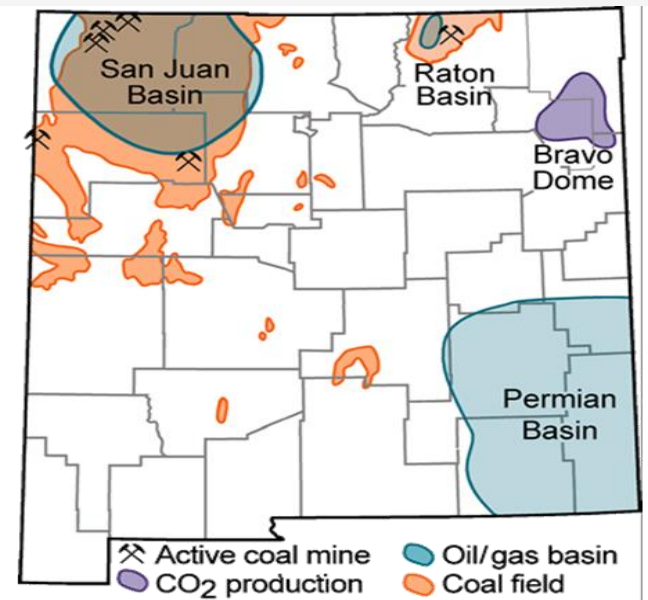
**Permian NM: ~2.5B bbls/yr (325k AFA)**

*Context: Lea County water use ~ 150k AFA*

*ABQ Bernalillo County ~ 100k AFA*

**San Juan NM: ~25M bbls/yr (3,200 AFA)**

*Context: Gallup groundwater use ~ 3k AFA*



Oil and natural gas production basins in NM.

Source: New Mexico Bureau of Geology and Mineral Resources.

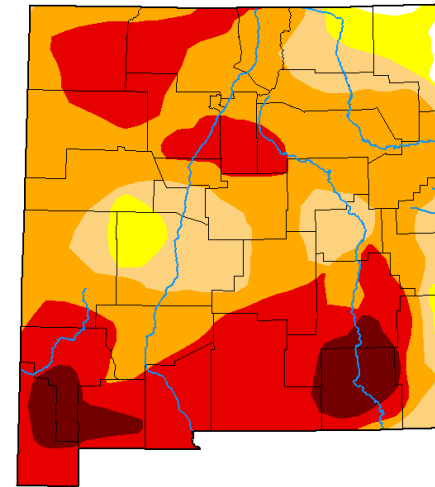
# Reuse of Treated Produced Water

## Why Pursue Use of Treated Produced Water

- Protect ground and surface water quality
  - Reduce use of saltwater injection wells for disposal
- Increase New Mexico's Resource Resilience
  - Leverage non-traditional water resource to conserve potable / fresh sources
  - Provide a water resource for community and economic development
- TX moving forward with discharge permits relying largely on science / data developed at NMSU and NM and TX Produced Water Research Consortia

### U.S. Drought Monitor New Mexico

January 9, 2024  
(Released Thursday, Jan. 11, 2024)  
Valid 7 a.m. EST



#### Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>*

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[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

# Reuse of Treated Produced Water



Oil and Natural Gas Produced Water Governance  
in the State of New Mexico—Draft White Paper



November 9, 2018

## Produced Water Act (2019)

- Clarifies jurisdiction between, EMNRD and NMED
- Clarifies matters of ownership and control
- Encourages recycle
- Requires NMED to adopt regulations for the discharge, handling, transport, storage, recycling or treatment for the disposition of treated produced water



## Treated Produced Water Reuse Rule Development Timeline

- Phased Approach to the Development of WQA regulations for the “discharge, handling, transport, storage, and recycling or treatment of produced water or byproduct[s] there of outside the oilfield” :
  - Phase 1: Prohibitory Rule establishing a broad reuse framework.
    - NMED Estimated timeline: 2023-2024.
    - Rule adopted May 2025.
  - Phase 2: Changing the rules, as defensible data becomes available, to expand the conditions for additional authorized uses as supported by the science.
    - NMED Original Estimated Timeline: Post 2024
    - WATR Alliance Petition filed June 2025

## *Reuse of Treated Produced Water*

### Supplemental Requirements for Water Reuse

Rule Date

May 14, 2025

Scope:

Prohibits produced water discharge (treated or untreated) to any ground or surface water and Federal permits that propose surface discharge will not be certified

Duration:

Sunset after 5 years

Pilot Projects:

Discharges banned; must comply with rule

## Risk-based Use of Treated Produced Water Outside of the Oil Field

- Petition in WQCC 25-34 filed June 20, 2025
- Petition proposes a robust reuse permitting framework:
  - Permit-specific water quality standards
  - Comprehensive water monitoring program
  - Targeted and Non-targeted Analysis
  - Whole effluent toxicity testing
  - Effluent & Control limits
  - Monitoring and closure plans
  - Financial assurance requirements



## Precautionary Principle in Reuse of Treated Produced Water

- Science-Based Uncertainty Management
  - Water scarcity demands action; the precautionary principle ensures that reuse proceeds safely, even amid some degree of uncertainty.
- Water reuse programs adopt PP via multi-barrier treatment + strict monitoring, despite unknowns in water (e.g. CA DPR)
- Rule proposed in WQCC 25-34 proposes a three-barrier analytical approach to capture known + unknown risks
- Indicators & surrogates serve as early warning signals
- Stop conditions require correction if protections fail
- Flexibility granted only after safety is demonstrated
- Proposal introduces adaptive management



# Reuse of Treated Produced Water

## Monitoring & Testing

- Real-time: Tier 1
  - Temp
  - pH
  - EC
  - DO
  - TOC
  - ...
- Weekly: Tier 2
  - TDS
  - Ammonia
  - Boron
  - Chloride
  - Gross Alpha / Beta
  - ...

| Indicator   | Analytical Methods, also see 40 CFR Part 136                       | Control Limit Reference Range |
|---|--|-------------------------------|
| <b>Tier 1</b>   |  |                               |
| Temperature, °C (real-time)   | SM 2550 B-2010 / EPA 170.1   | Range:                        |
| pH (real-time)  | SM 4500-H+ B-2011 / EPA 150.1 / SW-846 9040/9045                   | Range:                        |
| Electrical conductivity (real-time)                                 | SM 2510 B-2011 (Conductivity Meter) / EPA 120.1                    | Range:                        |
| Dissolved oxygen (DO) (real-time)                                   | SM 2580 B-1997 / ASTM D 1498                                       | Range:                        |
| Turbidity (real-time)   | SM 2130B / EPA 180.1   | Range:                        |
| Total organic carbon (TOC) (daily)                                  | SM 5310 B-2000 (Combustion) / EPA 415.1 / EPA 415.2 / SW-846 9060A | Range:                        |
| <b>Tier 2 - weekly or/and under changes in operating conditions</b> |  |                               |
| Total dissolved solids (TDS)  | SM 2540 C-1997 (Gravimetric) / EPA 160.1                           | Range:                        |
| Total ammonia (as N)  | SM 4500-NH3 / EPA 350.1  | Range:                        |
| Boron   | EPA 200.7 / SW-846 6010  | Range:                        |
| Sodium  | EPA 200.7 / SW-846 6010 or 7000                                    | Range:                        |
| Chloride  | EPA 300.0 / EPA 300.1 / SW-846 9056A                               | Range:                        |
| Hardness (Ca and Mg)  | SM 2340B   | Range:                        |
| Gross Alpha/Beta (Radionuclides)                                    | EPA 900.0 / SW 9310 Mod  | Range:                        |
| Benzene, toluene, ethylbenzene, xylenes (as                         | SW-846 8260 latest version   | Range:                        |

## Barrier 1: Targeted Analysis

- A validated method exists to DETECT & QUANTIFY a known compound.
- NPDES+ list
- Indicators & surrogates
- Fail → no release; investigate & correct

## Barrier 2: Non-Targeted Analysis

- HRMS – LC & GC
- Suspect screening + non-target discovery
- Catches unknown / novel constituents
- Trigger thresholds → confirm/identify → remedy

## Barrier 3: Whole Effluent Toxicity

- Acute (100% effluent) & periodic chronic
- Backstop for mixture effects
- TIE/TRE if toxicity observed
- Pass both → meets release spec

## Outcome & Decision Logic

All three barriers must pass: if any barrier fails → hold discharge, corrective action, re-test; if all pass → discharge/reuse permitted under numeric limits and permit conditions.