

New Mexico Produced Water Data Portal

Frequently Asked Questions and Fact Sheet

Q 1. What is produced water?

As defined in the *2019 NM Produced Water Act*, “produced water” means a fluid that is an incidental byproduct from drilling for or the production of oil and gas.” This then includes formation water, water used during drilling, and/or water used during hydraulic fracturing operations.

Q 2. What is a disposal well?

A well, often a depleted oil or gas well, into which waste fluids can be injected for safe disposal. These are often called Salt Water Disposal wells, or “SWD” for short. They are called this because most oil is found in deep, ancient seabeds, where the oil has mixed with what was once sea water for millions of years, yielding produced waters with high salinity.

SWD’s can be drilled to depth of 10,000 feet or more (~2 miles deep) with excess produced water injected into deep geologic formations for disposal. These disposal wells are operated and maintained as governed under Federal Underground Injection Control requirements managed by State Oil and Gas Agencies or Directly by the US EPA.

Q 3. What is an injection well?

A well in which fluids are injected rather than produced, the primary objectives being to maintain reservoir pressure for increased production (e.g., enhanced recovery wells, EOR) or dispose of water (e.g., SWD).

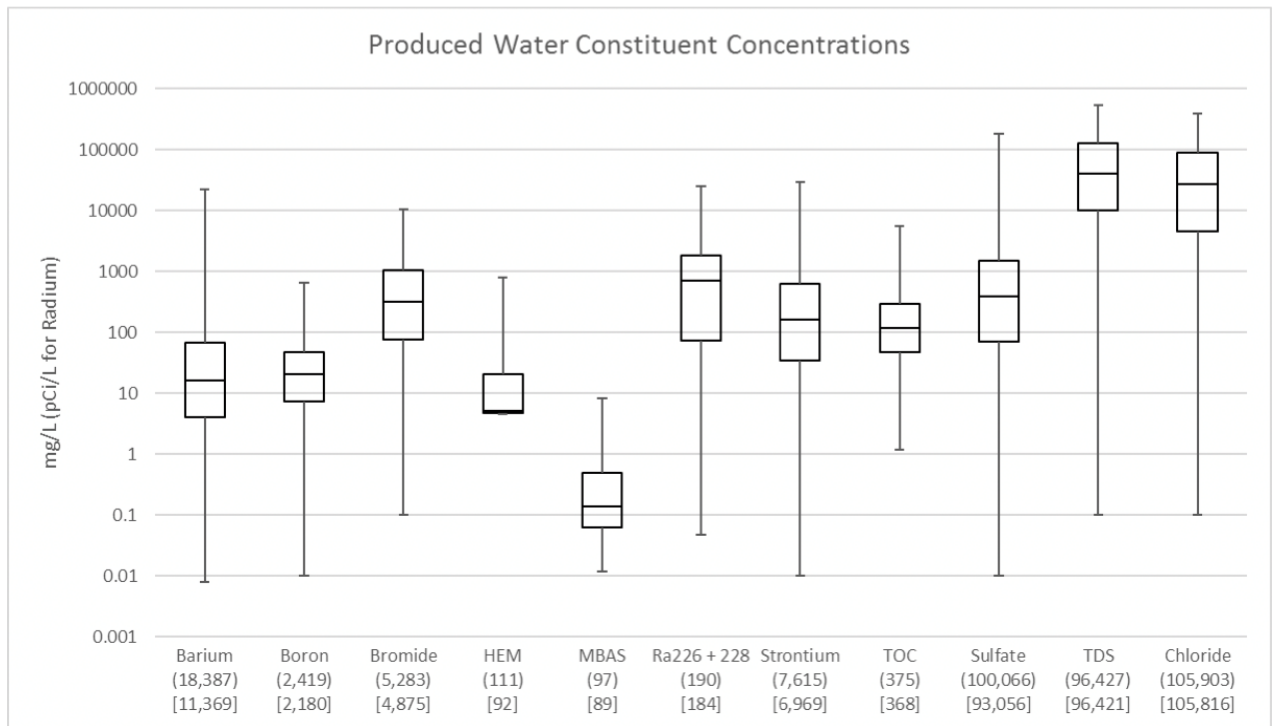
During enhanced recovery there are two main types of injection fluids: *gas or water*. The fluid is injected into the reservoir to maintain pressure in the reservoir and produce oil.

For disposal wells see Q 2.

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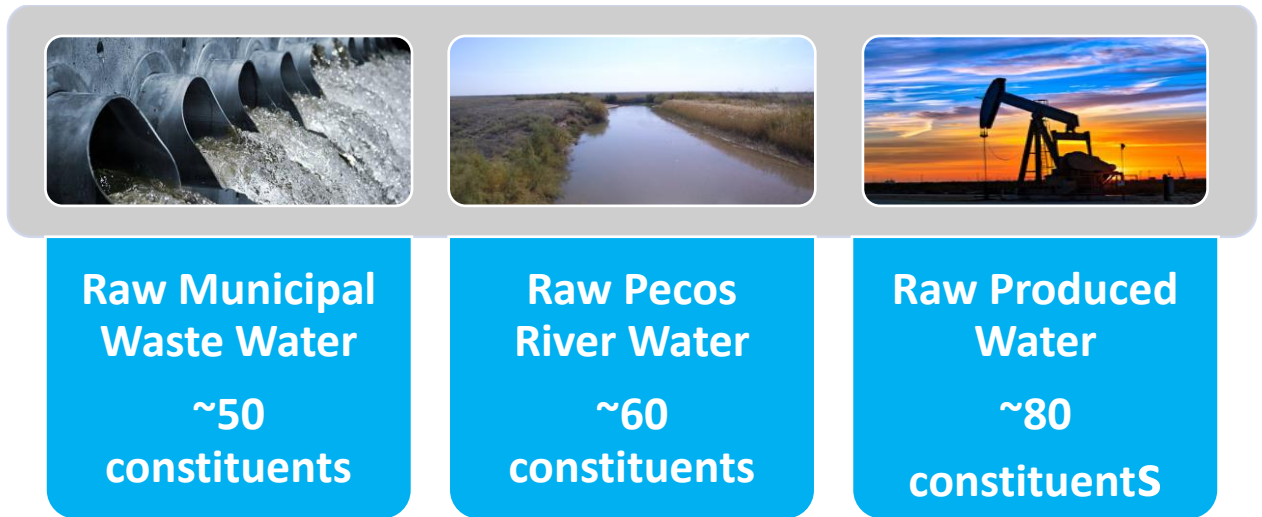
Q 4. What are Produced water quality issues and challenges for reuse?

The EPA published a report in 2020 providing information on the general quality of produced water from basins around the US. The figure below highlights some of the different constituents in produced water. Produced water in New Mexico generally falls within the nominal range of values shown. As noted in this figure, most produced water contains a high concentration of salts, often 2-4 times higher than sea water.



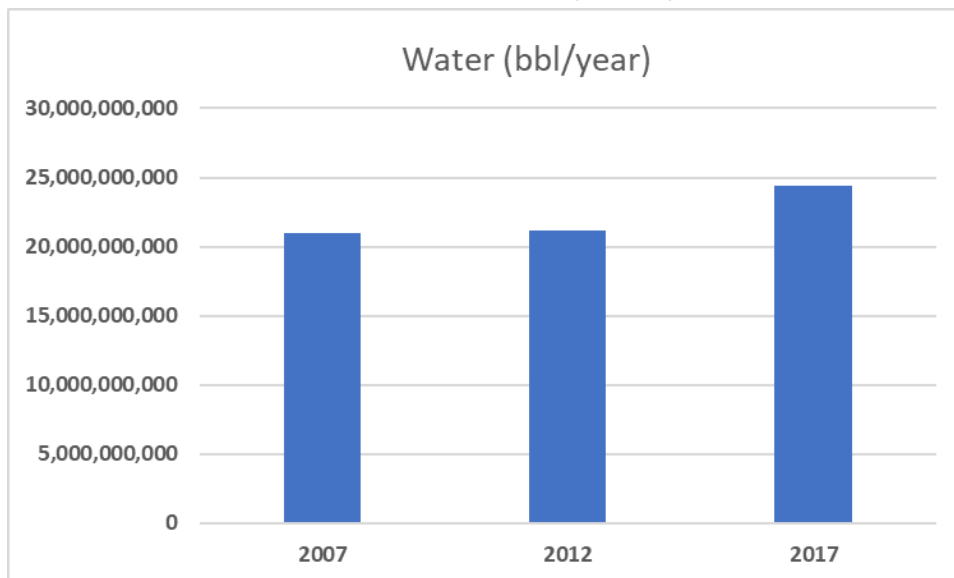
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The figure below shows the relative number of constituents found in different waste and surface waters in New Mexico. This highlights that the reuse of any waste water, whether municipal or industrial, will require treatment in order to be protective of public and environmental health and safety.



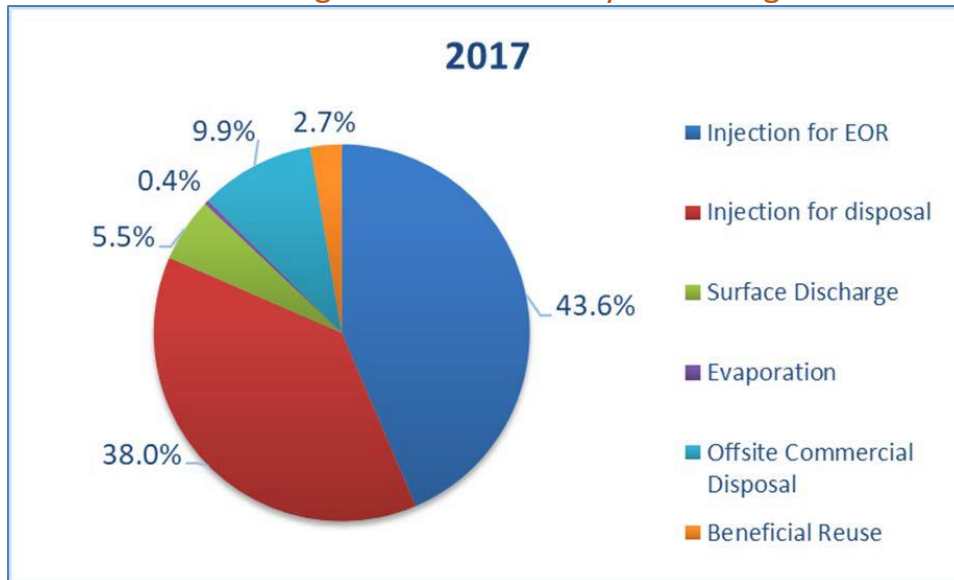
Q 5. How much water is being Produced in the US and NM?

Volume of Water Produced in 2007, 2012, and 2017 in U.S.



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U.S. Water Management Practices by Percentage in 2017

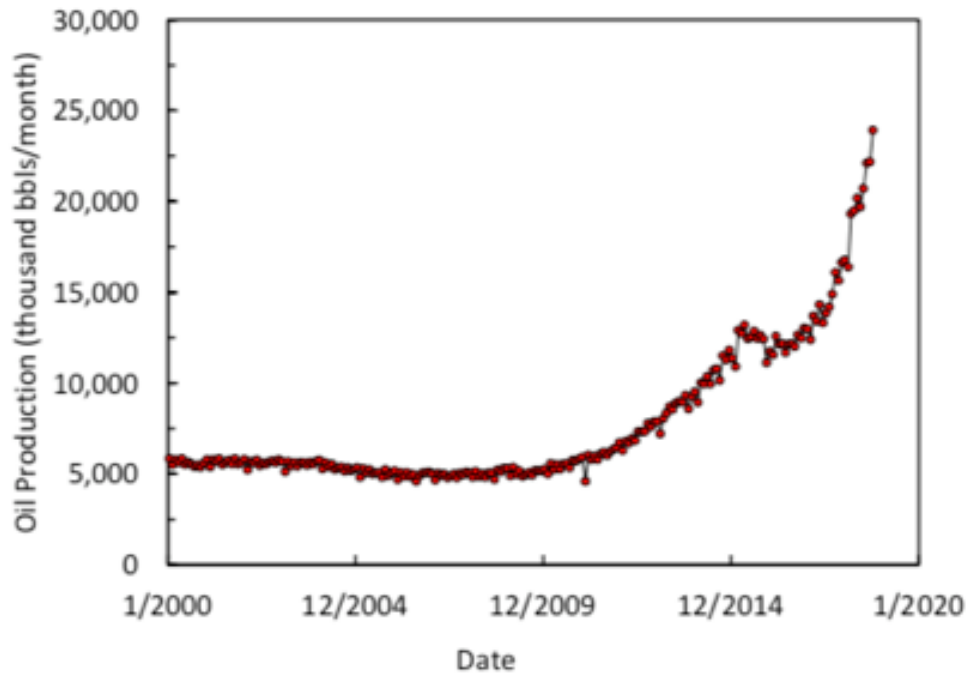


New Mexico Produced Water Production

NM Oil and gas production has increased significantly since 2010 and is now slightly over 1 million barrels oil equivalent per day. NM produced water production is about 4 million barrels per day. Of that, approximately 25% or about 1 million bbls per day of produced water is available for fit-for-purpose reuse. (The volume of produced water that is not already being reused for purposes within the oil field and is being disposed.)

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NM Oil Production



Q 6. How is produced water currently used in New Mexico?

Produced water in NM is not being surface discharged. About 70% of all produced water is used for enhanced oil recovery (EOR) and an additional 4% for hydraulic fracturing jobs.

Produced water use currently makes up about 60% of all hydraulic fracturing water in New Mexico. Use of Produced Water to replace fresh water in fracturing and drilling operations has become the norm. Only about 8% of all water used in fracturing jobs is fresh water; the rest is saline and/or produced water.

This leaves about 25% of Produced Water that is currently being disposed of in salt water disposal wells. This volume is what is commonly considered available for reuse and is represented in the Water Data Portal.

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Q 7. What are the potential options for treatment and reuse of produced water and associated water quality needs of reuse options?

Target Water Reuse Application	Target Treated Water Quality Requirement (ppm) TDS
Drinking	500-600
Agriculture/Dairy	1000-2000
Agriculture/rangeland	2000-5000
Industrial	200-1000
Construction	10,000 – 50,000
Road Construction and maintenance	10,000 - 50,000
Mineral extraction	100,000 - 300,000

Q 8. Where can I find out more information regarding Produced Water in New Mexico?

<https://www.emnrd.nm.gov/ocd/>

<https://www.nmstatelands.org/>

<http://octane.nmt.edu/gotech/>

Additional References

<https://glossary.oilfield.slb.com/>

<https://www.gwpc.org/sites/gwpc/uploads/documents/publications>

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https://www.env.nm.gov/new-mexico-produced-water/wp-content/uploads/sites/16/2019/11/Produced-Water-Public-Meeting-Presentation_ENGLISH_FINAL-191114.pdf

Produced Water Volumes and Management Practices in the United State, Ground Water Research and Education Foundation by John Veil, Veil Environmental, Veil, J.A., 2017,

https://www.gwpc.org/sites/gwpc/uploads/documents/publications/pw_report_2017_final.pdf

Injection Wells: A Guide to Their Use, Operation, and Regulation, Ground Water Protection Council, June 2021,

https://www.gwpc.org/sites/gwpc/uploads/documents/publications/UIC_Guide_June_2021_Update1.pdf

Produced Water Report: Regulations, Current Practices, and Research Needs, Ground Water Protection Council, June 2019,

https://www.gwpc.org/sites/gwpc/uploads/documents/Research/Produced_Water_Full_Report_Digital_Use.pdf



**NM Produced Water
Research Consortium**