

# Produced Water in the New Mexico Oil and Gas Industry

NEW MEXICO OIL CONSERVATION DIVISION (OCD) OF THE ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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# Produced Water

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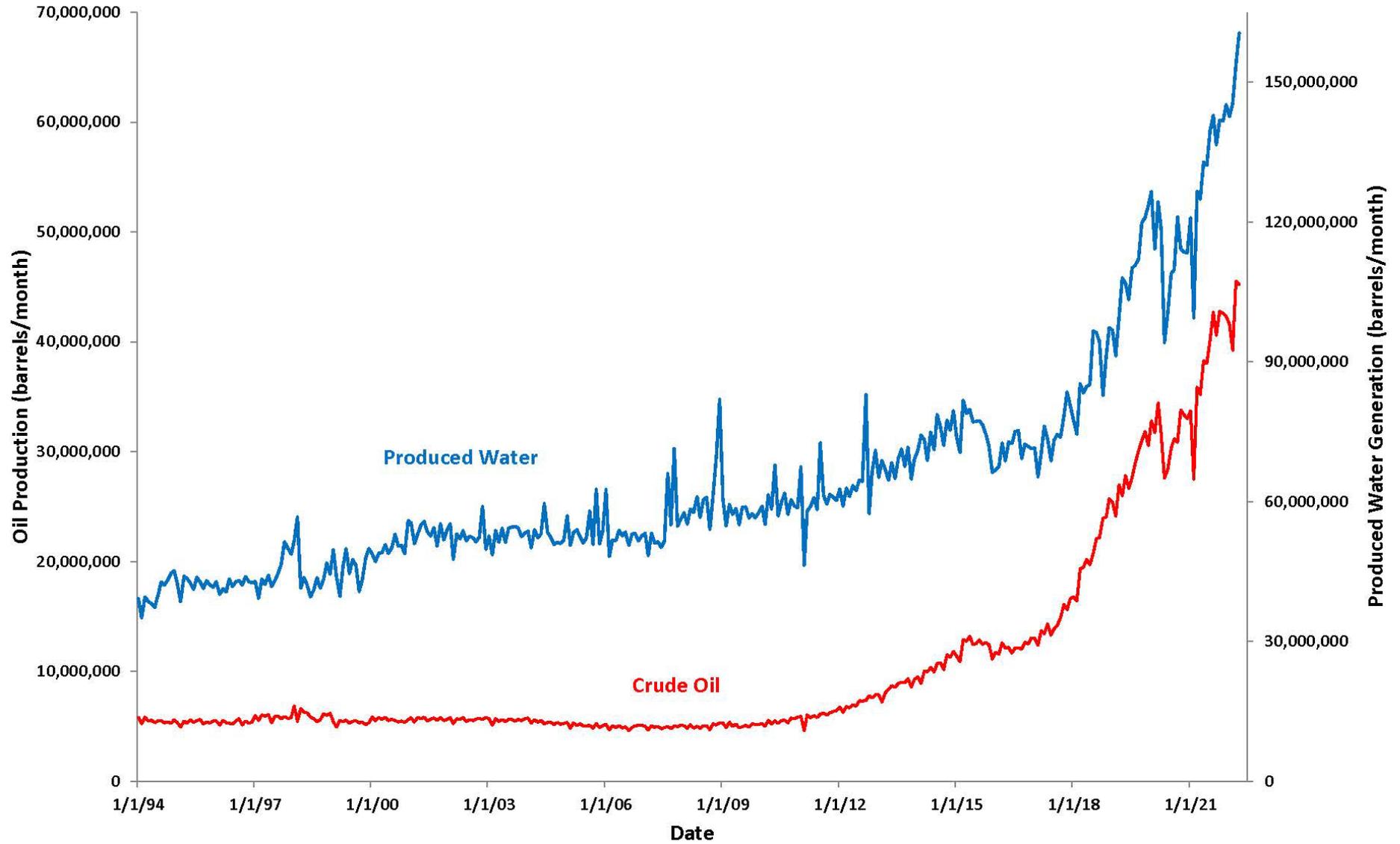
- Definition: "produced water" means a fluid that is an incidental byproduct from drilling for or the production of oil and gas
  - Primarily 'formation water' and can also include 'flowback water'
  - Often highly saline and can also contain drilling and completion chemicals
- Produced Water Act:
  - Passed in 2019 legislative session
  - Clarifies administrative authority over the reuse of produced water
  - Oil Conservation Division (OCD) within the Energy Minerals and Natural Resources Department (EMNRD) is limited to regulating reuse and disposal within oil and gas industry
  - New Mexico Environment Department (NMED) will regulate all other uses of produced water outside of oil and gas industry

# How Much Produced Water is There?

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- Produced water generation is primarily a function of the amount of oil and natural gas produced.
- 5.4 million barrels of produced water are currently generated from New Mexico wells each day (225 million gallons/day), compared to 1.5 million barrels of oil and 7.3 billion cubic feet of natural gas.
- Historically, the water to oil ratio (known as the “water cut”) has been as high as 11 to 1, however it is now at a ratio of less than 4 to 1

Monthly Crude Oil Production and Produced Water Generation in New Mexico Since 1994



# Where Does the Produced Water Go?

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- Reinjected into Reservoirs for Enhanced Oil Recovery and Pressure Maintenance
- Injected into Deep Wells in New Mexico for Permanent Disposal
  - **717 million barrels in 2021**
- Recycled Within the Industry for Drilling and Completions
  - **176 million barrels in 2021**
- Reported as Spilled and Not Recovered
  - **26 thousand barrels in 2021**

# Oil and Gas Reuse of Produced Water

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Wells Fracked since October 13, 2020

1,828

Average Volume of Water Used per Frac

313,800 bbls

Year	# of wells*	Produced Water (gallons)	%	Fresh water TDS<1K (gallons)	%	Brackish Water TDS 1K-10K (gallons)	%	Saline Water TDS>10K (gallons)	%	Total Water (gallons)
2022	690	4,277,557,618	64.59%	262,051,067	3.96%	1,549,516,835	23.40%	533,289,340	8.05%	6,622,414,860
2021	1,007	7,643,013,979	50.90%	1,623,547,696	10.81%	4,899,777,196	32.63%	848,488,666	5.65%	15,014,827,537
2020	160	1,326,257,946	48.14%	625,872,706	22.72%	799,614,290	29.02%	3,374,868	0.12%	2,755,119,810

\*Data as of 7/28/22

# OCD Regulations Managing Produced Water

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## Volume Reporting

- 19.15.16.20 NMAC: reporting of water used in completions operations (added 2020)

## Storage

- 19.15.17 NMAC: impoundments (revised 2013)
- 19.15.34 NMAC: recycling containments and transportation (revised 2020)

## Injection wells

- 19.15.26 NMAC: injection for disposal and enhanced recovery (revised 2018)
- 40 CFR 144: Safe Drinking Water Act

## Spills, cleanup

- 19.15.29 NMAC: releases (revised 2021)
- 19.15.30 NMAC: remediation

# Recent Rule Updates

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In July of 2020 OCD held a rulemaking hearing in order to align existing OCD rules with the Produced Water Act and add additional water reporting requirements

- 19.15.34 NMAC: changed language to comply with revisions to agency jurisdiction under Produced Water Act
- 19.15.16.20 NMAC: Added new requirement for disclosure of volumes and sources of water for completion (hydraulic fracturing) of well
- Rule updates went into effect on October 13, 2020
  - Required operators to report within 45 days of drilling and completing a well using the OCD Water Use Report tool within OCD Permitting Online system

In June of 2021 OCD held a rulemaking hearing on proposed changes to the release rule 19.15.29 NMAC

- Changes prohibit major and minor spills from oil and gas industry operations, while giving OCD increased authority to take enforcement actions against operators who spill
  - Under the previous rule, releases were not explicitly prohibited, and the OCD was limited to penalizing operators who failed to report the spill or did not undertake corrective action
- OCC voted unanimously to adopt the changes on July 8, 2020
- Changes went into effect on August 24, 2021

# Questions?

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