SIERRA CLUB
LONE STAR CHAPTER

# Produced Water Reuse

Produced water is a toxic byproduct of oil and gas production, and Texas generates enormous amounts of it every day. Most of it is disposed of via underground injection, but this practice has increased earthquakes, while underground disposal capacity is becoming limited. Now Texas is looking at whether this wastewater could become a new water supply, even as scientists are still working to understand how to safely reuse it.

## Produced Water in Texas

- Produced water – wastewater that comes to the surface during oil and gas production – includes water naturally present in underground formations and chemicals used in hydraulic fracturing.
- Texas generates about 1 billion gallons of produced water daily, mostly in the Permian Basin, and volumes are expected to increase.
- In addition to the amount generated in Texas, at least 170 million gallons of produced water are imported from other states every day for underground injection.
- Produced water can contain heavy metals, organic and inorganic compounds, naturally occurring radioactive materials (NORMs), and chemicals used in oil and gas operations, among other constituents of concern.
- Produced water is very salty and can be several times saltier than ocean water, depending on the location where it is generated.
- Some produced water is recycled in the oilfield to support oil and gas production; most produced water is injected into deep underground disposal wells – a practice that has been linked to earthquakes.
- Underground injection can also cause “zombie wells” – inactive, abandoned oil and gas wells that were poorly plugged or left unplugged – to leak injected produced water, potentially polluting soil, groundwater, and rivers.
- Available underground disposal capacity is becoming more limited in Texas, and the oil and gas industry is looking for alternatives to underground disposal, including treating produced water and reuse it outside the oilfield.
- Responsibility for produced water management is divided between the Railroad Commission of Texas (RRC) and Texas Commission on Environmental Quality (TCEQ):
    - RRC oversees underground disposal, and
    - TCEQ regulates reuse outside the oilfield, including land application and discharges into rivers and streams.

**Cyrus Reed**
Legislative & Conservation Director
cyrus.reed@sierraclub.org
(512) 740-4086

**Evgenia Spears**
Water Program Manager
evgenia.spears@sierraclub.org
(979) 739-1097

**Sierra Club Lone Star Chapter**
sierraclub.org/texas
facebook.com/texassierraclub
instagram.com/texassierraclub

SIERRA CLUB
LONE STAR CHAPTER

## Produced Water As A New Water Supply

- Texas is exploring ways to treat and reuse produced water to expand existing water supplies.
- The 87th Legislature established the Texas Produced Water Consortium (TxPWC) to study beneficial reuse of produced water, including the feasibility of its treatment and long-term impacts on public health and ecosystems.
- Beneficial reuse includes uses outside the oilfield, such as discharging treated produced water into rivers and streams to keep water flowing, using it for irrigation or rangeland restoration, and potentially even as a source of drinking water.
- There's a significant push at the Legislature to move produced water reuse beyond pilot studies to commercial scale, including by making projects easier to permit and deploy.
- To reduce liability concerns and help scale up reuse, the 89th Legislature passed HB 49 to shield companies involved in treating, transporting, and reusing produced water outside the oilfield from certain liabilities.
- Following the passage of Proposition 4 in 2025, produced water treatment and reuse projects became eligible for significant state funding.
- Through the passage of SB 1145, the 89th Legislature authorized TCEQ to regulate the use of treated produced water on land, including for irrigation and rangeland restoration (prior to that, this type of reuse fell under the RRC's jurisdiction).
- TCEQ is already reviewing the total of 8 permit applications to discharge treated produced water into the Pecos River watershed and 9 applications to use it on land; however, none of the permits have been approved.
- The 2027 State Water Plan includes produced water only as onsite recycling within the oil and gas industry, not as a new water supply outside the oilfield.

## Reuse Challenges

- Research on produced water treatment and reuse is still developing as scientists continue to study its feasibility and long-term impacts on people and the environment.
- TxPWC researchers don't have complete information about all chemicals that may be present in raw produced water because some of those chemicals are legally protected as trade secrets in Texas.
- TCEQ's regulations for reuse of treated produced water on land don't set clear treatment standards, monitoring requirements, enforcement mechanisms, or address how contaminants could build up in the environment with repeated applications over time.
- Treating produced water for reuse remains expensive, and its feasibility at a large scale is still being studied, with earlier TxPWC estimates at about $2.75 per barrel of treated water, or nearly $21,300 per acre-foot.
- The division of authority between RRC and TCEQ is unclear, which can create potential gaps in regulatory oversight as produced water is treated for uses outside the oilfield.
- Texas doesn't have a comprehensive database for tracking how much produced water is generated, recycled, or disposed of, which complicates its management and regulation.

**Cyrus Reed**
Legislative & Conservation Director
cyrus.reed@sierraclub.org
(512) 740-4086

**Evgenia Spears**
Water Program Manager
evgenia.spears@sierraclub.org
(979) 739-1097

**Sierra Club Lone Star Chapter**
sierraclub.org/texas
facebook.com/texassierraclub
instagram.com/texassierraclub

SIERRA CLUB
LONE STAR CHAPTER

## Proposed Solutions

- Continue funding TxPWC work and let the best available science guide policies and regulations; don't deploy large-scale reuse until research determines that it's safe for people and the environment.
- Ensure that TxPWC researchers and produced water treatment companies have access to complete information about chemicals used in oil and gas operations that may be present in produced water, including those protected as trade secrets.
- Pause permitting of produced water reuse outside the oilfield until TCEQ develops and adopts science-based standards that protect public health and the environment over the long term.
- Require robust monitoring that can effectively detect impacts on rivers, soil, and groundwater before and after produced water reuse begins.
- Clarify where RRC's authority ends and TCEQ's begins so produced water reuse doesn't fall through regulatory gaps.
- Continue maximizing produced water recycling within the oilfield.
- Provide additional funds to RRC for the development of the produced water database and tracking system.
- Invest in public outreach and education about produced water reuse, whether through TxPWC, the statewide water awareness campaign, or other programs.

**Cyrus Reed**
Legislative & Conservation Director
cyrus.reed@sierraclub.org
(512) 740-4086

**Evgenia Spears**
Water Program Manager
evgenia.spears@sierraclub.org
(979) 739-1097

**Sierra Club Lone Star Chapter**
sierraclub.org/texas
facebook.com/texassierraclub
instagram.com/texassierraclub

SIERRA CLUB
LONE STAR CHAPTER