

Produced Water Reuse and Recycling (April 2017): Report of the Oklahoma Produced Water Working Group



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The Oklahoma Produced Water Working Group (“Group”) issued an April 26, 2017 report titled:

Oklahoma Water for 2060 Produced Water Reuse and Recycling (“Report”)

The Group is described as 17 members that were led by the Oklahoma Water Resources Board and “tasked with studying and recommending alternatives to produced water disposal from oil and gas operations in Oklahoma.”

Oil and gas drilling/fracturing produce water as part of the extraction process. It is present in the formations that contain the oil and natural gas. The amount of water produced by a particular operation will vary by location, producing formation, and age.

The *Report* is stated to:

- Constitute a continuation of the implementation of the 2012 Oklahoma Comprehensive Water Plan
- Support the Oklahoma Governor’s initiative to re-use or recycle water produced in oil and gas operations
- Assess the potential alternatives to current practices of injecting produced water from oil and gas wells and disposal wells
- Evaluate the data, issues and opportunities with produced water

The overall objective of the initiative is stated to be part of a “long-term journey to improve water management in the state.”

Material information reviewed by the Group included:

- Produced water production in 66 counties and water quality in 29 counties
- The top 40 major water users in the state based on water permits
- Typical water treatment costs for various volumes and treatment levels from eight selected companies

The referenced data and information were stated to have served as the basis to evaluate the cost-effectiveness of alternatives to current produced water disposal methods.

The *Report* states that 10 representative cases were developed and further assessed by coupling a potential produced water user or alternative disposal method to an existing adjoining produced water source. The economics of each case were evaluated so that the Group could “prioritize and make

recommendations.” The cost for the 10 cases are stated to range from 57 cents per barrel of water to more than seven dollars per barrel.

Key Findings of the *Report* included:

- Produced water re-use by the oil and gas industry is the most viable cost-effective alternative due to minimal water treatment needs and low treatment costs.
- A special case of water re-use was evaluated using surplus produced water from the Mississippi Lime play area and was deemed potentially financially competitive (with current disposal methods).
- Evaporation techniques for produced water should be further investigated and developed.
- Water treatment and desalination techniques of produced water should be further investigated and developed if the Group intends to reduce the majority of water produced in the state.

A summary of the *Report's* recommendations include:

- Reduce the challenges to water reuse through targeted regulations and legislation
- Further investigate methods to facilitate the re-use of produced water in oil and gas operations
- Study further the feasibility of transferring Mississippi Lime produced water to the STACK play
- Conduct a more detailed evaluation of evaporation as an alternative to injection
- Identify research needs and potential funding partnerships to further accomplish the Group's goals
- Continue the Group or subgroups to identify opportunities to continue cooperative planning and development of new techniques, infrastructure, water users, legislation and regulatory structure
- Support and build upon the Water for 2060 Advisory Council 2015 energy and industry water use sector water conservation findings and recommendations to the Governor and Legislature

[A link to the *Report* can be found here.](#)