



Produced Water Reuse: Regulatory Considerations

ERRT Committee
May 28, 2020

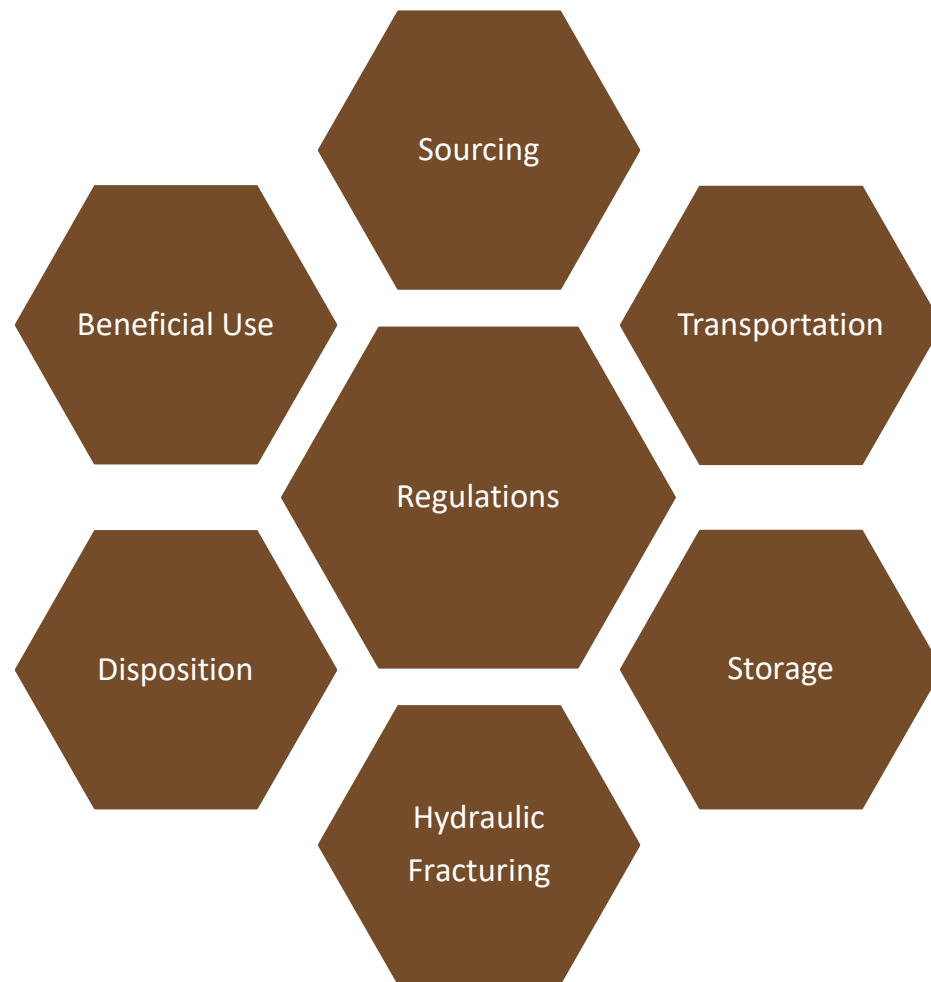
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Regulating the Total Picture for Produced Water

- Regulatory considerations for the oil and gas water cycle.





Regulatory Considerations

- Complex Regulatory framework



- Purpose of Regulations
 - Allow for orderly and efficient development
 - Ensure protection of environment, public health, and safety
- Examples from WY
 - How can industry navigate
 - What can states do to assist

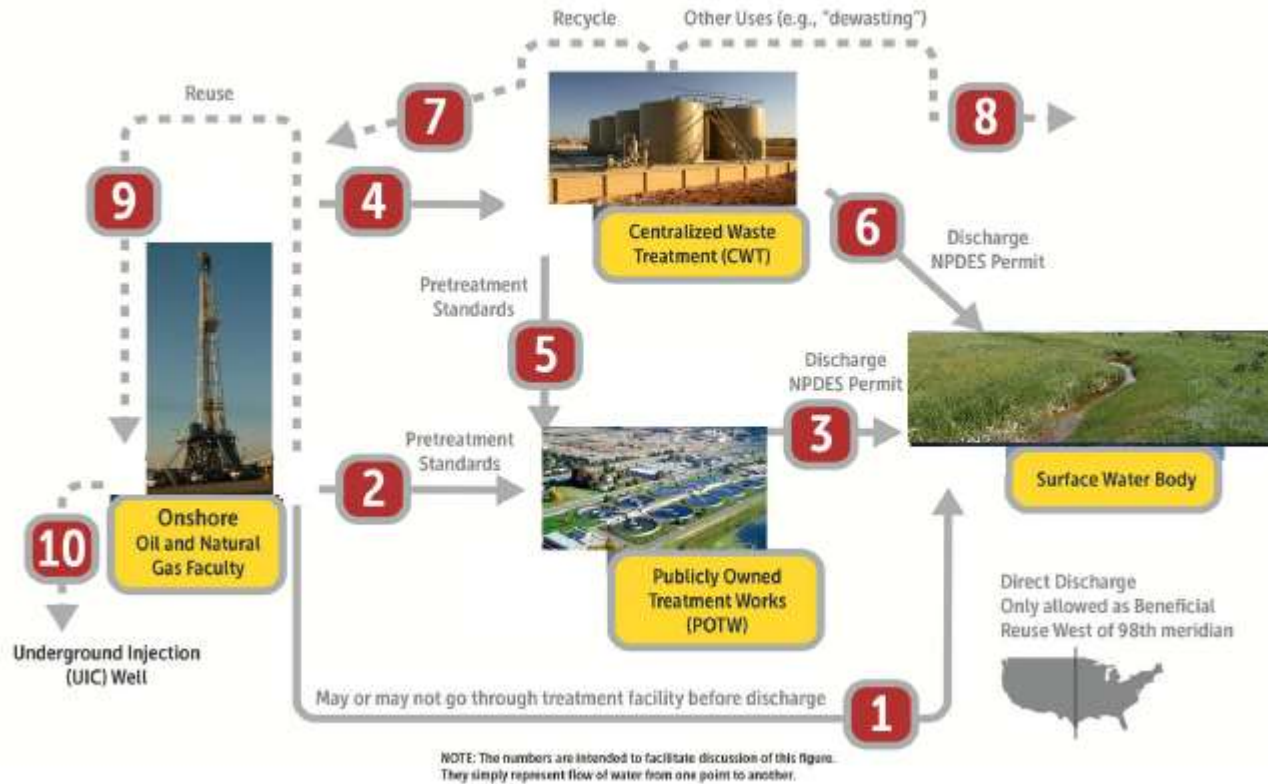


Wyoming Perspective

- Generally the WOGCC is a proponent of water reuse
 - As a regulatory agency we try to remain agnostic regarding methods for produced water management of an individual operator
 - We want operators to decide based on their own business conditions
 - We see water reuse as providing a benefit to the state
 - Reduce fresh water needs
 - Reduce disposal

Regulatory Considerations

WATER OPTIONS



- Regulator Perspective



Regulatory Considerations

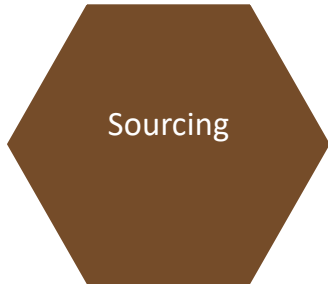
State	Underground Injection Control (Class II)	Land Application	Water Discharge via NPDES	Recycling
New Mexico	NMOCD	NMDOT ¹	USEPA ²	NMOCD
North Dakota	NDIC	NDDoH ³	NDDoH	NDSWC
Oklahoma	OCC	OCC/ ODEQ ⁴	ODEQ	
Pennsylvania	USEPA		PADEP	
Texas	TRRC	TRRC	USEPA ⁵	TRRC
Wyoming	WOGCC	WOGCC ⁶	WDEQ	WDEQ

Agency Acronyms
 NDDoH—North Dakota Department of Health
 NDIC—North Dakota Industrial Commission
 NDSWC—North Dakota State Water Commission
 NMDOT—New Mexico Department of Transportation
 NMED—New Mexico Environment Department
 NMOCD—New Mexico Oil Conservation Division
 OCC—Oklahoma Corporation Commission, Oil and Gas Division
 ODEQ—Oklahoma Department of Environmental Quality
 PADEP—Pennsylvania Department of Environmental Protection
 TCEQ—Texas Commission on Environmental Quality
 TRRC—Railroad Commission of Texas
 USEPA—United States Environmental Protection Agency
 WOGCC—Wyoming Oil and Gas Conservation Commission
 WDEQ—Wyoming Department of Environmental Quality Agency

Specific Provisions:

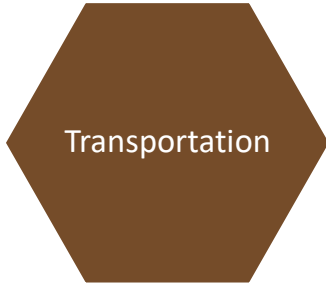
- 1 The NMDOT may have jurisdiction over the use of produced water for road de-icing, <http://www.emnrd.state.nm.us/OCD/education.html#OGProd4>.
- 2 The NMED conducts compliance evaluation inspections on behalf of USEPA and reviews federal permits through certification.
- 3 The NDDoH has guidelines regarding use of certain produced water in dust and ice control. (NDDoH, supra Note 1)
- 4 The OCC regulates land application of produced water.
- 5 The TCEQ is not authorized to issue permits for activities associated with the exploration, development, or production of oil or gas or geothermal resources.
- 6 One-time land spreading on the well site is regulated by WOGCC. Other road spreading, land-spreading and land-farming operations are regulated by WDEQ and require a permit (Chapter 3 Permit Requirements for Treatment of CBM, Oil or Gas Produced Water, Wyoming Department of Environmental Quality, 7-8).

- Industry Perspective



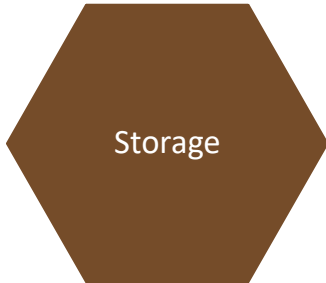
Water Sourcing

- Freshwater
 - Permit to appropriate
 - Restrictions based on availability
 - Drought
 - Groundwater drawdown areas
- Reuse of produced water
 - Liability
 - Treatment requirements
 - Volume
- Third parties may impact sourcing decisions
 - Surface owners
 - Local government



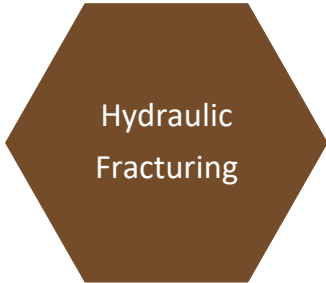
Water Transportation

- Major operational and regulatory challenge
- Trucking vs Piping
 - Industry Considerations
 - Cost
 - Accessibility
 - Third party impacts
 - Spills
 - Local government requirements
 - Regulatory Considerations
 - Third party impacts
 - Spills
 - ROW
 - Regulatory gap



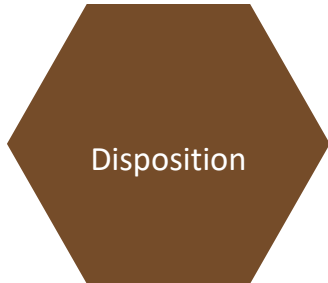
Water Storage

- Impoundment vs AST
 - Some jurisdictions may restrict
 - Wildlife protections
- Impoundments
 - Large capacity
 - Strict construction requirements
 - Potential for liner leaks
 - WY agencies have overlapping permitting
 - Commercial – WDEQ and WSEO
 - Operator – WOGCC and WSEO
 - Air quality
- AST
 - Mobile - don't need critical mass of activity to construct
 - More capacity than frac tanks
 - Secondary containment
 - Overlapping permitting



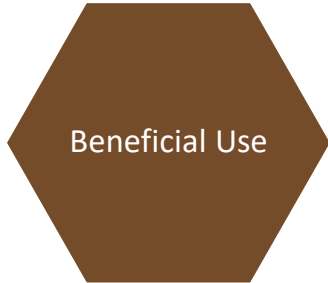
Produced Water Reuse - HF

- All well stimulations require permitting with WOGCC
 - Federal wells also have certain requirements from BLM
- WOGCC requires pre & post notification
 - Water sourcing and chemical disclosure
- If water treatment is required
 - WOGCC permits for single operator within lease/unit/CA
 - WDEQ permits for commercial or centralized
- If produced water is to be reused SEO requires permit to appropriate
 - WSEO considers produced water reuse to be Beneficial reuse



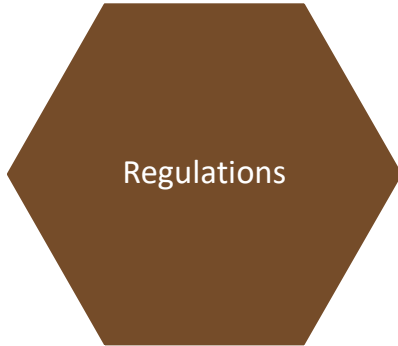
Produced Water Disposition

- Disposal Wells
 - Volume disposed can be reduced by reuse
 - Some areas limited by geology
 - Lack of appropriate permeable formations
 - Induced seismicity
 - Complex, time-consuming permitting
 - WY has new statute
 - Allows commercial Class II wells
 - Produced water reuse and disposal wells are complementary
- Surface discharge – permitted in WY by DEQ
 - Mostly legacy conventional production
- Evaporation
 - Can complement both PW reuse and disposal
 - Common in WY for commercial facilities
 - Permitted by WOGCC for operator on lease/unit/CA
 - Permitted by WDEQ for commercial or centralized



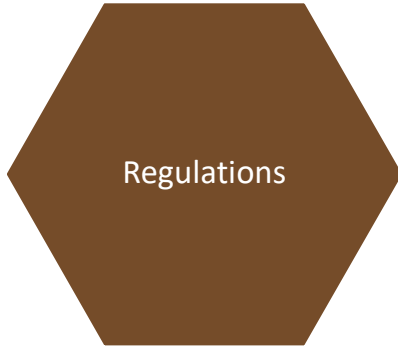
Beneficial Use of Produced Water

- In many places reuse within the industry does not require extensive permitting
 - WY SEO considers produced water reuse Beneficial
 - Requires appropriation for produced water if reused
- Beneficial use outside oil and gas industry most likely does require additional permits
 - Road spreading for snow/ice control
 - In WY certain categories can be used for dust control
 - Irrigation/land spreading



Regulatory Opportunities

- Commercial vs Operator owned
 - Agencies and regulations may be different
 - Midstream companies may facilitate reuse
- Pipelines
 - Gap in regulating produced water gathering lines
 - Lay-Flat – necessary for “last-mile” some agencies don’t allow
- Ownership/Liability
 - Clarify and facilitate transfer
 - OK Produced Water Act



Regulatory Opportunities

- Evaluate whether regulations are meeting purpose
 - allow efficient and orderly development
 - Ensuring protection of environment, public health, and safety
- Update regulations to reflect evolving industry
 - WY updated statute on Commercial Class II disposal wells
 - Allows WOGCC to regulate instead of DEQ as a Class I
- Coordination among all the agencies
 - Agency authorities overlap – need cooperation
 - Communicate the impacts and work through issues with other agencies



Regulatory Need

Regulations

- Regulators need more data on produced water reuse
- Most states do not collect comprehensive data
 - WY gets information related to reuse during well stimulations
 - Have to make some assumptions for reuse otherwise
- Tracking of water
 - Increased need if transferring between operators
- More information = better regulation evaluations = better regulations



Questions

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