Water for Oil & Gas Production: Legal Challenges and Opportunities*

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Abstract

Water is indispensable for oil and gas production. Its use in the process, however, is now under significant scrutiny as a result of environmental and health concerns, as well as unease over the volumes needed to extract oil and gas deposits. Moreover, the availability of water in various parts of the country is now limited due to dwindling local supplies and competing needs. As a result, oil and gas operators face a host of legal challenges - both for securing adequate quantities of water for extraction activities and for disposing of produced water - that could impede further oil and gas production activities. This presentation will discuss water law as it relates to oil and gas production and will consider the major water law-related challenges facing the industry.

References Cited


Websites


http://www.fractracker.org/maps/ny-moratoria/

http://www.rff.org/centers/energy_economics_and_policy/Pages/Shale_Maps.aspx

http://www.twdb.state.tx.us/publications/state_water_plan/2012/2012_SWP.pdf
WATER USE IN OIL & GAS PRODUCTION:
LEGAL CHALLENGES AND OPPORTUNITIES

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Presenter’s notes: Water Demand in Texas: Projected to increase 22% percent b/w 2010 to 2060--From ~18 MAC/year to ~22 MAC/year.
Water Supply in Texas (surface water, groundwater, and reuse water): Projected to decrease ~10% b/w 2010 to 2060--From ~17.0 MAF/year to ~15.3 MAF/year; Groundwater supplies projected to decrease 30%; From ~8 MAF/year to ~5.7 MAC/year. Decrease is primarily due to depletion of the Ogallala Aquifer and mandated reduced withdrawals in Gulf Coast Aquifer to prevent land subsidence.

Same trend across most of the US.
Presenter’s notes: One of the chief reasons for growing demand is population growth, as illustrated by Texas. BUT, that not the sole reason.
OUR WATER DILEMMA

FIGURE 3.6. WATER DEMAND PROJECTIONS BY USE CATEGORY (ACRE-FEET PER YEAR).*

*Water demand projections for the livestock and mining water use categories are similar enough to be indistinguishable at this scale.

Water For Texas: 2012 State Water Plan (p. 137)
http://www.twdb.state.tx.us/publications/state_water_plan/2012/2012_SWP.pdf
Presenter’s notes: In light of the decline of water supplies, water for mining activities can be (and has been increasingly) a controversial topic.
Presenter’s notes: While this is not necessarily a state-wide (or national) issue, it is certainly a local issue.

- Nationally, water use for hydraulic fracturing comprised 0.1–0.8% of total water use by basin
- In 2011, 0.96% of total water sold by TRWD for oil/gas drilling
- **BUT**
  - By 2020, 40% of water in Eagle Ford’s La Salle County, TX is expected to be used in fracturing operations
  - In Upper Trinity Groundwater Conservation District (west of Fort Worth), in the first half of 2011, share of groundwater used in fracturing was 40%, up from 25% in 2010
CONCERNS ABOUT WATER USE IN OIL/GAS INDUSTRY

Competing Water Needs for Increasingly Scarce Fresh Waters
- Growing populations
- Industry & manufacturing
- Agriculture
- The environment
- Mining
CONCERNS ABOUT WATER USE IN OIL/GAS INDUSTRY

- Removal from the hydrologic cycle through “permanent” injection/stORAGE of waste water in deep formations
- Earthquakes

Circles indicate the location of earthquakes that were caused or “likely related” to energy technologies. The larger the circle, the larger the quake. (http://www.scientificamerican.com/article.cfm?id=fracking-can-cause-earthquakes)
CONCERNS ABOUT WATER USE IN OIL/GAS INDUSTRY

- Chemicals used in fracking
- Seepage through formation into aquifers
- Leakages of gases along wellbore
- Inadequate storage, transportation, protection from storms and runoff
- Frac water discharges, spills, and leaks flowing into rivers, recharge zones, etc.

MODERN SHALE GAS DEVELOPMENT IN THE UNITED STATES: A PRIMER

EXHIBIT 35: VOLUMETRIC COMPOSITION OF A FRACTURE FLUID

Source: ALL Consulting based on data from a fracture operation in the Fayetteville Shale, 2008
LOCAL RESPONSES TO CONCERNS

• Cities in Lavaca and DeWitt Counties (Eagle Ford area) citing municipal needs and drought conditions as reasons for not supplying water to oil and gas producers
• August 2011, City of Grand Prairie first TX municipality to ban use of city water for fracking
• August 2011, Arlington, TX cited Chesapeake for permit violation for using Arlington water to frac a well away from drill site
• Fort Worth – Ban on wastewater injection wells
• Denton – Moratorium on new drilling and production permits replaced in January 2013 with rules requiring closed-loop drilling systems and "green" completions
• Flower Mound – Freshwater wells setbacks; floodplain setbacks; pre-drilling, post-drilling, and post-fracturing water analyses; pre-drilling, post-drilling, and periodic soil sampling
LOCAL RESPONSES TO CONCERNS

High Volume Hydrofracking Bans, Moratoria, and Movements for Prohibitions in New York State
Updated February 25, 2013

Fracktracker website: http://www.fracktracker.org/maps/ny-moratoria/
STATE & LOCAL RESPONSES TO CONCERNS

State and Local Bans and Moratoria

- Statewide moratorium (yrs.)
- Local bans and moratoria
- Statewide bans
- No bans or moratoria
- Not in study
- No natural gas wells as of 2010

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Presenter’s notes: Texas is first state to require well-by-well disclosure of all ingredients of fracturing fluids being used anywhere in the state.
FEDERAL RESPONSES TO CONCERNS

US Environmental Protection Agency = Draft Guidance for Oil and Gas Hydraulic Fracturing Activities Using Diesel Fuel (*comments period closed August 2012*)

- Would make "oil and gas hydraulic fracturing operations using diesel fuels as a fracturing fluid, or as a component of a fracturing fluid... subject to UIC Class II permitting requirements"

- Would apply where EPA is the permitting agency under SDWA’s Underground Injection Control program and where diesel fuel is part of the fracturing fluid

- Would obligate EPA program administrators and permit writers to apply guidance going forward in their permitting of UIC Class II wells

- Final guidance document expected sometime in 2013
FEDERAL RESPONSES TO CONCERNS

US Department of Interior (BLM)

- May 2012 = Issued Draft Rule for Hydraulic Fracturing on Public and Indian Lands
- January 2013 = Withdrew draft and announced it would redraft the proposed draft rule
- Unpublished new draft now circulating on the Internet (http://www.eenews.net/assets/2013/02/08/document_ew_01.pdf)
  - Require public disclosure of fracturing chemicals (after completing fracturing operations) but allow reporting through Fracfocus.org
  - Well-bore integrity assurance requirements to verify that fluids used do not escape during fracturing operations
  - Requirements for oil and gas operators to have a water management plan for handling fracturing fluids that flow back to the surface
FEDERAL RESPONSES TO CONCERNS

US Environmental Protection Agency = Study of the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources:

- Studying impact of fracking on drinking water at 5 stages of the fracking process
- Studying impacts of poor well construction and the potential hazards posed by nearby wells, natural fractures and the toxicity of chemicals used in the process
- Completion scheduled for late 2014
US Securities and Exchange Commission =
Requesting confidential disclosures from oil/gas companies of information about fracing fluids to ensure companies inform investors about risks the company may face related to its operations. Questions include: which chemicals the operator injects into the ground, what operators are doing to minimize water use, and what steps they are taking to minimize water use and environmental impacts. Also, the SEC is investigating whether operators are overstating the long term productivity of their natural gas wells.
Presenter’s notes: Exemptions under Energy Policy Act of 2005. UIC Program regulates the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal.
CURRENT LEGAL ENVIRONMENT FOR WATER USE IN OIL/GAS DEVELOPMENT

State Laws

- Subject to various state and municipal laws regulating water allocation and quality
  - Water rights permitting
  - Well spacing and design criteria
  - Wastewater disposal rules
- At least 16 states that have adopted or are considering fracking fluid disclosure laws (AR, CA, CO, LA, MA, MD, MI, MT, ND, NM, NY, OH, OK, PA, TX, & WY)
- Common Law
  - Nuisance
  - Subsurface Trespass
FUTURE OF WATER USE IN OIL/GAS DEVELOPMENT

**Regulations**
- **Federal**
  - Environment Protection Agency
  - Department of Interior
  - Efforts to remove SDWA/CWA exemptions
- **State**
  - Disclosure laws
  - Recycling requirements
  - Earthquakes?

**Lawsuits**
- Cases claiming water contamination and health injuries from fracing activities
- Cases related to water contamination filed against various state and federal agencies claiming failure to follow procedure and/or enforce existing rules
FUTURE OF WATER USE IN OIL/GAS DEVELOPMENT: CHALLENGES AND OPPORTUNITIES

Frac Water Recycling

Improved Fracing Technology
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