



Wyoming Water Quality Update: Hydraulic Fracturing

Western States Water Council
Water Quality Committee Meeting
Casper, Wyoming
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State Agency Roles and Responsibilities



- Construction of oil and gas wells regulated by OGCC
- Hydraulic fracturing regulated by OGCC
- Construction of water supply wells regulated by SEO
- Enforcement of groundwater contamination by DEQ
 - Occurs whenever groundwater quality standards are exceeded





DEQ Roles and Responsibilities: Oilfield Waste Management



- ◆ Commercial Oilfield Waste
 - Disposal Ponds
 - Injection Wells
- ◆ Non-commercial Oilfield Waste:
 - Disposal into POTWs
 - Land application



Permitting, Compliance, and Monitoring Requirements



Commercial Oilfield Waste Disposal Ponds (30 statewide)

- Siting restrictions
- Construction requirements (lining)
- Reclamation Bonding Required





Permitting, Compliance, and Monitoring Requirements



- ◆ Commercial Oilfield Waste Disposal Injection Wells
(22 statewide Class I UIC)
 - Construction requirements (casing/cement)
 - Restricted to injection into non-USDWs or 'Exempted' USDWs
 - Reclamation Bonding Required





Permitting, Compliance, and Monitoring Requirements



- ◆ POTWs
 - Discharge limits
 - Construction requirements
 - Reporting requirements





DEQ Roles and Responsibilities: Oilfield Practices



- ◆ Storm Water Runoff Control
- ◆ Spill Response and Reporting



DEQ Roles and Responsibilities



◆ Construction Storm Water Permit Requirements

- Erosion Control
- Spill Containment
- Reclamation
 - Inspections





DEQ Roles and Responsibilities



- ◆ Spill Response and Reporting Regulations
 - Inspections of spill sites
 - Corrective Action Oversight (Voluntary Remediation Program) for Groundwater Contamination Sites
 - Respond to Citizen Complaints
 - Coordination with OGCC
 - Inspections, Sample collection



Hydraulic Fracturing Issues in Wyoming



- ◆ Public Interest and Concerns: Potential for Groundwater Contamination
 - Pavillion, WY (2006)

 - No conclusive evidence to date that groundwater has been impacted due to hydraulic fracturing....



State of Wyoming Responses to Concerns



- ◆ Pavillion Investigation (DEQ, 2006 - Present)
- ◆ Requirement for O&G operators to provide information on chemical composition of hydraulic fracturing fluids (OGCC, 2010)
- ◆ Development of recommended groundwater sampling guidelines for homeowners (DEQ, 2010)
- ◆ Moratorium on groundwater withdrawals (SEO, 2012)



State of Wyoming Responses to Concerns



- ◆ Pavillion: Legislative financing for alternative drinking water supplies (2012)
- ◆ Requirements for 'Baseline' sampling prior to O&G development (Current, 2013)



State of Wyoming Responses to Concerns



- ◆ Governor's Energy Strategy Initiatives (2013, All water management agencies)
 - DEQ: Development of unified, electronic groundwater data management system – electronic data reporting
 - State GW Committee: Water Management Planning
 - Others: Options and alternatives for produced water treatment, beneficial use, and re-use.



Pavillion, WY



- ◆ EPA withdrawal of Peer Group review of 2011 Draft Pavillion Groundwater Investigation Report
- ◆ State of WY (DEQ and OGCC) take the lead on further investigation
 - Input from EPA, Encana, BLM, Tribal Officials



Pavillion, WY



- ◆ State of WY (DEQ and OGCC) takes the lead on further investigation:
 - Well integrity study of producing wells located near drinking water wells
 - Study of potential and existing impacts to groundwater from historic production and reserve pits
 - Review of water quality and water well conditions in existing drinking water wells
 - Additional groundwater sampling of some drinking water wells



Challenges as we move ahead....



- ◆ Apply best practical science
- ◆ Adhere to the ‘scientific method’
 - ◆ Distinguish between ‘theories’ and ‘conclusions’ based upon ‘hypothesis’ and ‘lines of evidence’
- ◆ Maintain transparency and truthfulness
- ◆ Educate others, including the public and the press
- ◆ Avoid ‘stigmatizing’ landowners and communities with unsubstantiated claims
 - ◆ Significant economic impacts



Thank You

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