

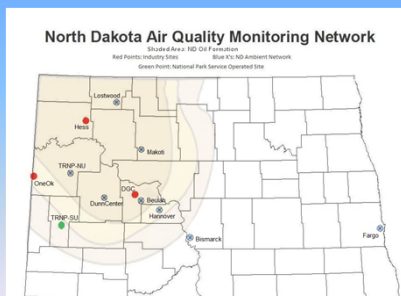
North Dakota Oilfield Development Environmental Challenges

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Background Issues

- Environmental Issues to date not associated with the physical process of Hydraulic Fracturing
- Geology and location of the resource
- Rural Ag to Rural Ag/Industrial – Culture Clash
- Rapid Development
- Infrastructure lagging
- Previous Boom – Bust
- Belief in Community
- Public Perception vs. Science/data

Air Quality



Air Quality

- NAAQS Compliant
- Required Emission Controls to Control VOC's
- Primary Environmental Challenges:
 - Dust
 - Increasing Emissions (Stationary and Mobile)
 - Intermittent Discharges

Waste Management Challenges

- Varied Waste Stream - Waste Segregation
- Declining Municipal Landfill Capacity
- Increase in Special Waste Landfill Requests
- NORM Waste
- Litter

Water Quality



Water Quality Challenges

- NPDES - Seasonal vs. Continuous
- Testing Infrastructure Limits
- Proximity of Waste Generation to Treatment
- Reported Releases
- Unreported Releases and "Midnight" Dumping
- Small Housing "Development"

Municipal Facility Challenges

- Increase in Public Water Supply Systems
- Trained Operators

Environmental Response to Date

- Increase Field Presence
- Rule Modifications – Updates
- Monitoring
- Enforcement Philosophy
- Outreach
 - Local, State and Federal Governmental Agencies
 - Citizen Engagement
 - Industry
 - Enforcement