Managing Oil and Natural Gas Development on U. S. Federal Lands and Federal Mineral Estate

Ground Water Protection Council Annual Forum - 2012

U. S. Department of the Interior
Bureau of Land Management - www.blm.gov
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National System of Public Lands:

- FY 2011 yield $59 billion worth of onshore energy and non-energy
- Extraction of these resources:
  - Boosted the American economy by approximately $126 billion
  - Resulted in nearly $2.7 billion in royalties, approximately half of which was paid to states where the development occurred
As of July 2012:
37 million acres leased
49,000 onshore leases
33,000 inspections performed
90,000 active onshore wells
A game changer for Domestic Energy

- World’s major gas reserves:
  - Qatar 1200 TCF
  - Russia 400 TCF
  - US Marcellus 300 TCF
  - US Haynesville 250 TCF
  - US Eagle Ford (emerging)
  - US Niobrara (emerging)

- Bakken Shale (N.D.)
  - Largest US oil discovery since Alaska at 3.6B bbls

- US is global leader in shale technology & development and in proven gas reserves!
Secretary Salazar has outlined three common-sense measures that we intend to gather feedback on:

- Requiring public disclosure of chemicals used in well stimulations (fracking)
  - With appropriate protections for trade secrets
- Improving assurances on well-bore integrity
- Making sure companies have a water management plan in place for fluids that flow back to the surface
During the last 10 to 15 years, leasing and exploration activities on BLM managed public lands has focused mainly on development of natural gas resources.

90% of all new wells hydraulically fractured as part of the initial completion operations.

Oil development, strong commodity prices drive activity

- Shale plays such as Bakken formation in North Dakota and Montana see much media attention.

Natural Gas development, areas like Marcellus drive activity in the backyards of the public, and the Eastern media (no BLM drilling permits yet for Marcellus targets).
Environmental Concerns

- Protection of groundwater and surface water from contamination.
- Chemicals and additives in the fracturing fluid.
- Large volumes of water needed for hydraulic fracturing.
- Disposal of spent fracturing fluid (or flow-back fluid).
Groundwater and Mineral Zone Protection (zonal isolation)

- Well integrity: Design and construction of the well to ensure isolation in wellbore.
- Surface casing set below useable groundwater and cemented to surface.
- Intermediate and Production casing is cemented to isolate hydrocarbon zones, providing further protection to groundwater.
- Multiple layers of protective steel casing surrounded by cement.
- Cement Bond Logs verify quality of cement job and centralizers placed on the casing assures uniform cementing.
Properly designed and constructed wells are key to preventing fluid migration – HF rule would add emphasis

- Integrity work begins when an Application for a Permit to Drill (APD) is submitted
- Inspections during drilling operations confirm that the approved plan is followed
- Well completion reports and well logs are used to confirm that the well was constructed as approved
- Remediation is required of deficient wells
Questions?