Update from the U.S. Department of Energy

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OIL AND NATURAL GAS CONTINUE TO FUEL THE ECONOMY

Current Administration policy underscores the importance of maximizing the public value of abundant domestic oil and gas resources, while protecting the environment.

Key elements:
- Energy dominance – expanded energy supplies for economic growth and energy security for the U.S. and its allies.
- U.S. technological leadership
- Streamlined regulation, less red tape
- Federal-State collaboration

Energy consumption (Reference case) quadrillion British thermal units

Source: EIA, Annual Energy Outlook 2017
DOE FIELD OBSERVATORY
HYDRAULIC FRACTURING TEST SITE – PERMIAN BASIN

• Field-based hydraulic fracturing research program in West Texas, Permian Basin
• $21 million joint project between DOE, industry, and academia leveraging 11 new horizontal wells and over 400 fracture treatments -- over $100 million in industry investment
• Advanced diagnostics including coring through hydraulically fractured reservoirs
  • 600 feet of whole core from Upper & Middle Wolfcamp
• Insights expected to increase resource recovery, spur new technology development, and improve fracture models
WATER CROSSCUTS DOE’S COLLABORATION WITH STATES

States sharing information and lessons learned

ECOS. The Environmental Council of the States (ECOS) Shale Gas Caucus (SGC) promotes coordination on such matters as data sharing, best practices, community outreach, and lessons learned.

Data management tools for informed regulatory decision making and increased transparency

Risk Based Data Management System. 24 states and the Osage Nation use the Ground Water Protection Council’s Risk Based Data Management System (RBDMS) -- an integrated suite of data management tools -- for managing oil and gas regulatory data. Launched in 1992 with DOE support.

FracFocus.org. Jointly sponsored by the Ground Water Protection Council and Interstate Oil and Gas Compact Commission. 23 states require or allow operators to use this national registry for the public disclosure of chemicals used in hydraulic fracturing. Variations are also used in Europe and Canada. Over 127,700 disclosures submitted in 27 states since 2011. New features facilitate data downloads and analysis by any interested stakeholder.
RBDMS (Risk Based Data Management System) is a suite of integrated data management tools that assist state regulatory agencies in the management and oversight of UIC and oil and gas activities. Built from the bottom-up by the system’s users, RBDMS integrates years of experience in multiple states with data management and program best practices.
RBDMS PRODUCTS

- RBDMS Core (Classic/.Net/Web)
- RBDMS Environmental
- eForms (Electronic Permitting & Reporting)
- RBDMS Data Portal
- Field Inspection
- WellFinder
- Seismic Application

*partial listing
RBDMS PROJECT TIMELINE

1992
RBDMS for injection wells is launched with support from DOE’s Office of Oil & Natural Gas

1997
RBDMS Classic is installed in Alaska, Mississippi, North Dakota, and Nebraska.

1998
RBDMS Environmental is expanded to include GIS, production reporting and tracking, and a field inspecting category.

2001
RBDMS states expand public portal capabilities to assist state and industry data users.

2002
The RBDMS eReport schema for production and injection reporting is completed and API/PIDEX accepts it as a national standard.

2003
RBDMS.Net, coupled with enhanced RBDMS Public Portal and eReport capabilities.

2008
FracFocus.org launched, supplementing initiatives by RBDMS states to ensure effective regulatory oversight and increase public access to data about hydraulic fracturing operations.

2009
eForm goes live, allowing the state’s oil and gas well permit review process to become paperless and allow for public access and comment.

2011
Design of the National Oil and Gas Gateway begins.

2013
WellFinder mobile app is launched in Oklahoma.

2015
Seismic application is launched in the state of Oklahoma. Now 24 states and the Osage Nation use RBDMS tools.

2016
RBDMS Awarded the DOE 100 Award:
best 100 scientific and technological accomplishments the department had funded in its first 23 years.

2017
Funding assistance provided by DOE’s Office of Oil and Natural Gas through the National Energy Technology Laboratory

RBDMS continues to evolve to meet the needs of state regulatory agencies. Outcomes include increased efficiency, more effective regulatory oversight, and increased public transparency.
Next generation California WellSTAR progresses.

- A cloud based application designed to streamline operations, simplify processes, and provide a better way for operators and the state to collaborate, collect and analyze data.
- WellSTAR development and deployment will run through 2019 with various releases, each bringing incremental functionality to internal and external users.
- On August 31, 2017, WellSTAR Release 1.0 went live for internal users.
- [http://www.conservation.ca.gov/dog/for_operators/Pages/OilGas-ForOperators.aspx](http://www.conservation.ca.gov/dog/for_operators/Pages/OilGas-ForOperators.aspx)
• Available in IOS and Android.
• Used by the public, inspectors, emergency responders and others to locate wells in their area and retrieve basic information such as:
  – API (permit) numbers
  – Well type (oil, gas, injection, etc.)
  – Well status (active or plugged)
  – Operator contact information
  – Recent & historical production data
  – Regulatory agency contacts.
• Now containing data for ten states – Alabama, Arkansas, Colorado, Idaho, Kentucky, Mississippi, Nebraska, New York, Oklahoma, West Virginia.
OK SEISMIC APPLICATION: DASHBOARD FEATURES

Summary: Last 60 days*
547 Seismic Events

Graduated Symbols: Blue markers – Wells: Avg Daily Volume (60 days)
Red markers – EQ Events: Magnitude

Well Volume Detail

Volume and EQ Occurrence: Custom Regions

Volume Curve Comparison Charts: Custom Well Sets

EQ Event Detail

Linkages to the States First Induced Seismicity Primer and the soon to be launched Regional Induced Seismicity Collaborative
THE GATEWAY IS RELEASED AS PUBLIC BETA. EIA AND GWPC WELCOME COMMENTS.

FracFocus.org;

- Stronger validation processes to improve data integrity.
- Newly designed forms to improve company and regulatory agency user experiences when completing and checking disclosures.
- Greater user functionality including data download capability.
- Back-end improvements to simplify data transfers to states.

What’s up next?
- Newly designed web site and public interface.