



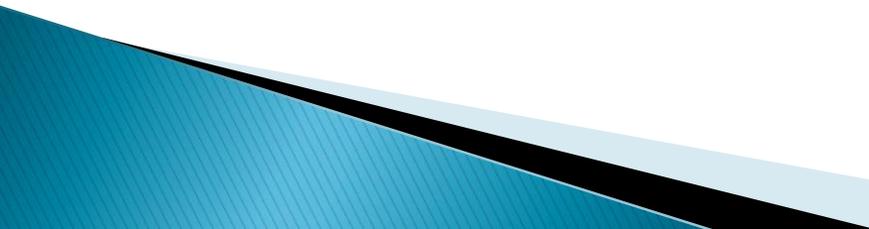
“Risk Based Data Management System (RBDMS) and Cost Effective Regulatory Approaches (CERA) Related to Hydraulic Fracturing and Geologic Sequestration of CO₂”

DOE Grant # DE-FE0000880

Background

- ▶ Risk Based Data Management System for Hydraulic Fracturing (RBDMS HF)
 - ▶ RBDMS and Cost Effective Regulatory Approaches (CERA)
 - ▶ CO₂ Needs Assessment
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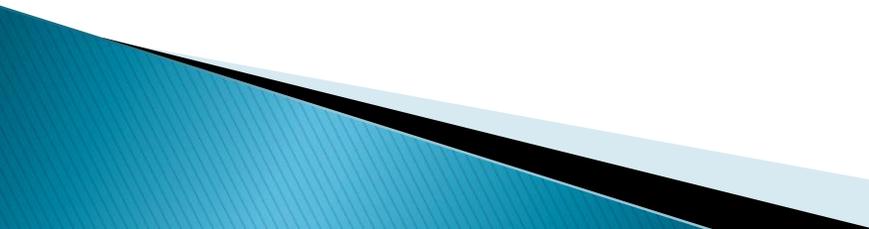
Objective 1 RBDMS HF Module

- ▶ Add new components to RBDMS to allow states to evaluate, track and permit (where necessary) HF operations
 - ▶ Define parameters of HF module by working with RBDMS Steering committee and pilot states including Pennsylvania, New York, and Oklahoma
 - ▶ Add new data fields in RBMDS to track HF activities
 - ▶ Develop an integrated data mining and GIS interface
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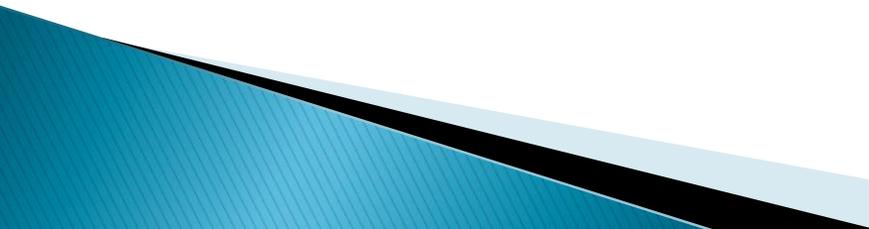
Objective 2: RBDMS Core Development and CERA projects

- ▶ Advance RBDMS Core Development including:
 - Update Wellbore schematic utility
 - Update GIS and data visualization tools
 - Install RBDMS.net in OK and PA
 - Install Classic RBDMS in Illinois
 - Develop needs assessment for Illinois RBDMS Coal
 - Field inspection module
 - Electronic Commerce: Electronic permitting & reporting: CO, AL, NY, PA
 - ePermit now being used in CO, CO also accepts electronic filing of MIT's

Objective 2: RBDMS Core Development and CERA projects cont'd.

- Water Energy Sustainability: Integrate water quality and quantity with RBDMS energy: Pilot states OH, CO, NE, PA, NY
 - Annual RBDMS training and program planning meetings: April 2010 , Florida, October 2010 location to be determined
 - ▶ Develop and implement an On-line BMP catalog of exploration and production practices in numerous states
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Objective 3 (CO₂ Needs Assessment)

- ▶ Survey states to develop criteria for selection of partner/ pilot states (Complete)
 - ▶ Interview industry stakeholders to evaluate needs
 - ▶ Conduct interviews of partner/ pilot states using input from project team and industry stakeholder interviews
 - ▶ Develop a state “Needs Assessment” document, training template, and program implementation plan
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Project Team

- ▶ GWPC Staff (Project administration & support)
 - ▶ Mark Layne, ALL Consulting (Data systems design)
 - ▶ Tom Gillespie, Virtual Engineering Solutions (Data systems design)
 - ▶ Dave Lowther, Coordinate Solutions (GIS design)
 - ▶ Stan Belieu, Nebraska Oil and Gas Commission (State regulation development)
 - ▶ Bill Bryson, Kansas Corporation Commission, Retired (State regulation development)
 - ▶ Scott Anderson, Environmental Defense Fund (Environmental stakeholder input)
 - ▶ John Veil, Argonne National Laboratory (Technical advisor)
 - ▶ Theresa Pugh, American Public Power Association (Industry stakeholder input)
 - ▶ Cathy Reheis-Boyd, Western States Petroleum Association (Industry stakeholder input)*
- ▶ * Invited but not yet confirmed

Project Team Process

- ▶ Topical project team meetings are held via conference call and in association with GWPC meetings:
 - The first HF & CO₂ team meetings were held in Denver (October 2009) in conjunction with the fall RBDMS training
 - The next scheduled project team meetings:
 - Monday, January 25 in conjunction with the GWPC UIC meeting
 - Sunday, April 25 in conjunction with the annual RBDMS training

Schedule (RBDMS HF) This schedule may be changed do to the NY EIS

E - Title: Needs Assessment
Planned Date: February 2010
Verification Method: Needs Assessment Document Finalized and Meets all requirements stated in Subtask 2.4

F - Title: Data Structure
Planned Date: April 2010
Verification Method: Data Structure incorporates all PAC identified needs

G - Title: Final Release of Prototype Results
Planned Date: October 2010
Verification Method: Final Release has been tested and is ready to implement

H - Title: User Assistance
Planned Date: December 2010
Verification Method: Telephone help desk and VPN support initiated



Schedule RBDMS and CERA

- A - Title: Final GIS Module
Planned Date: December 2010
Verification Method: Updated GIS Module Installed and Tested by at least 2 states
- B - Title: Incorporation of .NET Technology
Planned Date: MS, March 2010, OK December 2010, OH, June 2010, PA February 2011
Verification Method: .NET applications match business rules in OK, PA , OH , and MS or other states as determined by the PAC
- C - Title: RBDMS Inspection Module
Planned Date: MS February 2010, OK, August 2010, NE February 2011
Verification Method: The application integrates RBDMS database information with a detached GIS system usable in the field with or without Internet access. Install in OK, MS, and NE.
- D - Title: BMP Catalog
Planned Date: August 10, 2011
Verification Method: Complete BMP Catalog Available Online

Schedule (CO₂ Needs Assessment)

I - Title:	Complete survey of state agencies
Planned Date:	November 30, 2009
Verification Method:	Review survey responses
J - Title:	Conduct and analyze state follow-up interviews
Planned Date:	January 15, 2010 (Revised to March 2010 to allow for stakeholder interviews)
Verification Method:	Review interview documentation
K - Title:	Prepare Draft Needs Assessment Document
Planned Date:	March 15, 2010 (Revised to May 2010 due to shift in state interview process)
Verification Method:	Receipt of reviewers comments
L - Title:	Submit Final Needs Assessment Document to USDOE
Planned Date:	April 30, 2010 (Revised to July 2010 due to shift in draft document preparation)
Verification Method:	Notice of receipt from USDOE
M – Title:	Prepare Regulatory Implementation Plan
Planned Date:	October 15, 2010
Verification Method:	Receipt of reviewers comments
N – Title:	Submit Final Regulatory Implementation Plan to USDOE
Planned Date:	January 30, 2011
Verification Method:	Notice of receipt from USDOE

Tasks

TASK
1.0 – Project Management and Planning
2.0 - Hydraulic Fracturing and CO ₂ Geo-sequestration Parameter Determination
3.0 – Design and Develop RBDMS HF
4.0 – Programming and Development
5.0 – Release of Prototype Results
6.0 – Provide Final Release Services
7.0 – RBDMS Core Development
8.0 – Electronic Commerce
9 – Water-Energy Sustainability
10.0 - Cost Effective Regulatory Approach / E&P BMP Catalog
11.0 - CO ₂ Geo-Sequestration Parameter Determination
12.0 – Program Management Template
13.0 – Technology Transfer

Deliverables

1. Final needs assessment documents for Hydrofrac and CO₂ modules including use cases for base module.
2. Workplan for development of the hydrofrac module
3. Report summarizing the proposed CO₂ module
4. Annual Report detailing significant accomplishments
5. RBDMS modules to be posted on the GWPC RBDMS Sharepoint site and made available for downloading:
 1. RBDMS.net
 2. RBDMS ePermit
 3. RBDMS eReport
 4. RBDMS hydraulic fracturing
6. State needs assessment document for regulation of CO₂ geosequestration
7. On-line state BMP catalog of exploration and production practices

Benefits and Impacts to Industry

- ▶ Improved understanding of state regulatory processes for permitting CO₂ geosequestration projects
 - ▶ Increased ability to submit well data electronically relative to hydraulic fracturing
 - ▶ Access to a training framework for technical and regulatory needs
 - ▶ Additional support for states to acquire “Primacy”; which improves permitting efficiency
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