USEPA
Office of Ground Water and Drinking Water
UIC Program Update

Ann Codrington, Acting Director DWPD

Interstate Oil and Gas Compact Commission

Tucson, Arizona

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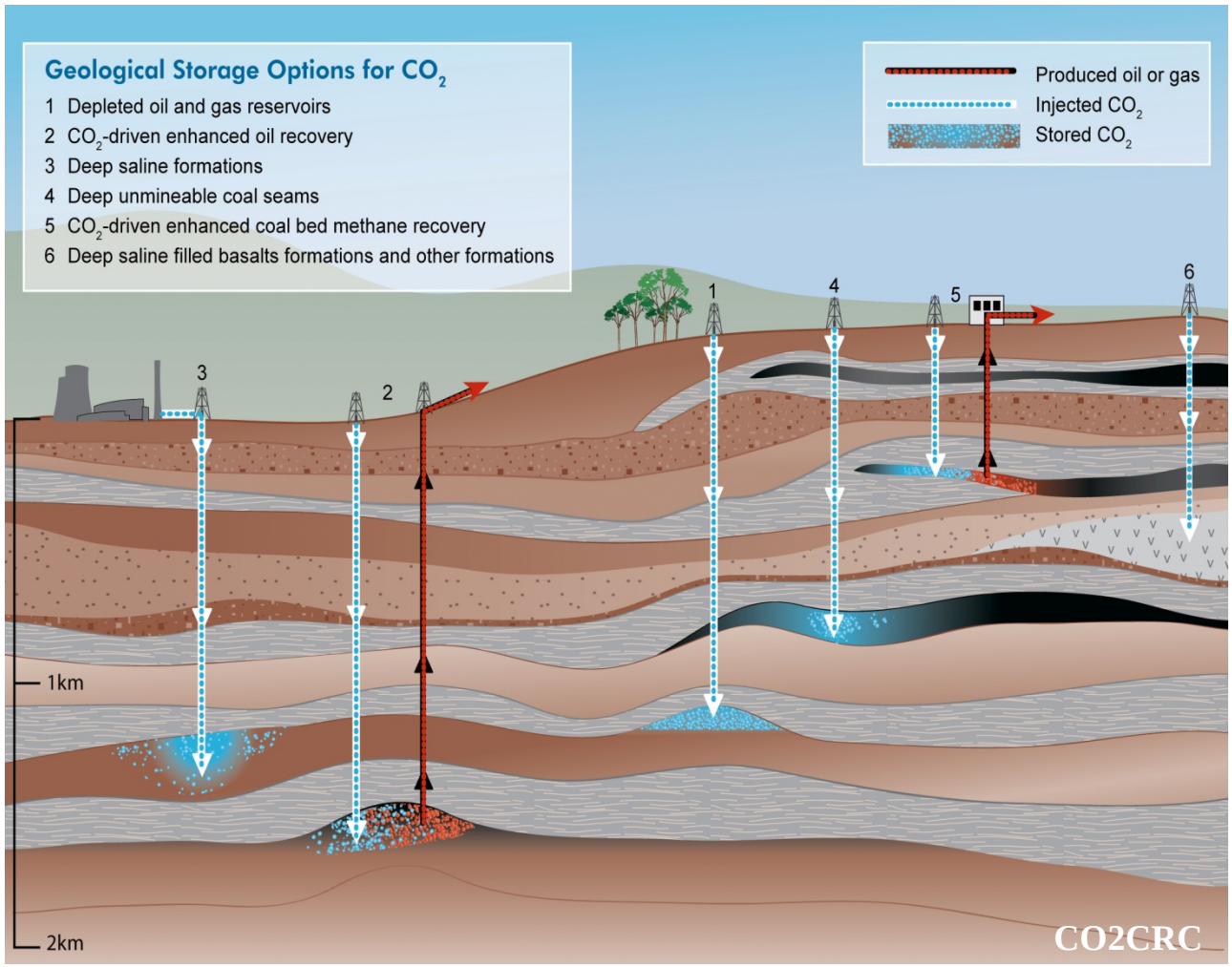
Presentation Topics

- Geologic Sequestration and EPA's Class VI Rulemaking Efforts
- Hydraulic Fracturing Study

Drinking Water Program Focus

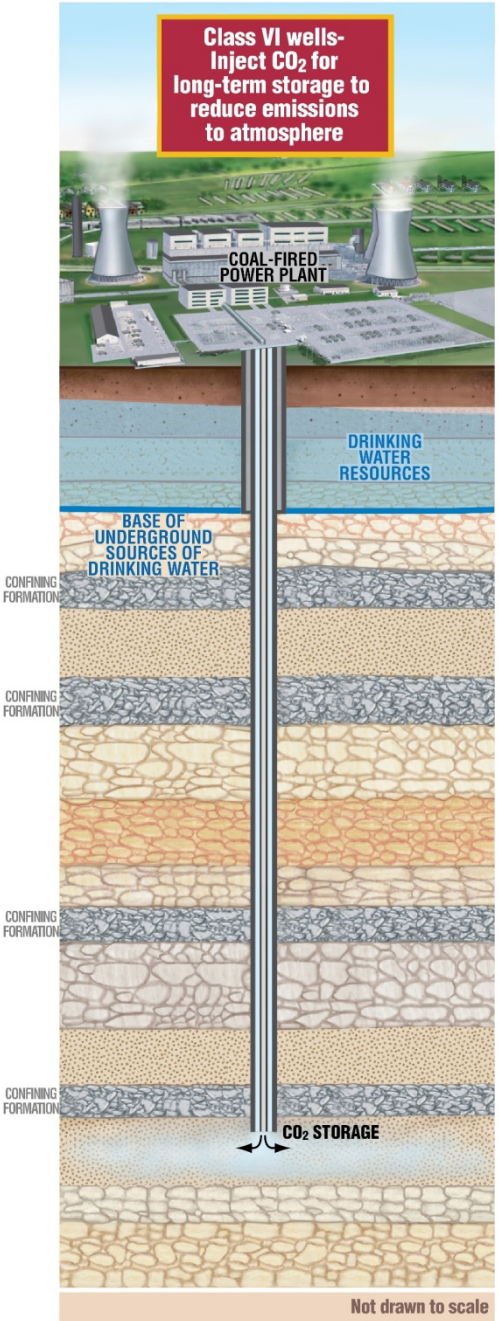
- Ensure high quality water is available to provide for drinking water needs
- Prevent contamination and preserve existing sources of drinking water
- Provide safe drinking water to those served by public water systems

Geologic Sequestration



Carbon Capture and Storage (CCS): At a Glance

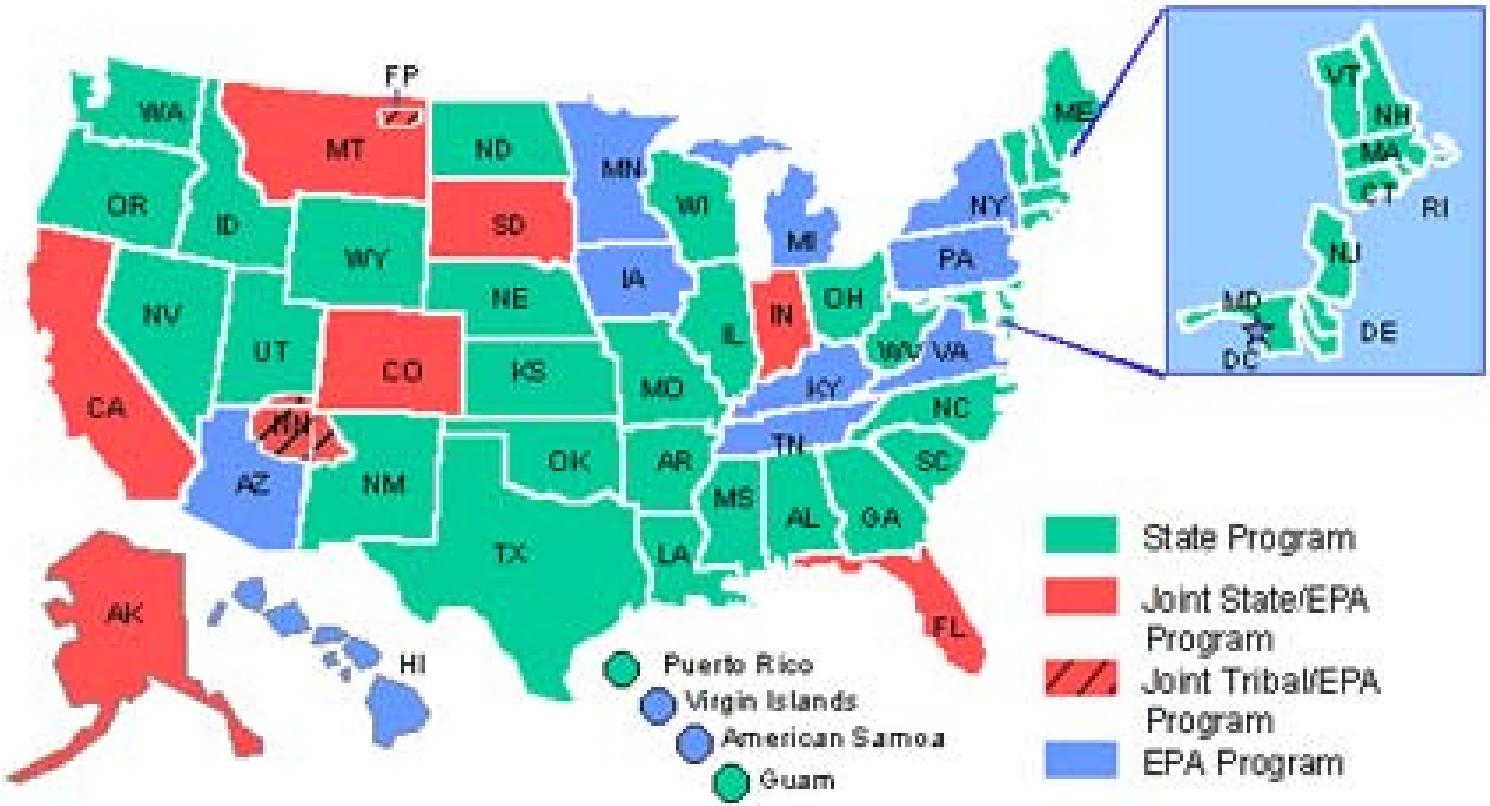
- US storage capacity is significant
- CCS is a major component of US climate policy
- EPA is working closely with :
  - Department of Energy (DOE)
  - State co-regulators
  - Environmental groups, industry and other stakeholders
- Critical to the Underground Injection Control (UIC) program effort is :
  - Protecting underground sources of drinking water
  - Clarifying key questions and data gaps
  - Ensuring that work is complementary and not duplicative
  - Leveraging resources



SDWA UIC GS Rulemaking

- EPA proposed UIC GS Rule in July, 2008 to create a new class of injection well for geologic sequestration; Class VI
- Rule designed to protect underground sources of drinking water
- Coordinating with other Agency offices, DOE, Advisory Councils, and other stakeholders
- Final UIC rule expected late 2010/early 2011

UIC Program Rule Implementation: Primacy



UIC Program Rule Implementation: Primacy

- UIC Program primary enforcement responsibility (primacy) requirements under ***§§***1421, 1422, and 1425 of the SDWA
- Class VI falls under 1422
  - States should indicate intentions for Class VI primacy so EPA can assist, if necessary, with the application
  - Class VI primacy application period begins with the *Federal Register* publication of the rule
  - States can submit a complete application at any time
  - If a State chooses not to seek primacy, EPA will administer the program on the State's behalf

UIC Program Rule Implementation: GS Guidance Development

- **Guidance Documents Currently Under Development:**
  - Financial Responsibility
  - Public Participation Fact Sheet
  - Site Characterization
  - Area of Review and Corrective Action
  - Well Construction
  - Testing and Monitoring
  - Revision of UICPG #83 for Class V Experimental Technology Wells
  - Project Plan Development
  - Primacy Application and Implementation
  - Class II-VI Transition
  - Recordkeeping, Reporting and Data Management
  - Plugging, Post-Injection Site Care, and Site Closure

UIC Program Implementation: Training Permit Writers

- **Regional workshops being planned:**
  - Designed for co-regulators from Regions and States
  - Exploring potential to coordinate with 2011 GWPC Winter Meeting

- **Tentative schedule:**
  - January 2011 – Denver, Chicago, Dallas (Austin GWPC Meeting)
  - February 2011- Philadelphia, Atlanta, Kansas City
  - Webcast technology available

- **Additional series of focused, technical webcasts:**
  - Spring/Summer 2011
  - Includes details of GS Rule elements
  - Will be open to well owners/operators and the public

Ongoing Research: EPA Drinking Water Research

- Lawrence Berkeley Lab (DOE/EPA funded)
  - CO2 migration into ground water
  - Multiple EPA-ORD labs with LBNL:
    - Developing simplified GS Area of Review modeling programs
    - Evaluating and enhancing geochemical modeling database
    - Biogeochemical effects of CO2 in the subsurface

- Proposed ORD CO_2 Research for 2008-2013
  - Transport modeling and risk assessment of CO2 leakage from abandoned wells, faults, and well integrity failures
  - Impacts on drinking water sources from carbon capture and storage sites
  - Mechanical Integrity Test methods and modifications for CO_2 injection
  - Science To Achieve Results (STAR) grant research projects

CCS Presidential Task Force

- Background:
  - On February 3, 2010, President Obama established an Interagency Task Force on CCS
  - Composed of 14 Executive Departments and Federal Agencies
  - Co-chaired by the Department of Energy (DOE) and the Environmental Protection Agency (EPA)
- Goals:
  - Propose plan to overcome barriers to widespread, cost-effective deployment of CCS within ten years
  - Bring on line five to ten commercial demonstration projects by 2016
- Key Recommendations:
  - Form a new Federal Agency Roundtable
  - Address Long Term Stewardship issues
  - Clarify Federal requirements via OW, OAR, and OSWER rules
  - Invest in Public Outreach
- Final Report: http://www.whitehouse.gov/administration/eop/ceq/initiatives/ccs

For Further GS Information

- To submit Guidance comments GSRuleGuidanceComments@epa.gov (give title of guidance in email subject line)

- EPA Geologic Sequestration of Carbon Dioxide Website http://www.epa.gov/safewater/uic/wells_sequestration.html

- Rulemaking Docket www.regulations.gov (docket i.d.: EPA-HQ-OW-2008-0390)

Hydraulic Fracturing

EPA's Hydraulic Fracturing (HF) Authorities

- Key water-related regulatory authorities for addressing impacts of fracturing and shale gas production include the following:

- **Clean Water Act** (CWA)
  - Effluent Limitation Guidelines / Water Quality Criteria
  - NPDES permits

- **Safe Drinking Water Act** (SDWA)
  - Underground Injection Control (UIC) regulations for post-use disposal of fracturing fluids
  - UIC regulations for fracturing with diesel fuel

- There are other acts that ***may*** apply including the Clean Air Act (CAA), and the Resource Conservation and Recovery Act (RCRA)

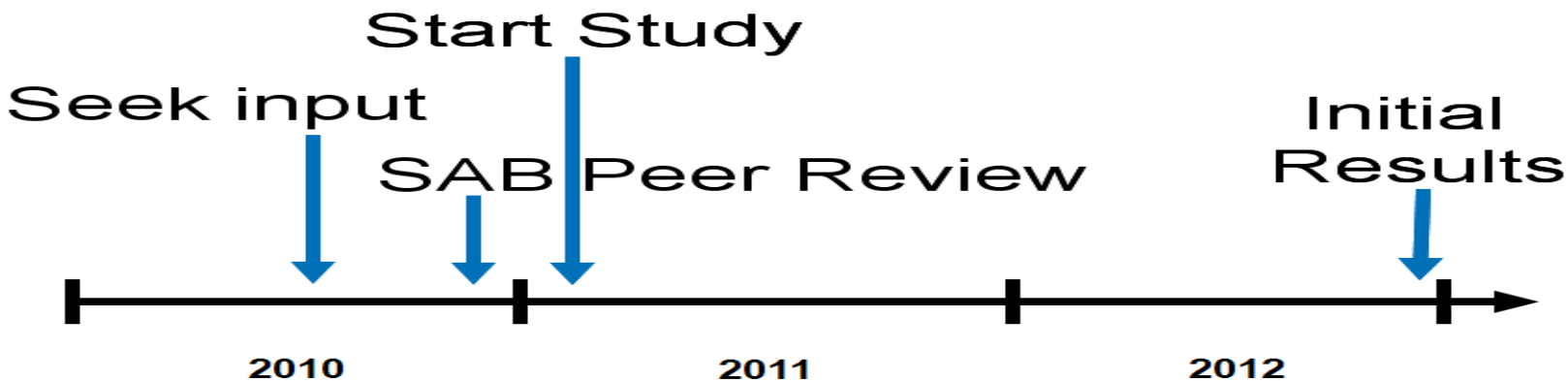
Use of Diesel for Hydraulic Fracturing under the SDWA

SDWA (as amended by 2005 Energy Policy Act) Section 1421(d)(1)(B)

The term "underground injection" excludes:

- (i) the underground injection of natural gas for purposes of storage; and
- (ii) the underground injection of fluids or propping agents **(other than diesel fuels)** pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities.

Hydraulic Fracturing: Study Timeline



Public Meetings on EPA's Study of Hydraulic Fracturing

	Speakers	Attendees
Fort Worth, TX	83	463
Denver, CO	48	159
Canonsburg, PA	94	967
Binghamton, NY	400	1215

Stakeholder Input on EPA's Study

- What should be our highest priorities?
- Where are the gaps in current knowledge?
- Are there data and information we should know about?
- Where do you recommend we conduct our case studies?

What Did We Hear?

- Focus on water
- Focus on air and other impacts
- Conduct a comprehensive analysis
- Conduct a narrow analysis
- Study cumulative impacts
- Study chemical composition of chemical compounds, flowback, and produced water
- Study water use
- Conduct case studies

Summary

- Natural gas is a critical source of energy for the U.S.
- EPA is aware of health and environmental concerns and takes these concerns seriously
- Natural gas exploration must be done in a manner that is protective of human health and the environment

More Information

Science Advisory Board Website

- The next opportunities for public comment on the HF Study will be part of the peer review process
- Website: www.epa.gov/sab

ORD Docket for HF Study

- The docket for the HF Study contains public comments received during the 2010 stakeholder events
- <Website>

EPA Hydraulic Fracturing Website

- Study: www.epa.gov/hydraulicfracturing
- Meetings and Outreach: http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/wells_hydroout.cfm

THANK YOU!