



Geologic Sequestration Rule Implementation: *Class VI Permitting and GHG Reporting*

Mary Rose (Molly) Bayer
U.S. Environmental Protection Agency
Office of Ground Water and Drinking Water
August 21, 2013



Ten Years

Evaluation of existing statutes and regulatory frameworks

Class VI Rule Implementation

2003

2007

2008

2009

2010

2013

Class V Guidance

Proposed Rule

Notice of Data Availability

Final Rule



Class VI Rule Background

Considerations for GS

- Large Volumes
- Buoyancy
- Viscosity (Mobility)
- Corrosivity



UIC Program Elements

- Site Characterization
- Area of Review (AoR)
- Well Construction
- Well Operation
- Site Monitoring
- Post-Injection Site Care
- Public Participation
- Financial Responsibility
- Site Closure

New well class established:
Class VI



Class VI Guidance

- Finalized (2012-2013):
 - Site Characterization
 - Area of Review Evaluation and Corrective Action
 - Testing and Monitoring
 - Project Plan Development
 - Class VI Injection Well Construction
- Finalized (2011):
 - Financial Responsibility



Class VI Guidance

- Public comment period closed (2013):
 - Reporting, Recordkeeping and Data Management for Owners or Operators
 - Reporting, Recordkeeping and Data Management for Permitting Authorities
 - Well Plugging, Post-Injection Site Care, and Site Closure
- Coming soon for public comment (2013):
 - Class II-Class VI Transition
 - Injection Depth Waivers



Class VI Primacy

- As of September 7, 2011
 - EPA directly implements the Class VI Program in all States, Tribes, and Territories
- States may apply for Class VI primacy at any time
 - States without § 1422 primacy must apply to implement a new § 1422 Program
 - States with § 1422 primacy for Classes I, II, III and V, must submit a program revision to add Class VI
- State primacy applications
 - North Dakota application submitted in June 2013
 - 30 day comment period open through September 8, 2013
- The final Class VI Primacy Application Manual is anticipated to be posted this fall

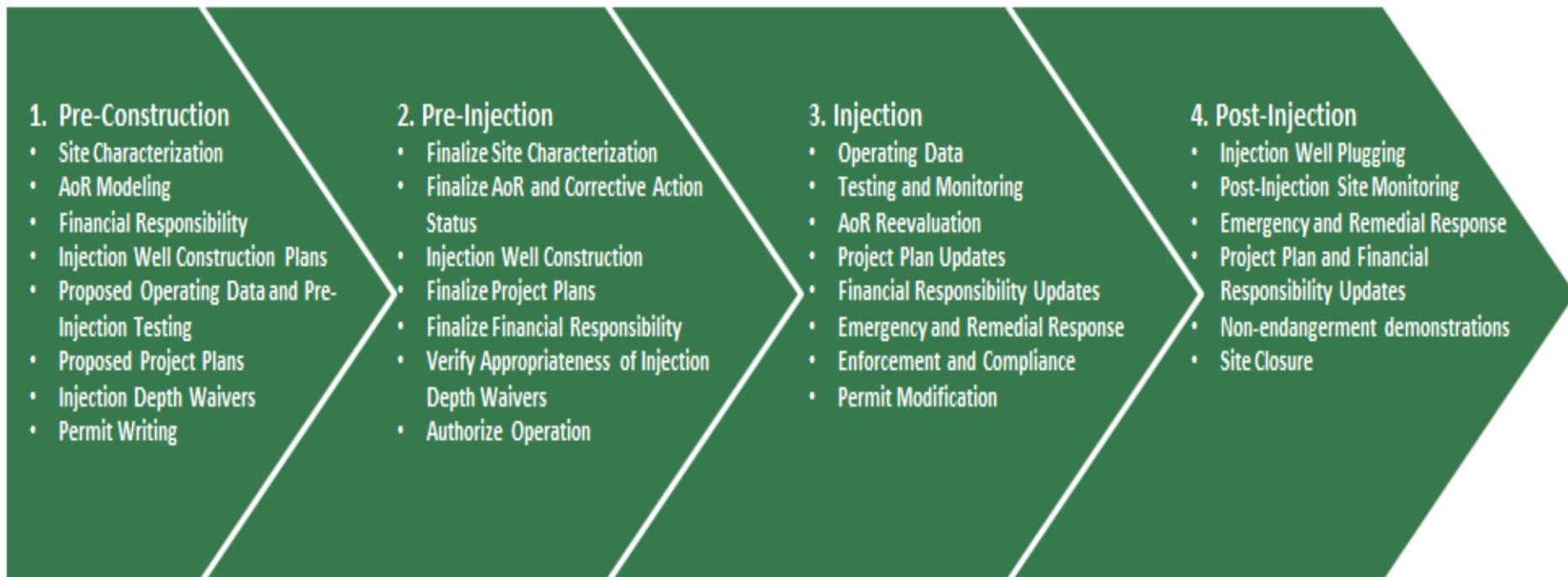


Class VI Permitting

- EPA Region 5: Permit Applications
 - Archer Daniels Midland: Decatur, Illinois
 - Proposed 4.75 million tons of CO₂ over 5 year (2 Class VI applications)
 - FutureGen Alliance 2.0: Morgan County, Illinois
 - Proposed 22 million tons of CO₂ over 20 years (4 Class VI applications)
- Other EPA Regions: Additional projects in development and applications anticipated
 - Region 7
 - Region 8



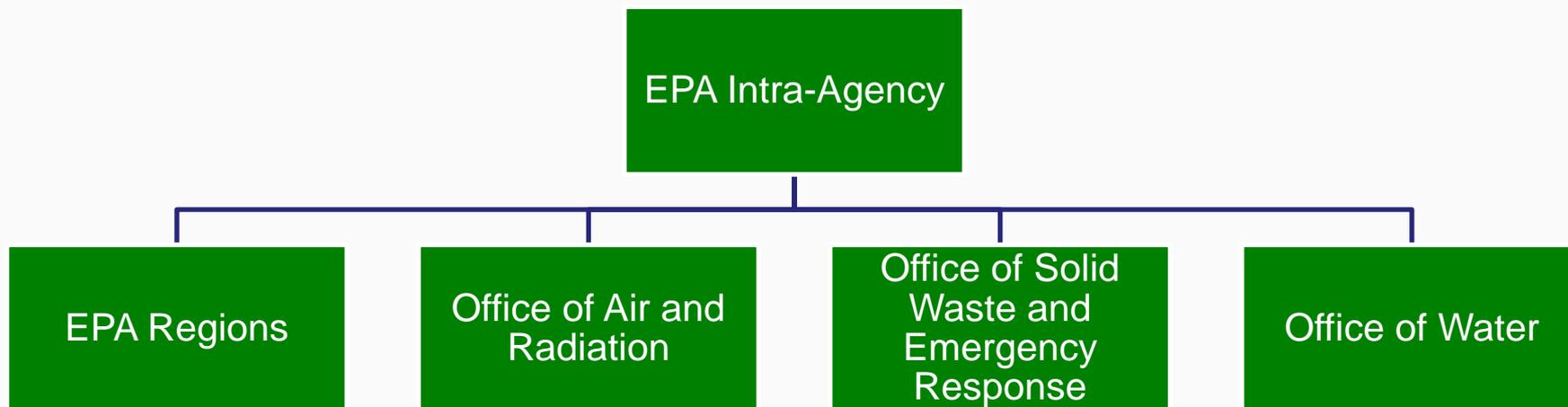
Class VI Permitting Process



- Iterative and flexible
- Accommodates new information and reduces uncertainty
- *A new process for everyone*



Coordination on CCS and CCUS





Coordination on CCS and CCUS

Office of Air and Radiation

- Subpart UU of the greenhouse gas reporting rule:
Facilities that receive CO₂ for injection underground
 - EPA has two years of data from facilities subject to Subpart UU
 - RY2011 data was published on-line in January 2013
 - RY2012 data has just been received and is undergoing verification
- Subpart RR of the greenhouse gas reporting rule:
Facilities conducting GS of CO₂
 - Class II (“opt-ins”) or Class VI wells
 - No facilities currently reporting (i.e., no MRV plans)
 - R&D exemptions for four projects have been submitted and approved



Coordination on CCS and CCUS

Office of Solid Waste and Emergency Response

- Proposed: August 2011
 - Conditional exclusion of CO₂ streams injected for geologic sequestration from the definition of hazardous waste provided the CO₂ streams meet specific conditions
- Final Rule: Under Interagency review at the Office of Management and Budget



Coordination on CCS and CCUS

Federal Partners

- Department of Energy
 - Pacific Northwest National Laboratory (PNNL)
 - Lawrence Berkeley National Laboratory (LBNL)
- Department of Interior (i.e., USGS; BLM; BOEM)
- CCS Task Force Participants
- Internal Revenue Service

State-Level Partners

- States
- Ground Water Protection Council
- Interstate Oil and Gas Compact Commission
- Association of American State Geologists

Others

- Non-governmental and environmental organizations
- Academia
- Public stakeholders



Opportunities for Stakeholder Involvement

Public comment on draft guidance documents

Public comment during the UIC Class VI Program primacy review and approval rulemaking(s)

Review and comment on draft Class VI permits

Review of publically available information from the GHG Program

National meetings, conferences and webinars



Lessons Learned

- Research and knowledge building are ongoing and inform science based decision-making
- Communication is critical
 - Between EPA and owners or operators
 - Among Federal partners and with co-regulators
 - To the public
- Flexibility is needed
 - To accommodate project-specific differences
 - To adapt to evolving technologies



Thank You!

http://water.epa.gov/type/groundwater/uic/wells_sequestration.cfm

<http://www.epa.gov/ghgreporting/reporters/subpart/rr.html>