

**Summary of Issues/Needs from RPSEA EOR/CO₂ Forum
Austin, TX - April 23, 2008**

Wells

- Potential for real-time monitoring and control
- Applications of smart wells, i-fields
 - Unsure of technology applicable to EOR work
- Effective utilization of monitor wells
 - Pressure or composition vs. time
 - Carbon/Oxygen log
 - CO₂ front location

Recovery Factor/Well Life Extension

- How to evaluate (and maximize) sweep efficiency
- Monitoring approaches
 - Seismic
 - 4-D, needs validation
 - Passive
 - Current location of water front
 - Condition of cap rock/seal
 - Need low cost instrumentation and software
 - Need to validate applications
 - Model CO₂ distribution in reservoir
 - Current tools qualitative; need quantitative
 - Drive down cost

Measurement, Monitoring and Verification (MMV)

- Much work has been accomplished, but not directed towards EOR applications
- Determine destination of injected material vs. characterizing remaining hydrocarbons in reservoir
- Past EOR monitoring work focused on:
 - Material balance
 - Chemical disposition
 - Diffusion, etc.
- With natural source, need to monitor CO₂ reservoir changes in situ; this need is specific to EOR.
- Leverage CCP2 results
- Learn from the IEA Weyburn and Rangely experiences.
- Evaluate cap rock seal effectiveness

Capture/Compression/Separation

- Scale and cost
- Separating N₂ from CO₂
 - Cryogenic/membranes

Rulemaking

- Provide input to EPA discussion of DOE Section 1605B provisions regarding voluntary reporting of GHG emissions (Lieberman bill), as well as other potential concerns associated with CO₂ EOR
 - Liability for 300 years
 - Safe Drinking Water Act
 - Ground Water Protection Council
- Provide the technical support that will allow appropriate EOR projects to qualify as CO₂ sequestration
- Support the development of appropriate legal definitions of surface ownership vs. mineral ownership vs. pore space ownership.

Other Topics

- Need for additional data
- Workforce development issues
- Requirements for sequestration in unmineable coal seams, in combination with enhanced gas recovery

Summary Comments

- While it has always been advisable to understand the distribution of subsurface CO₂ in order to optimize EOR projects, any regulatory scheme directed at CO₂ emissions will require accurate tracking of and accounting for CO₂ used in EOR. Previous work has identified many possible approaches, some of which are being evaluated in current pilot sequestration projects. Careful study of past and current EOR projects could yield the data required to make informed decisions regarding the disposition and custody of CO₂ used in EOR projects, as well as its legal treatment as an emission source or a carbon sink.