**Draft Summary of conference call**
**Liability Working Group**
**WRI Carbon Capture and Storage Project**
**6/29/06**

**Project website: http://carboncapture.wri.org**

**Participants on call:**
Sally Benson, Judith Bradbury, Heleen de Coninck, Julio Friedman, Neal Grasso, Kate Larsen, Jeff Logan, Liz Martin, Elizabeth Wilson, Sarah Wade, Karen Utt

**I. Opening Exchange**
Feedback on GHGT-8 conference in Norway, held 19-22 June 2006. Over 1000 participants attended, with significantly expanded presence from industry. Documents are available at: http://www.ghgt8.no

**II. Siting/MMV Working Group Scenarios**
The Siting/MMV working group has completed 3 draft scenarios to stimulate thinking on what's required for CCS project site certification. The 3 scenarios include an EOR application in the Gulf Coast region, a greenfield saline aquifer in the Midwest, and a depleted gas field in the Western states. The scenarios are based on actual field conditions, but specific location names will not be revealed in order to prevent biasing of ongoing and future projects. Additional background material is being gathered before role-playing of the scenarios at a workshop to be held in early September. The scenarios will be acted out and presented to regulators for consideration. Perspectives from the financial community and average citizen will also be gathered. The process will shed light on what additional information is needed, and what safeguards are required to deal with risk.

**III. Review of Liability Working Group Goals**
Our ultimate objective is to produce a set of guidelines that can be used by regulators and policymakers in overseeing CCS projects. Along the way, we will have opportunities to assist specific demonstration and commercial projects, and help to craft pieces of legislation at both the state and federal level. We should actively seek out these opportunities and contribute strategically.

Although we did not discuss this in the conference call, recent developments indicate that it would be a good time to convene a special group of stakeholders to address practical liability in CCS projects. WRI plans to convene a special CCS liability workshop during the week of 25-29 September to consider the issues with Congressional staff, state and federal regulators, industry, NGOs and the research community.

**IV. State Liability Issues**

In order to focus our previous research on liability issues, we thought it would be helpful to narrow our research to a handful of states that best represent a range of regulatory and legal treatment of CO2 injection and its analogs. We decided to frame our research around the three scenarios from the Siting & MMV group (saline, EOR, EGR) so that the work from both groups can eventually be linked to create a comprehensive overview of the range of existing regulatory and technical issues associated with CO2 sequestration.

We chose 3 states for each scenario that span different levels of regulatory oversight as well as regional variability. For each state, there is a list of issues/questions that can be answered by examining existing regulation, case law, analogs, and through conversations with state regulators. Once completed, we will have a matrix that answers the basic questions about how liability is currently addressed in each state based on the type of scenario and that indicates where additional information is necessary.

Volunteers agreed to the following responsibilities:

| CO2-EOR | | | Saline | | | EGR | | |
|---|---|---|---|---|---|---|---|---|
| Texas | California | Wyoming | Illinois | Indiana | Kentucky | California | Michigan | Louisiana |
| Kipp* | Heleen<br>Elizabeth<br>Jeff | Kate<br>Karen | Liz | Judith<br>Sarah F.* | Judith<br>Sarah F.* | Heleen<br>Elizabeth<br>Jeff | Sarah W. | Neal |

* - assigned, but needs confirmation

Volunteers agreed to gather information on each state-specific set of liability issues according to the preliminary set of issues in the matrix (Attachment I). Other issues can be added or deleted to the list if needed. We set a tentative target of the end of August to complete the matrix of information. A mid-course conference call in late July will refocus the effort and confirm progress. This work could contribute substantially to the WRI workshop in late September.

Kipp Coddington could not join us on the call but has promised to provide a memo in mid-July on his findings on potential liabilities related to CO2-EOR. A summary of the bullet points that the memo will address is provided in Attachment II.

**Next Call: Week of 25-30 July. Contact Jeff Logan at (202)729-7689 or jlogan@wri.org with any questions.**

## Attachment I: Template of issues for state liability consideration

| | CO2-EOR | | | Saline | | | EGR | | |
|---|---|---|---|---|---|---|---|---|---|
| | Texas | California | Wyoming | Illinois | Indiana | Kentucky | California | Michigan | Louisiana |
| Regulatory authority (who regulates what) | | | | | | | | | |
| Experience with CO2 injection - existing projects, institutional capacity/resources to regulate | | | | | | | | | |
| Surface liability (damage to agricultural lands, residential, public safety) | | | | | | | | | |
| Subsurface liability (geophysical trespass, hydrocarbon damage, groundwater contamination) | | | | | | | | | |
| Existing well abandonment regulations | | | | | | | | | |
| Existence of insurance/indemnity bonds/fees for plugging and abandonment | | | | | | | | | |
| Accounting linkages (existing CO2 regulations that may address liability directly or indirectly) | | | | | | | | | |
| CO2 liability (state or private treatment) | | | | | | | | | |
| Existing monitoring regulations | | | | | | | | | |

**Attachment II:**

**Summary of CO2 Injection Liability Findings for WRI**
**June 29, 2006**

Follow is a bullet-point summary of our findings regarding potential liabilities related to the injection of CO2 for enhanced oil recovery (primarily using the analog of water injection). We also looked at the broader question of potential liabilities for any type of geologic sequestration of CO2.

There are virtually no cases involving CO2 injection for oil recovery -- those that existed almost exclusively dealt with royalty disputes for oil/gas generated during recovery.

We used Texas as a model. Comparable case law/regulations exist in other States.

- Damage to subsurface freshwater resources (source: TX Railroad Commission regulations on gas/water injection)

- Endangerment to oil, gas, or geothermal resources (source: TX Railroad Commission regulations on gas/water injection)

- Waste of oil/gas due to injection -- due to migration into lands not used for oil/gas production (source: TX Railroad Commission regulations on gas/water injection)

- Escape of injection material to areas outside the injection zone -- in Texas, this is sufficient grounds for denial of an injection permit (source: various)

- Threat of wells as a pathway for other forms of contamination (improper abandonment, improper maintenance, etc.) (source: TX Railroad Commission regulations on gas/water injection)

- Increased risk of seismic activity (source: hypothetical; several scholarly articles where carbon increases pressure on subsurface formations; case law or regulations)

- If CO2 is classified as a waste or hazardous substance, then injection as "storage," "dumping" or "release" would create numerous statutory obligations and liabilities under laws such RCRA, CERLA and their State counterparts (source: statutory analysis of non CO2-laws)

- Releases endangering human health (source: hypothetical -- naturally-occurring CO2 release from African lake caused mass asphyxiation in 1995, often raised as source of concern)

- Releases endangering property (source: hypothetical -- sudden releases of CO2 under subsurface pressure could damage surface property; no or limited case law/regulations)

- Ownership of gas once injected into subsurface – person who injected? Loss of title, etc. (source: hypothetical, save for the new Texas law; no case law)

- Liabilities related to ocean dumping/offshore disposal of "waste" if CO2 is deemed a waste under various international conventions and treaties (sources: scholarly articles – issue remains unresolved)

- Common law tort theories of liability, as have been alleged in cases of underground injection of water (trespass, nuisance, conversion) (sources: numerous for water, none for CO2)

- Takings claims, where a permit issued for injection leads to a potentially compensable taking of a neighboring landowner's property (example source: *Montgrue v. Monsanto,* 249 F.3d 422 – court denied takings claim against Monsanto, as it was not a state actor, but did not reach whether state could have been properly sued)

- Potential products liability for impurities in the CO2 gas stream (impurities may result in subsurface contamination, harmful interactions with oil/gas, etc.) (source: legal reasoning; no case law or regulations)

- Environmental liability for injection of potential impurities into earth constituting disposal of hazardous waste or release of hazardous substance (regardless of whether CO2 is deemed a waste) (source: legal reasoning; no case law or regulations)

- Strict liability where injection/storage of CO2 is considered an ultra hazardous activity (source: legal reasoning; no case law or regulations)

Kipp Coddington
Ryan Van Meter
Alston & Bird