

Insuring the CCUS - CO₂ EOR Energy Complex

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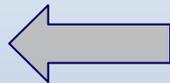
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What is the Role of Insurance?

- Four Phases of Liability:

- Construction
- Operations
- Closure
- Post Closure



Non-traditional Risk (i.e. “Difficult”)

- What Insurance is NOT:

- Financial Guarantee
- Securities Backstop

- Other Potential Uses:

- Single Goal Instruments
- Credit Delivery



What Are The Expected Risks?



- Migration of the gas stream to groundwater, creating carbonic acid upon contact with the water, and potential transmission of soluble minerals and metals in a low level – clean up costs or replacement in kind
- Migration of the gas stream to other mineral stocks subsurface, fouling the private goods – replacement in kind or compensation likely required
- Migration of the gas stream outside the reservoir – general trespass and nuisance
- Migration of the gas stream into basements of other low lying areas – damages only long term low level circumstances – like plant death or – in case of huge catastrophic release – asphyxiation
- Migration of the gas stream to the atmosphere, causing liability for carbon credit loss or tax credit loss – limited by business interruption sub limit for first party; excluded for third party
- Damage to well from gas release – damages – repair to well
- Ground movement damages

Thoughts On Post-Operational Liability



Viewed as a “less-risky” phase of the project, why is it an area of difficulty in regards to assumption of liability?

Time!

- Must be managed using a pre-funded trust or a securities backed solution
- No private market capital can be raised to address this level of uncertainty this far into the future – no private market capital with this tenor has this risk appetite
- Longer tenor = more risk averse

Final Thoughts

- CO2 storage is incidental to the production of oil with regards to EOR. CCS as a mitigation technology is treated quite different.
- From an indemnity perspective, this is a good risk.
- Technology skepticism remains even after 40-years of history.
- Discussions are focusing around needing a better “business model” to speed progression – we agree.

