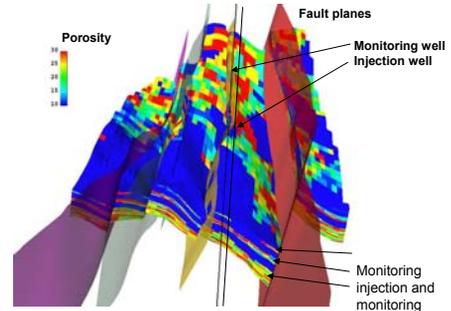


Methods

- Detailed characterization
- Modeling for experiment design
- Small volume, short term, intensive monitoring with multiple methodologies
 - 100 ft well spacing
 - Few week injection
- Initial experiment for region, expect follow-on will be needed

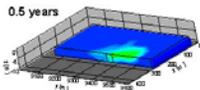


Reservoir Model

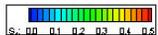
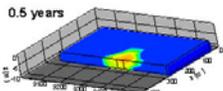


How Modeling and Monitoring will Assess CO₂ Performance

Residual gas saturation of 5%



Residual gas saturation of 30%



- Modeling has identified variables which control CO₂ injection and post injection migration.
 - Measurements made over a short time frame and small distance will confirm the correct value for these variables
 - Better conceptualized and calibrated models will be used to develop larger scale longer time frame injections
- TOUGH2 simulations C. Doughty LBNL

Frio Brine Pilot Status

- Pre-injection characterization – wireline logs, 3-D seismic, core from other Frio reservoirs
- Permitted through Texas Commission for Environmental Quality class 5 well
- Drilling new well May 2004
- Pre-injection baseline core sampling, wireline logging, aqueous geochemistry, cross-well seismic, two well hydrologic testing, surface monitoring
- Inject 3,000 tons refinery CO₂ July-August 2004,
 - Monitor breakthrough with wireline neutron tool and fluid sampling
 - Transient hydrologic testing
- Post-injection wireline logging, aqueous geochemistry, cross-well seismic, surface monitoring

Gulf Coast Carbon Center

- Jackson School initiative
- Industry partners
- Develop economically viable, environmentally effective options for reducing carbon emissions
- 2 year project to develop source-sink aggregates
- Follow on commercially viable field test will seek DOE/international support to reduce risk and extend benefit
- First project likely to be a hydrogen or ethylene oxide plant /EOR or possibly ERG matc



Focus on the Gulf Coast

