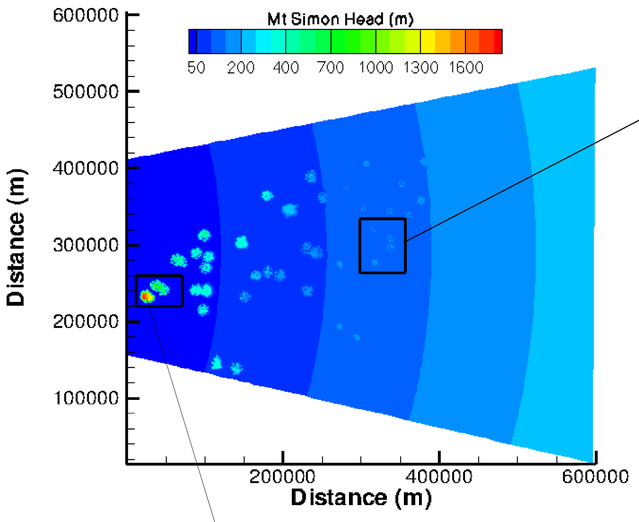
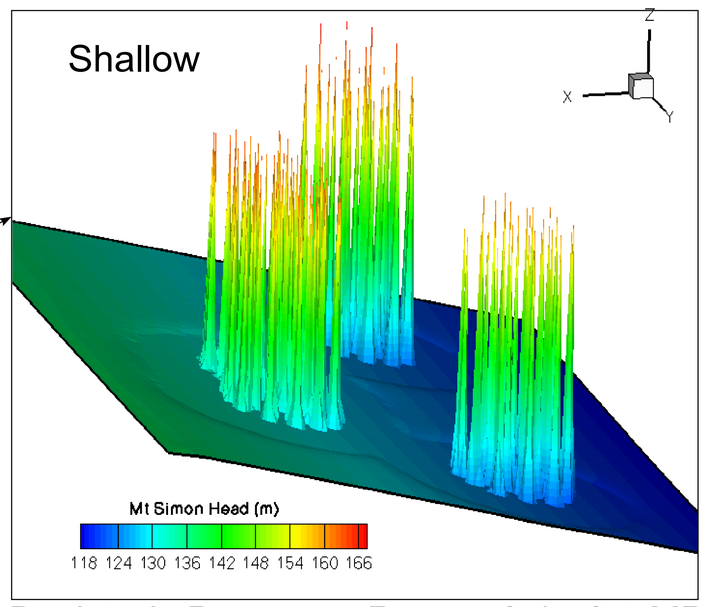
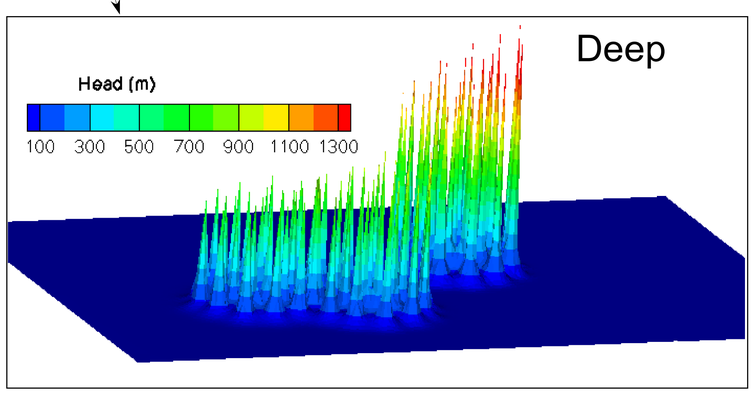
RESULTS

After 100 Years Injection: CO_2 Heads (m)

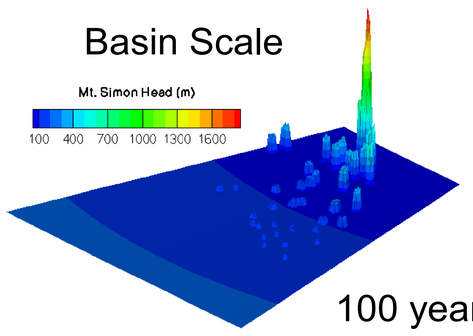




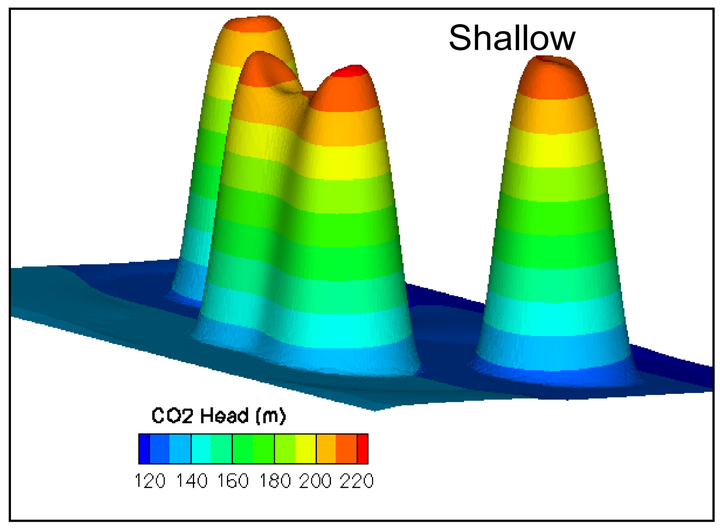
Deviatoric Pressures Range: 0.4 - 0.5 MPa
with some Well-Well Interference

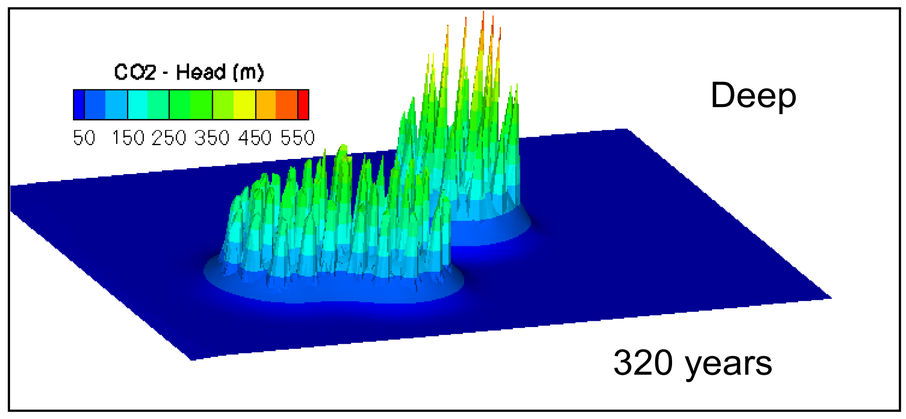


Deviatoric Pressures Range: 4 - 9 MPa
with Little Well-Well Interference

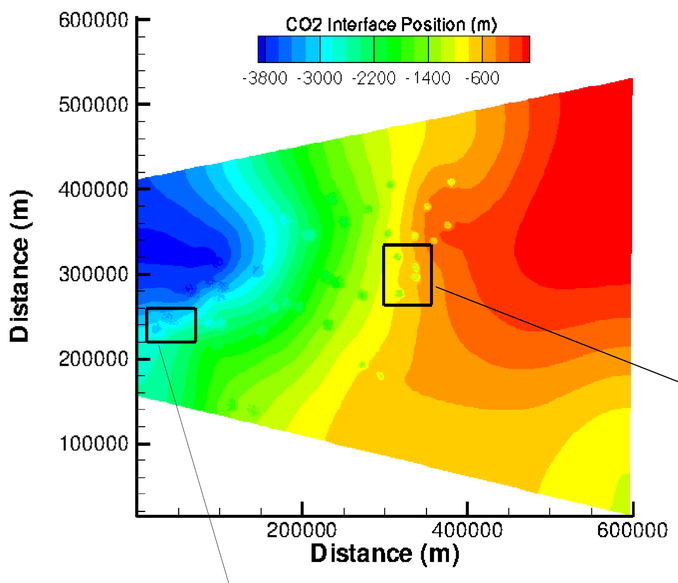


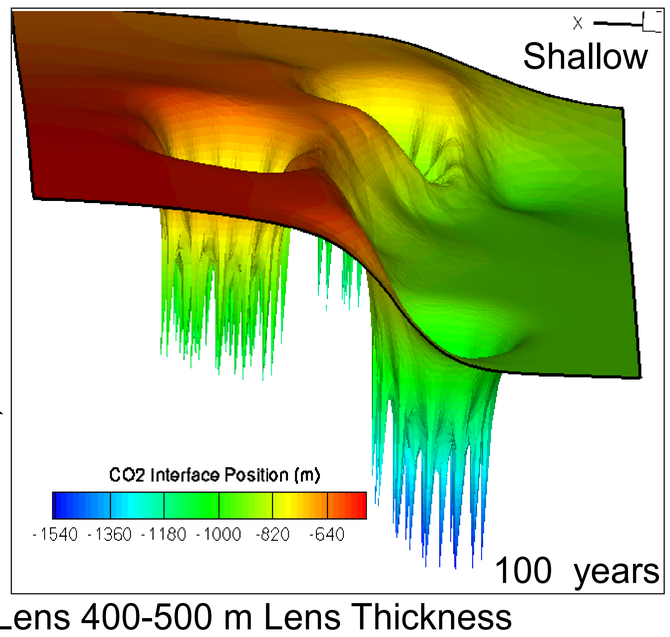
Heads (m) After 220 Years of Shut-in:



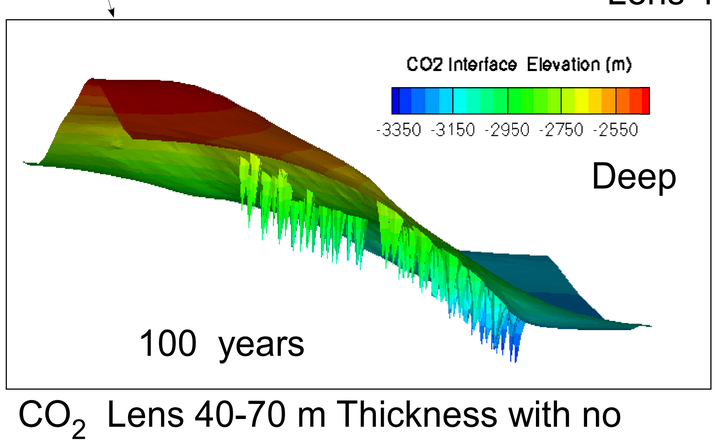


CO_2-Brine Interface Position (m) After 100 Years Injection:



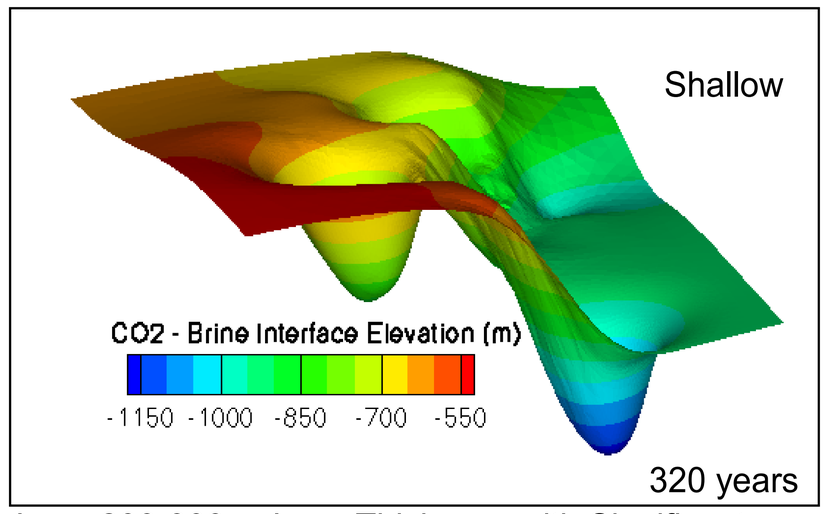


Lens 400-500 m Lens Thickness
with Well-Well Interference

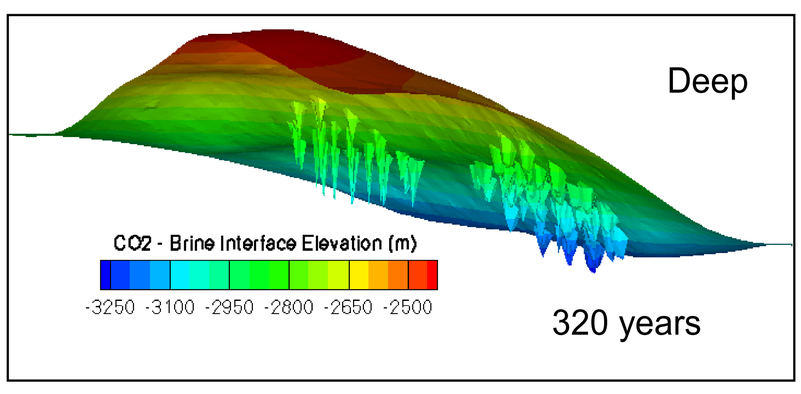


CO_2 Lens 40-70 m Thickness with no
well-well interference

CO_2-Brine Interface Position (m)
After 220 Years Shut-in:



Lens 200-300 m Lens Thickness with Significant
well-well Interference



Lens 40-60 m Lens Thickness

Conclusions of Modeling Exercise:

1) The displacement at the saltwater/freshwater interface due to annual injection of 80 million metric tons of CO_2 are on the order of 10 m/yr.

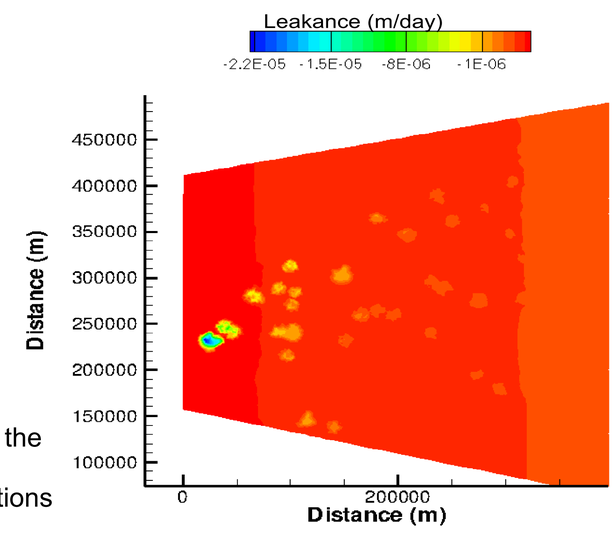
2) Maximum deviatoric pressures (9 MPa) are only about 30% of lithostatic levels in the deepest part of the basin. In shallower levels of Mt Simon, deviatoric pressures are about 0.5 MPa.

3) Because Mt Simon is almost flat, buoyant separate phase migration of CO_2 lens is about 6 m/year. After 200,000 years, most separate phase CO_2 would be sequestered in structural traps. Some would escape.

4) Sharp interface models represent valuable tool for first cut analysis to locate optimal locations to inject CO_2 in cost effective manner.

add basin scale CO2
interface also

After 100 years Injection: Brine Leakance



References

Lloyd, O.B., Jr., and Lyke, W.L., 1995, Ground Water Atlas of the United States, Segment 10--Illinois, Indiana, Kentucky, Ohio, and Tennessee: U.S. Geological Survey Hydrologic Investigations Atlas 730-K, 30 p.

Olcott, P.G., 1992, Ground Water Atlas of the United States, Segment 9--Iowa, Michigan, Minnesota, and Wisconsin: U.S. Geological Survey Hydrologic Investigations Atlas 730-J, 31 p.