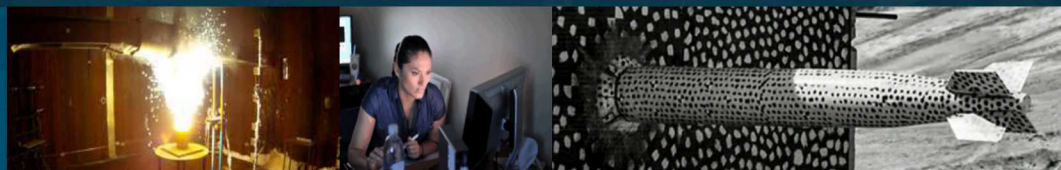


SANTOS to Sierra/SM Migration



PRESENTED BY

Chet Vignes, James Bean, Ben Reedlunn, Courtney Herrick

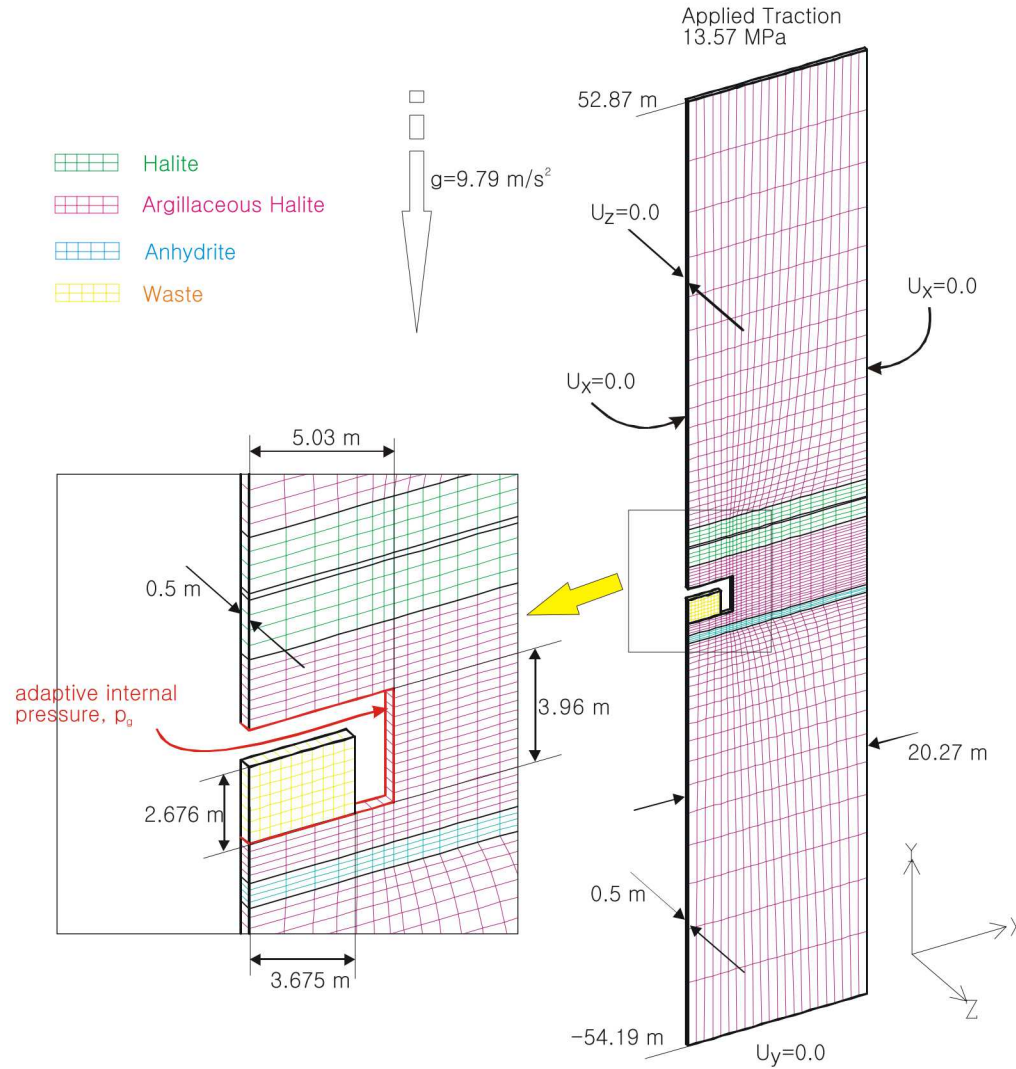
Migration to Sierra/Solid Mechanics

Phase I: Reproduce SANTOS porosity surface. (FY19)

Phase II: Improve simulation numerics. (FY20)

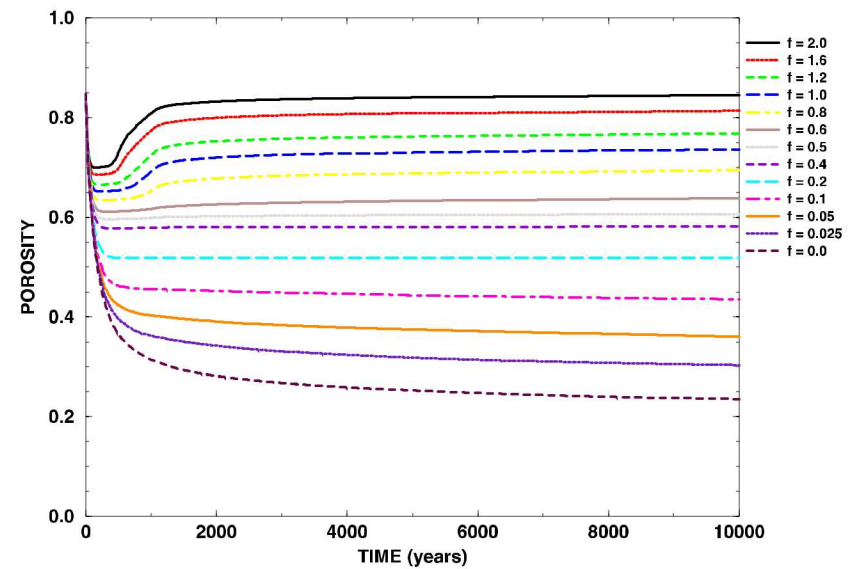
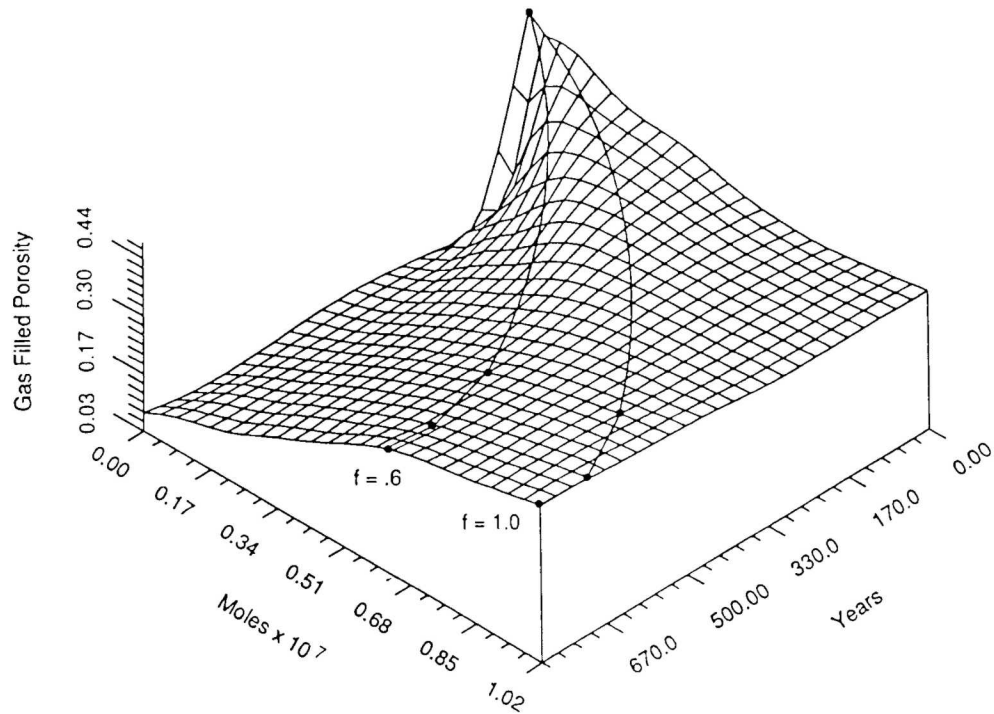
Phase III: Update stratigraphy and geomechanical model. (FY20-21)

Model geometry and stratigraphy

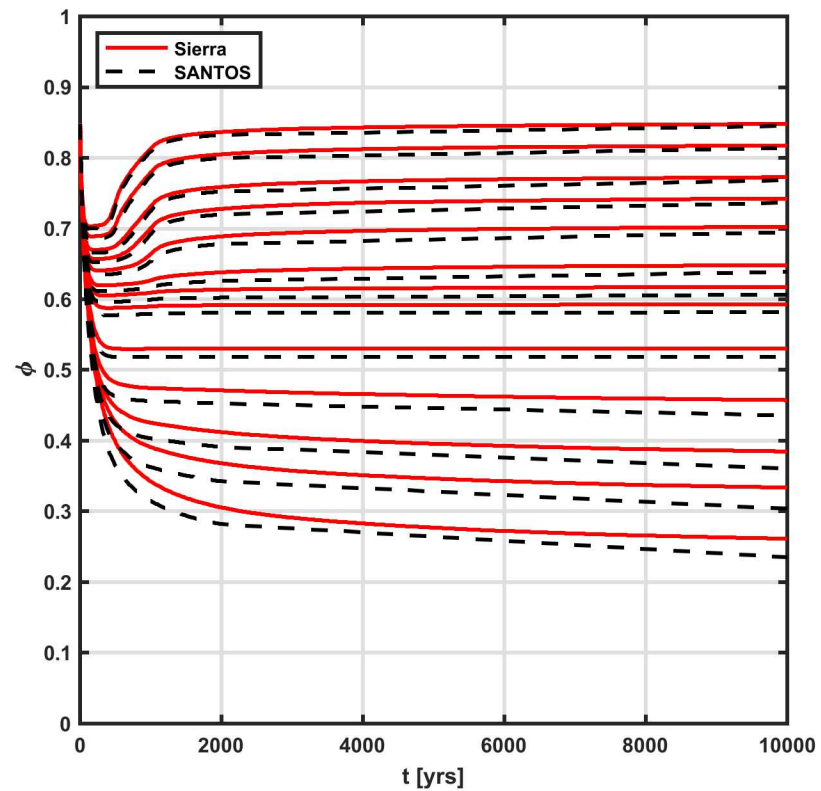
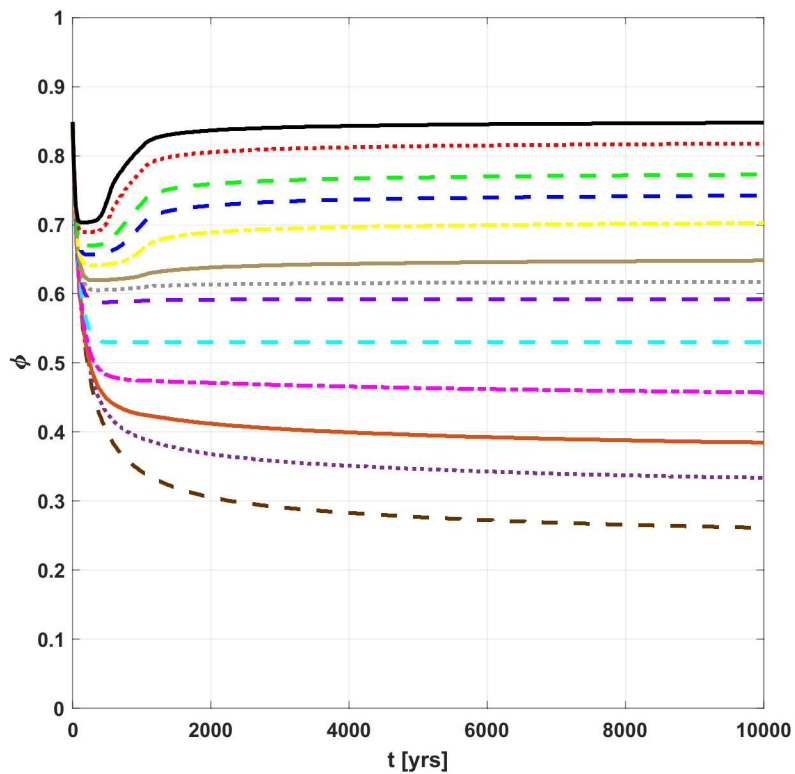


SANTOS Model

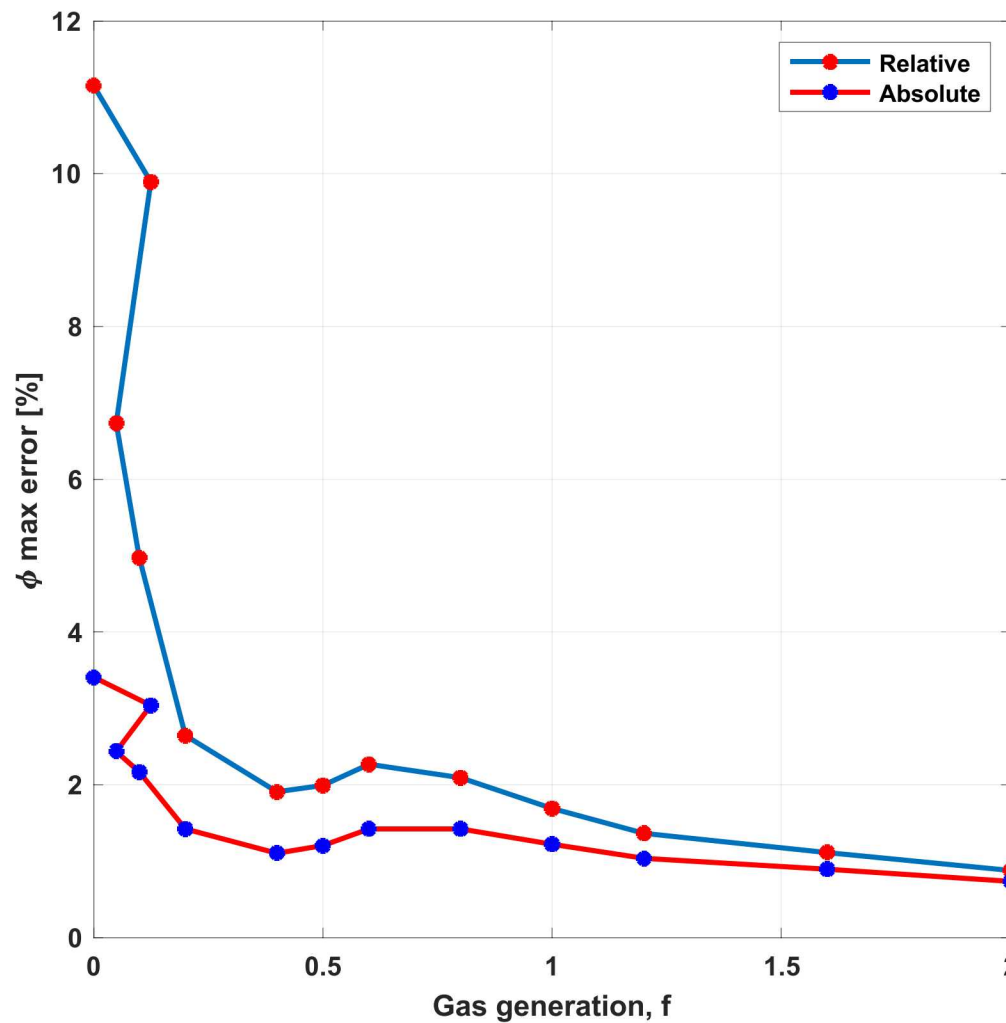
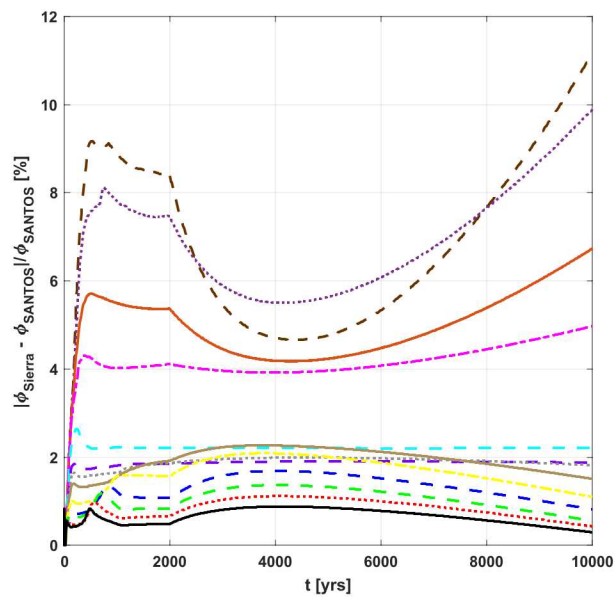
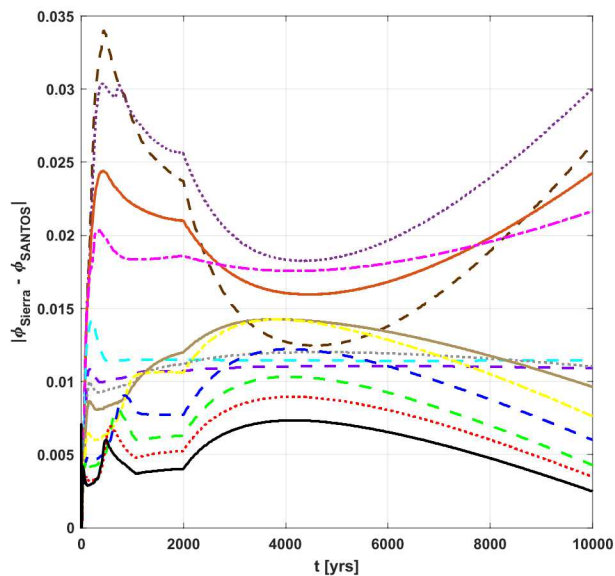
Porosity surface



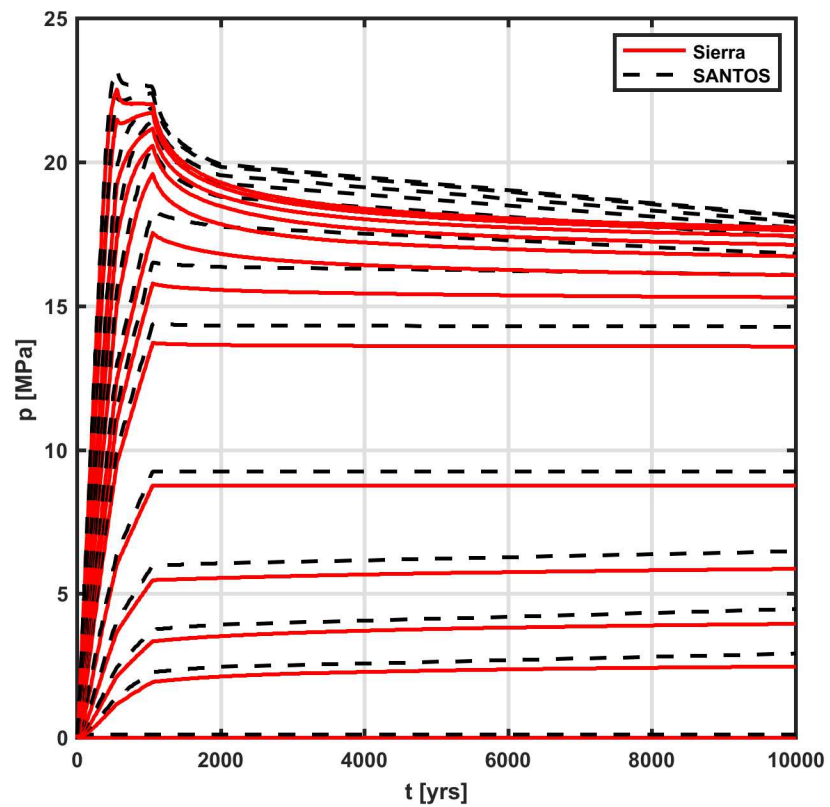
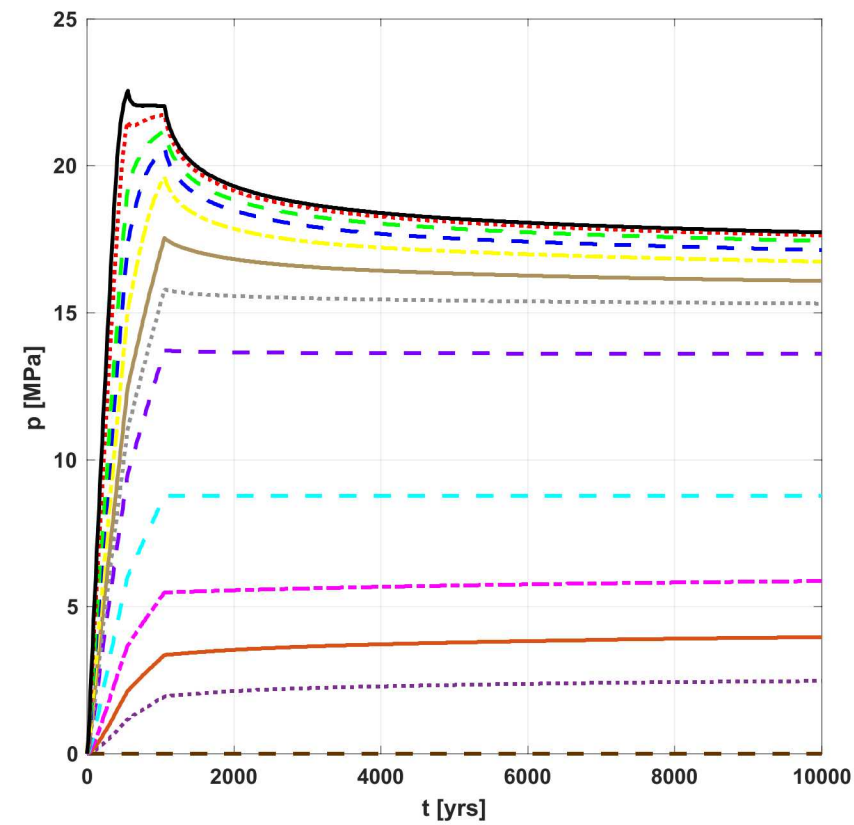
Porosity curves



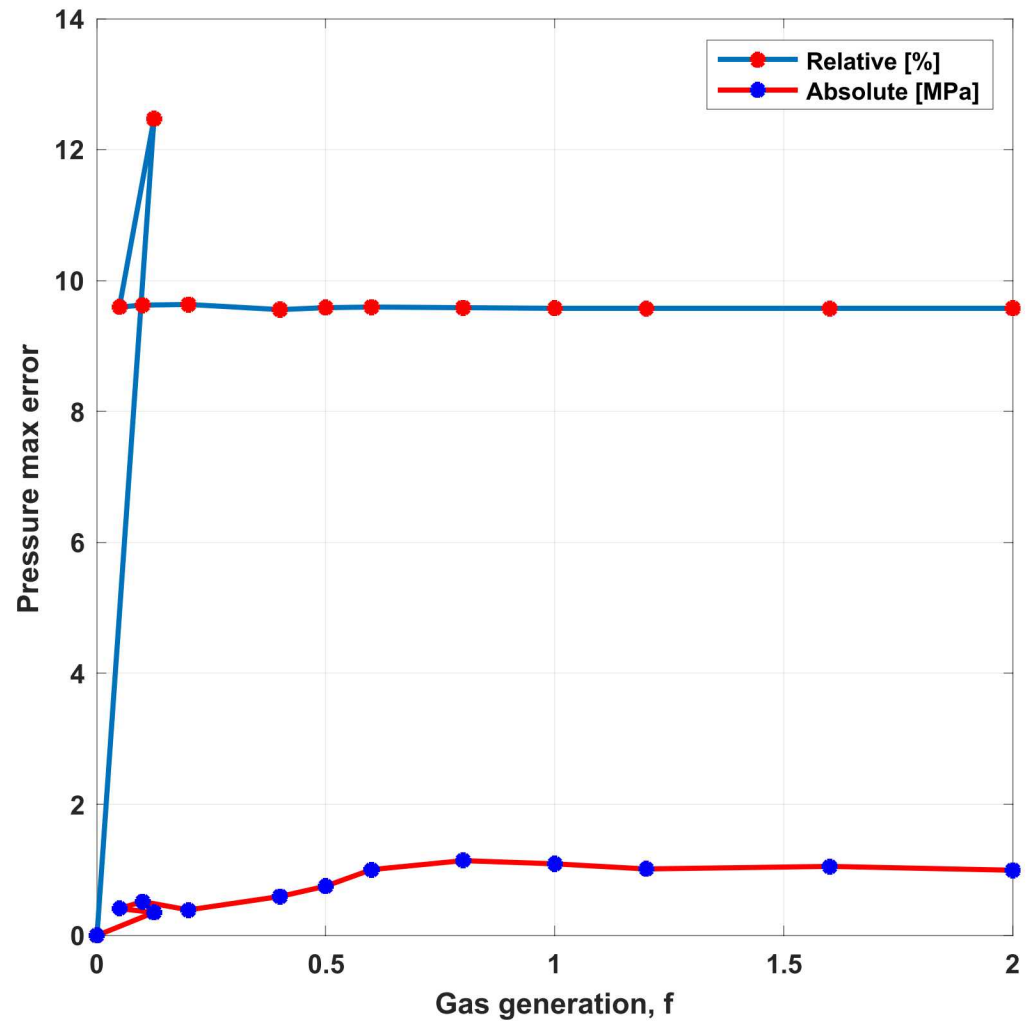
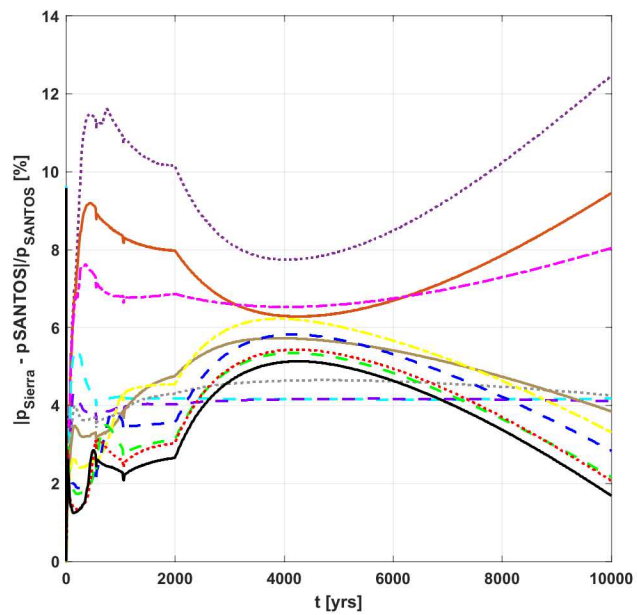
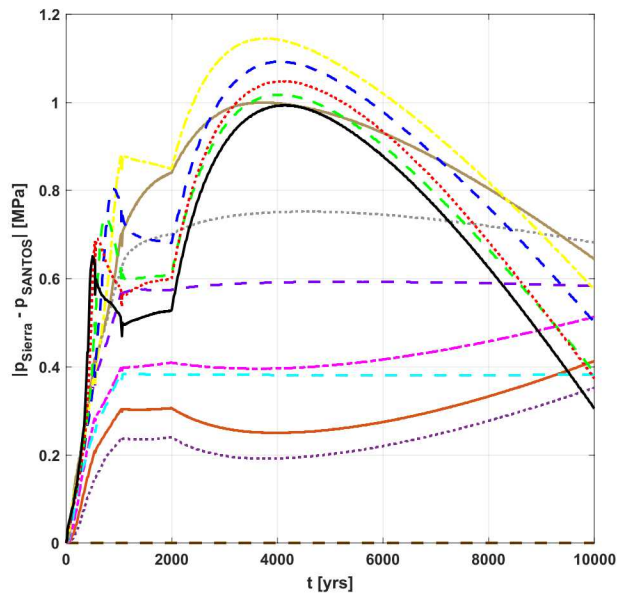
Porosity error



Pressure curves



Pressure error

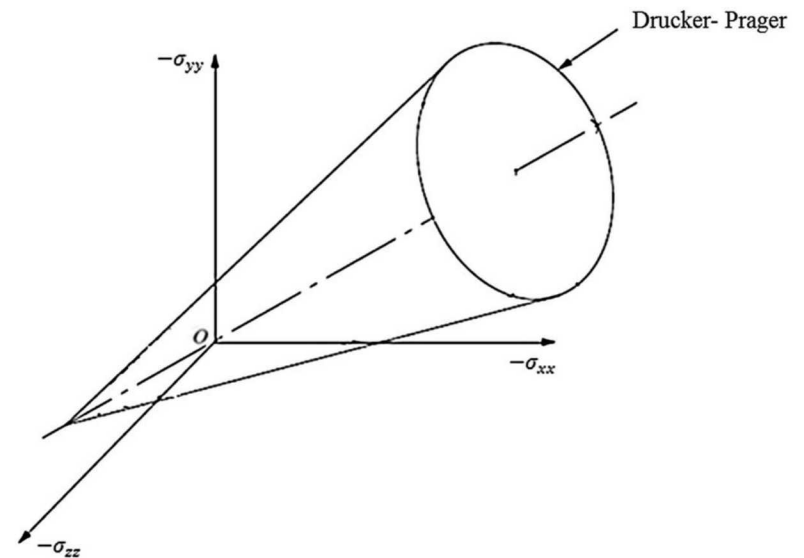


Soil and foam elastic-plastic constitutive model

Isotropic elasticity

Two-surface plasticity

- (1) Non-hardening shear surface
(Drucker-Prager non-associative flow)
- (2) Planar cap plasticity (associative flow)



Qualification requirements document drafted. Needs constitutive model specification.

(Soil and foam, Weidlinger, Kayenta)

Numerics and Geomechanical Model

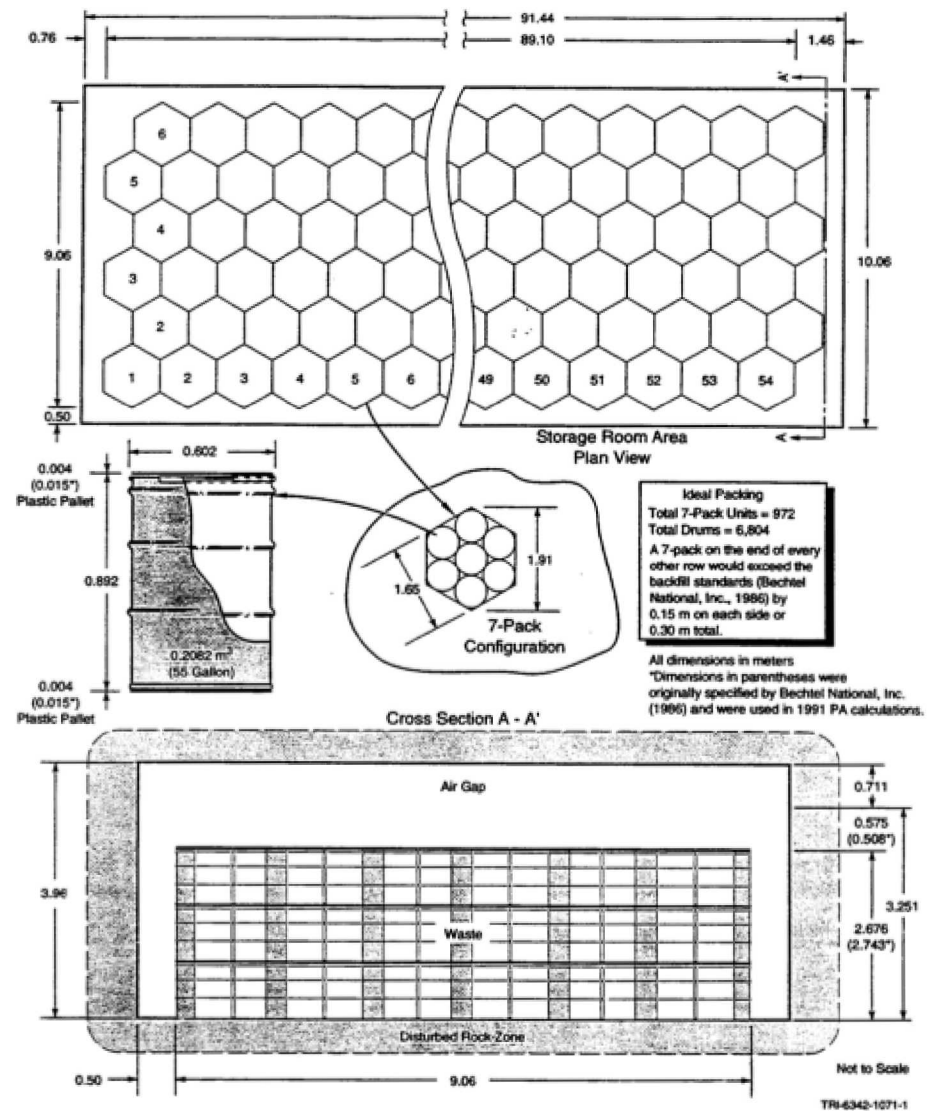
Solution tolerances

Mesh convergence

Stratigraphy

Waste representation

Extended Munson-Dawson model



[2] Butcher, SAND97-0794