Biax Experiment

Exp. Name: pTest
Operator(s): Wood

Date/Time: 01 Nov. 2020
Hydraulics start: 3613.2
Hydraulics end: 3621.6

Sample Block Thickness w/ no gouge:

Layer Thickness (total on bench): mm @sample
Under Load: mm
Material (Qtz, Granite, ?): WG, Saw-cut & 600-grit.
Particle Size, Size Distribution :

Load Cells: Contact Area: 0.0022292545 m^2

Load cell name	Calibrations (mV/kN)	Target stress (MPa)	Init. Voltage	Volt. @ load
44mm Solid Horiz	119.3033 (V/MPa): 0.26596	1, 5, 20	0.79220	1.05816, 2.12199, 6.11135

Vessel Pressure: Pore Fluid: DI H2O

	Calibrations (V/MPa)	Pressures (MPa)	Init. Voltage	Volt. @ load
Pc	Gain: 0.1456	3.145	-0.153436	0.30435
PpA	1.5177	2.5	0.097009	3.89121
PpB	1.483	0.5, 1.0, 2.0	0.049729	0.79124, 1.53275, 3.01577

Data Logger Used: 16 channel

Control File: No

Horiz. DCDT: *short rod*
0.6438 mm/V

Vert. DCDT: Trans-Tek 2
2.849814762

Purpose/Description: Permeability test of saw-cut sample roughened with 80-grit.
Sample to be sent to Andy Rathbun at Chevron for profilometry before DAET/PP osc. experiment.

Acoustics Blocks used: SDS L-block v2

Experiment Notes

150 NS = 6kN. put on doors

2710 plug in PpA/B ptrdx

2980 empty/refill PpA/B

3220 NS ↗ 5MPa

3350 fill vessel

3555 switch PpA/B to high gain

3630 PpA/B load offsets

4470 Pc ↗ 3MPa

note: Pc load and displacement reversed in recorder – oops.

7520 hydraulics shut off. chiller on, check hydraulics before next exp.

8260 unplug/replug Ppb cable

8625 start saturation

9500 flowing through, $\sim 13\mu m/s$. $k \approx 3 * 10^{-16} m^2$. @ PpA = 1MPa.

13000 connect PpB (valve closed).

13135 PpA ↗ 1.4MPa. No slope in PpA disp. – no leaks/mysterious storage.

14300 refill PpA., ↗ 2.5MPa. PpB ↗ 0.5MPa.

14500 open B and start flow.

14900 1Hz ↗ 10Hz (about 4:30min into flow). $Qa \approx Qb \approx 10^{-8} m^3/s$

24380 PpB ↗ 1MPa. $Qa \approx 6 * 10^{-9} m^3/s, Qb \approx 2 * 10^{-8} m^3/s$

38500 PpB ↗ 2MPa. $Qa \approx 2 * 10^{-9} m^3/s, Qb \approx 2 * 10^{-8} m^3/s$

51500 PpA/B ↘ 0MPa, refill.

53750 NS ↗ 20MPa, PpA ↗ 2.5MPa, PpB ↗ 0.5MPa.

54030 ↗ 10Hz, open B. $Qa \approx 2 * 10^{-9} m^3/s, Qb \approx 1.4 * 10^{-9} m^3/s$

67125 close B valve, PpB ↗ 1MPa, open valve. $Qa \approx 9 * 10^{-10} m^3/s, Qb \approx 8 * 10^{-10} m^3/s$

78640 close B valve, PpB ↗ 2MPa, open valve. Qb not steady-state, opposite flow direction.

85800 close B valve, PpB ↘ 1.5MPa, open valve. $Qa \approx Qb \approx 5 * 10^{-10} m^3/s$

98000 ↘ 1Hz. reduce all stresses.