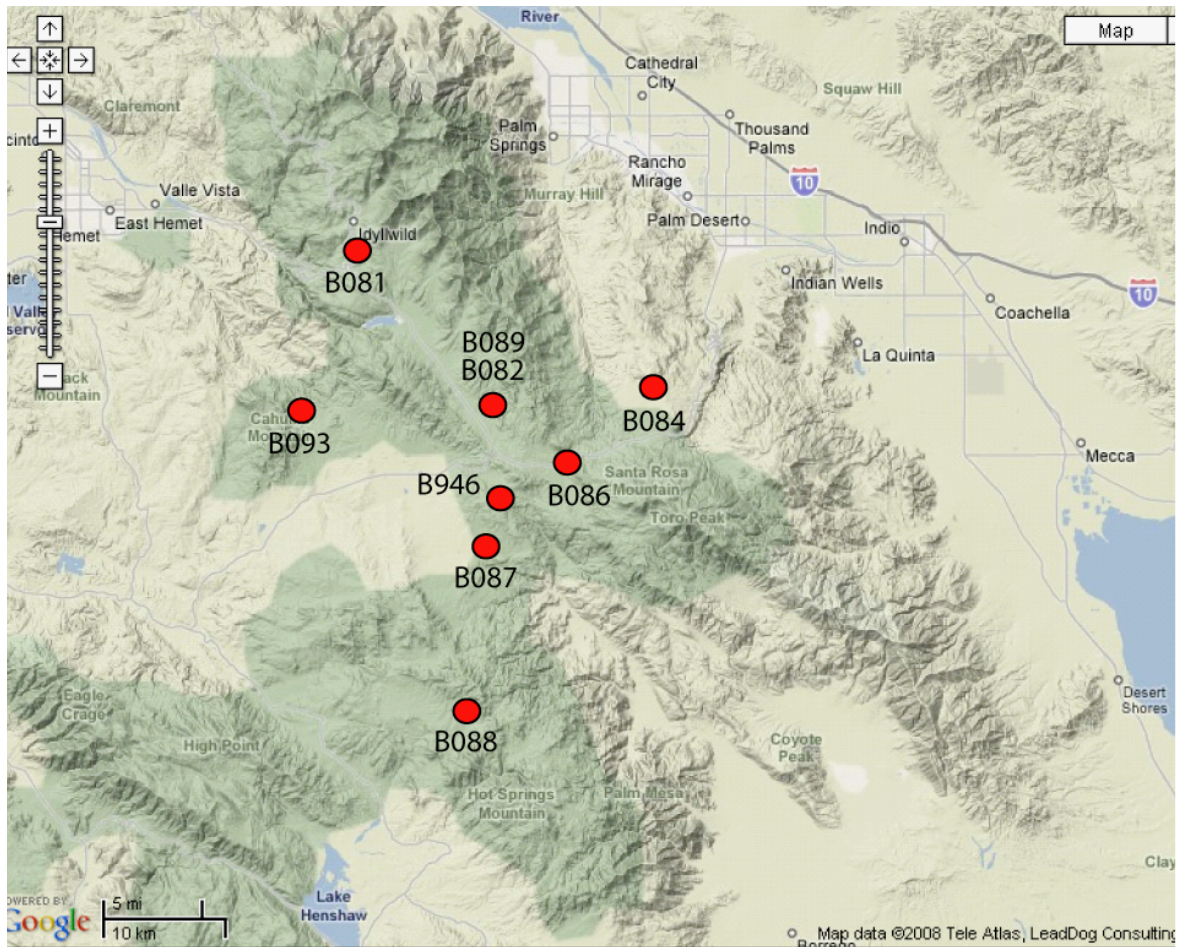


Station Notes for B946, sagebf946bcs2010

Latitude:	33.5373 (WGS 84)
Longitude:	-116.59245 (WGS 84)
Elevation:	1429 m / 4688 ft
Install Depth:	148 m / 485.6 ft
Orientations:	CH0=330.8, CH1=270.8, CH2=210.8, CH3=180.8
Install Date:	July 22, 2010
GTSM Technologies #:	US82
Executive Process Software:	Version 1.14
Logger Software:	Version 2.02.2
Home Page:	www.unavco.org/instrumentation/networks/status/pbo/overview/B946
Notes Last Updated:	July 23, 2018

·Install depth is from the top of the casing to the bottom of the strainmeter.

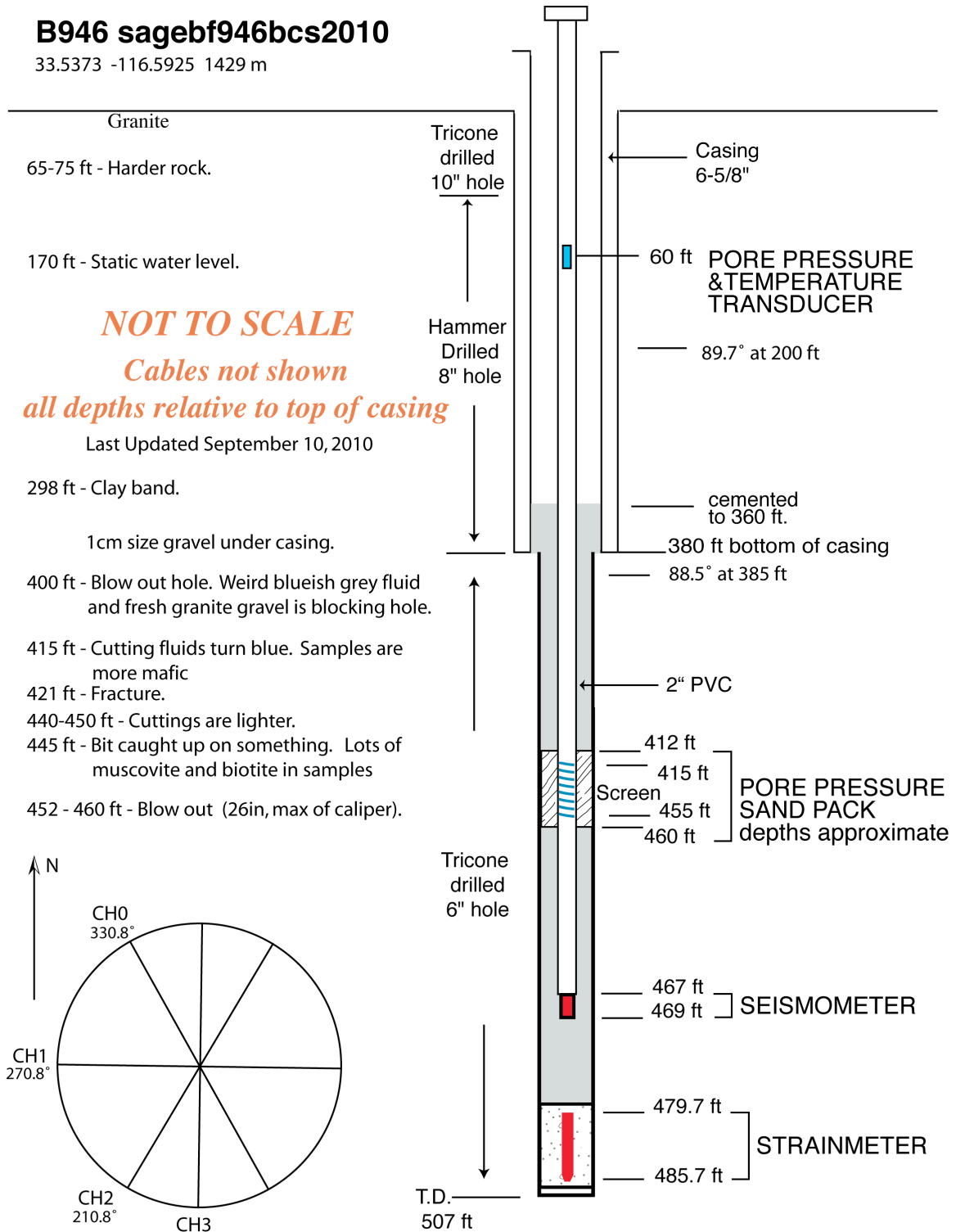
·Orientations are in degrees East of North.



Anza PBO strainmeter network, July 2010.

B946 sagebf946bcs2010

33.5373 -116.5925 1429 m



Instrumentation at Strainmeter

Instrument	Units	Bottle/ASCII Scale Factor	SEED Scale Factor
Pore Pressure	Hecto Pascals	1.0	0.001
GTSM Barometer	Kilopascals	1.0	0.0001
Rain Gauge	Millimeters/hour	1.0	0.252
Down hole Temperature Sensor	Degrees Celsius	1.0	0.0001
Logger Temperature Sensor	Degrees Celsius	1.0	0.0001
Setra Barometer	Hecto Pascals	1.0	

1. Installation notes

July 23, 2010 - All times are UTC.

On-site: Warren, Wade, Mike, Tim, Korey & Liz.

After sounding the hole and testing the dump bailer the install tie off depth is set for 145 meters.

02:00 - Added 10 gallons of water to the grout mixer.

02:07 - Began mixing in grout (Penn Grout batch AA005).

02:09 - Last bag of grout was added.

02:11 - Last amount of water was added (totaling 11 gallons).

02:18 - Grout mixture was ready.

02:20 - Began filling dump baler.

02:22 - Dump baler was sent down the borehole.

02:25 - Dump baler hit bottom.

02:30 - Dump baler was out of the borehole.

02:34 - Strainmeter was sent downhole.

02:38 - Strainmeter at tie off depth.

02:43 - Strainmeter is in grout. Final install depth was at 148 meters, which was 0.46 meters short of planned install depth.

02:46 - Strainmeter was turned on.

02:55 - Strainmeter US82 renamed B946.

03:00 - Install called good.

Pre-Install strainmeter orientation values:

Xmin: 1.160

Xmax: 2.115

Ymin: 0.987

Ymax: 1.899

Post Install Values:

X: 1.379

Y: 1.163

Downhole Temp: 3.404 V

RT boards stay at G2, and reach G3 before leaving site at roughly 03:30.

Please note: Logger firmware is version 1.19 and needs to be updated.

July 24, 2010 – All times are UTC.

Seismometer UNID: 19069 Serial Number: 2

Seismometer test:

All grounds were continuous

V = 2.591 k Ohms

H1 = 2.614 k Ohms

H2 = 2.605 k Ohms

Depths:

Top of Penn grout tagged @ 470'.

40' of double screened pvc is between the depths of 455'-415'.

The seismometer was lowered with pore pressure pipe.

00:00 - The seismometer and pore pressure pipe are at their final depths in the borehole.

00:30 - Tremie pipe was tripped in for cementing only the seismometer. Four X 5 gallon buckets of cement with Four X 47lb bags of Portland cement were used. This was 20 gallons of neat cement.

40' of tremie was tripped out.

July 24, 2010 – All Times are UTC.

16:00 - Tagged cement at 460'. Seismometer installed at 469'. Sand from 412'-460', fully covering screen section of PP pipe (415'-455'). This took 20 bags plus 3 x 5gallon buckets of sand.

17:30 - Added 1 bucket bentonite. Backfilled well into casing with 800 lbs of cement. This should bring the well up to roughly 360'.

19:15 - Shut down GTSM to make pad. Poured pad, and installed solar panel mounts.

July 25, 2010

00:00 - Turned GTSM back on.

July 25, 2010 – All time in UTC.

16:00 - On site, turned off GTSM to install hut. Installed hut, GPS mount, solar panels, then turned back on GTSM. Finished installing rain gauge, electronics. Pore pressure sensor not installed because water level in pore pressure pipe was 170' and they only had 150' of cable. The sensor needs to be installed at a later date with longer cable. Cleaned up site, loaded equipment, and made dump run.

July 26, 2010

off site at 01:00.

Communications were installed by 01:30 UTC on July 27, 2010.

2. General Information

- The pore pressure sensor was installed at 60 feet, and no packer was installed.

3. Strainmeter Maintenance

- September 3, 2010 – Sounded water at 46.5' inside pore pressure pipe. Lowered pore pressure sensor to depth of 60'. Unable to set up data collection on Q330 the time due to differences the firmware in the unit provided by Glen Offield and the standard PBO units.
- February 3, 2011 – Temporary broadband seismometer deployed, and borehole seismometer metadata collected with the Birdog. Replaced the battery jumpers with 4 gage wire, and set quads and chop.
- March 2, 2011 – Replaced all battery jumpers with 4 gage wire. The firmware on the Q330 was upgraded, and the serial port configured for pore pressure. Everything appears to be working and pore pressure is now available.
- May 31, 2012 – Mike Gottlieb upgraded the firmware to 2.02.2 (it was 1.19). He also changed the strain-logger.conf file, which altered some of the offsets (MDegOffset and DHTempOffset). There will be a large step down in the down hole temperature associated with this change.
- July 24, 2012 – A temporary broadband seismometer was deployed.
- July 25, 2012 – Upgraded power system. Added Tristar MPPT solar controller.
- June 24, 2014 – Set quadrature and chop on all channels. Chop was substantially off. Moved antenna to the top of the equipment rack and sent coldstart command to the GTSM.
- January 21, 2014 – Set quadrature and chop. Checked wiring of vertical channel on seismometer, looked normal. If wires are crossed it must be in either the seismometer itself, or in a poorly made pigtail.
- November 29, 2017 – Pore pressure sensor was no longer under water. Wade tried to lower the sensor down to the water, but ran out of cable.
- January 24, 2018 – Replaced pore pressure sensor, added 2x150' cables spliced together. Water was at 182', sensor was lowered to 217'. Metpack was installed (attached to P797 netR9) and set to true north. It was mounted on the middle solar panel rack, away from the GPS antenna. Data flow was confirmed on data out.
- June 28, 2019 – Removed dead basalt and tuned GTSM21.
- September 10, 2019 – GTSM was powered off, despite batteries being at 14 V. Determined failure was in Power box, so it was replaced. GTSM back running after swap.