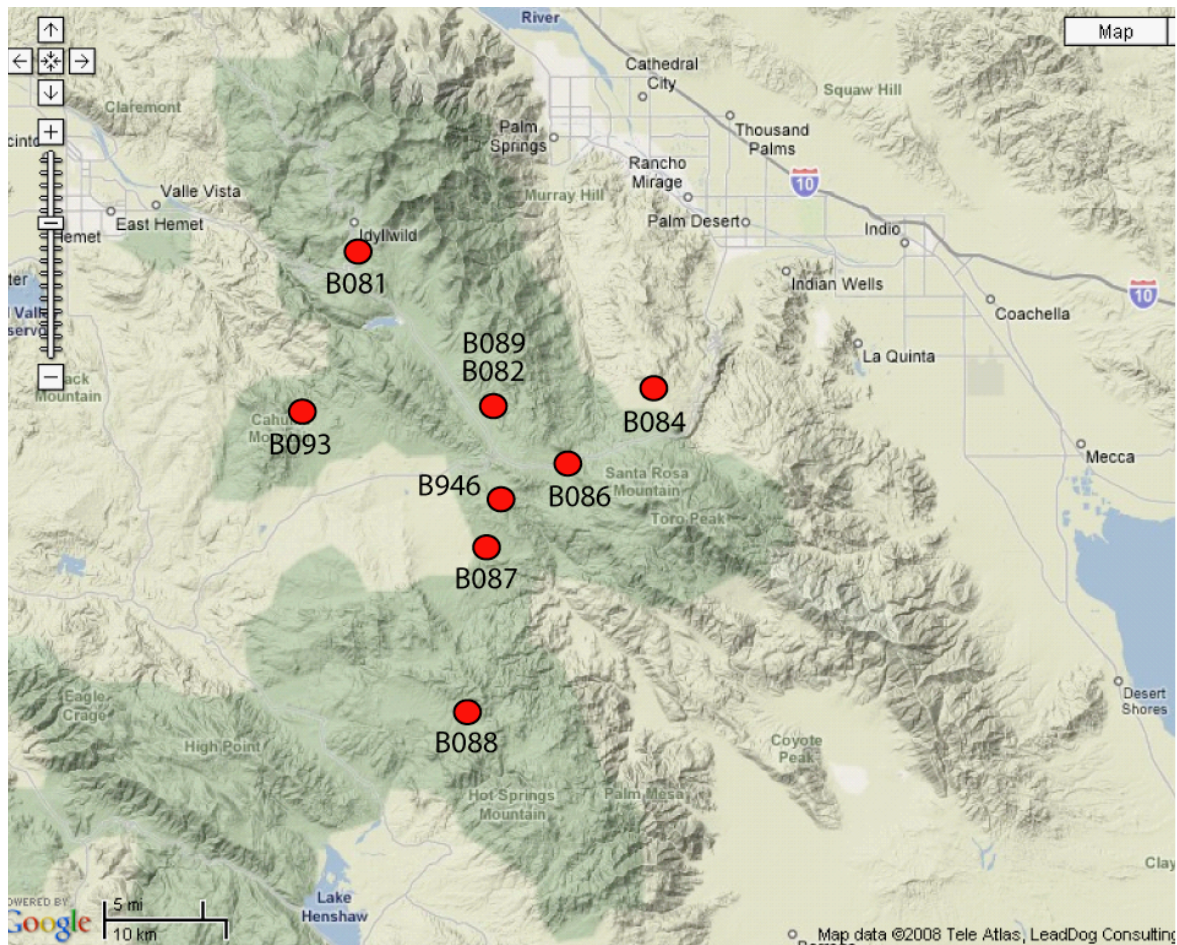


Station Notes for B087, fordra087bcs2006

Latitude: 33.4955 (WGS 84)
Longitude: -116.6026 (WGS 84)
Elevation: 1139 m / 3737 ft
Install Depth: 160.9 m / 528 ft
Orientations: CH0=340.7, CH1=280.7, CH2=220.7, CH3=190.7
Install Date: 13 June 2006
GTSM Technologies #: US17
Executive Process Software: Version 1.14
Logger Software: Version 2.02.2
Home Page: www.unavco.org/instrumentation/networks/status/pbo/overview/B087
Notes Last Updated: March 21, 2020

·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.

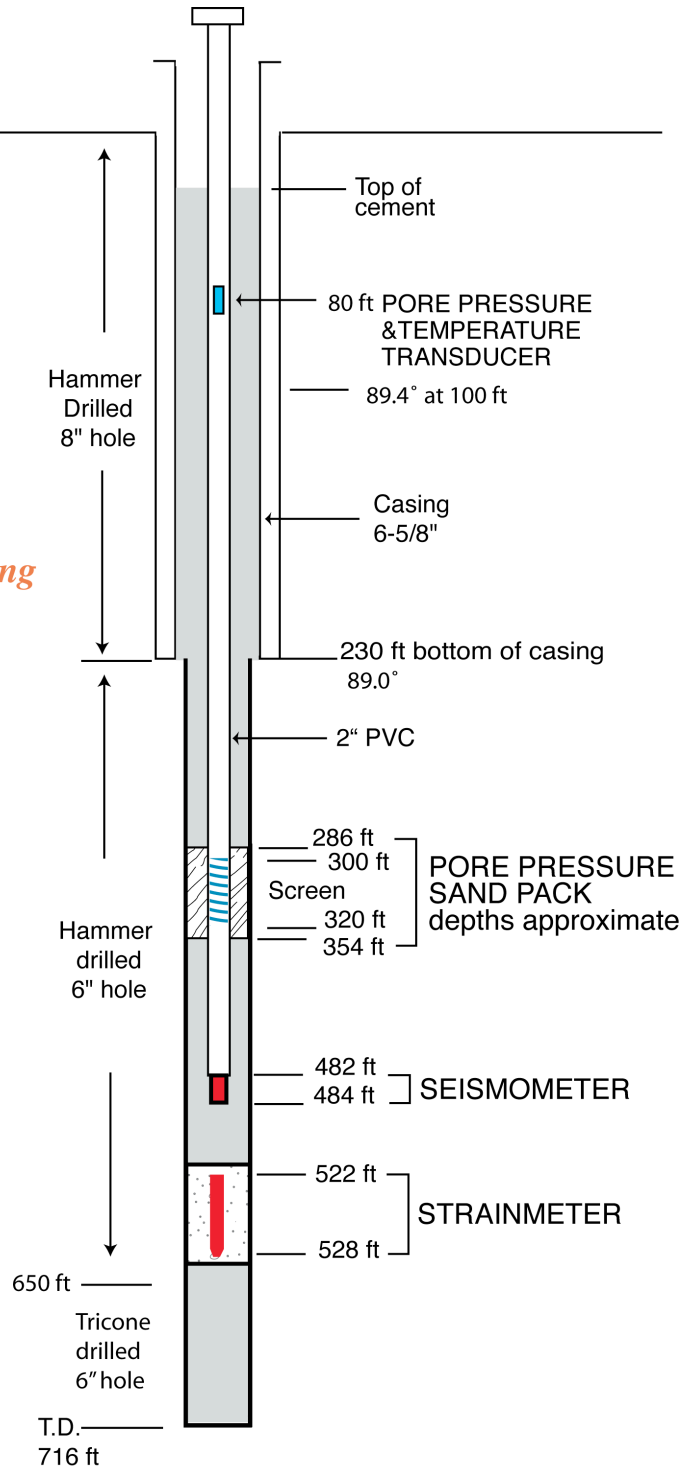
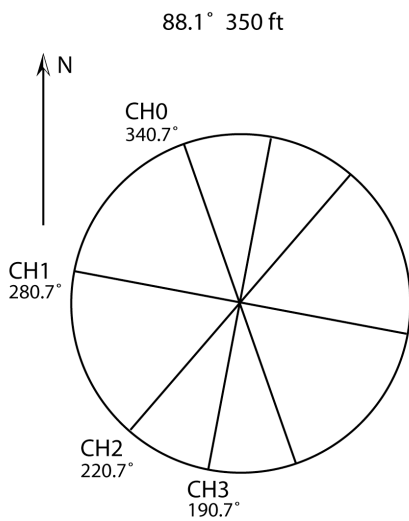
B087 fordra087bcs2006

33.4955 -116.6027 1139 m

NOT TO SCALE
Cables not shown
all depths relative to top of casing

Last Updated 13 August 2010

hole making ~60 gal/min



Instrumentation at Strainmeter

Instrument	Units	Bottle/ASCII Scale Factor	SEED Scale Factor
Pore Pressure	Hecto Pascals	1.0	N/A
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	Not installed at this time	

1. General Information

- Telemetry impeded by trees
- Environmental door opened on July 13, August 8 & 29, September 22, November 10 (two times), 13, and 14, 2006.
- Sensitivities of all EH channels corrected on March 4, 2010.
- April 4, 2010 - Magnitude 7.2 - BAJA CALIFORNIA, MEXICO
- The pore pressure sensor was installed at 80 feet, and no packer was installed.

2. Strainmeter Maintenance

- 10 November 2006
Wade Johnson visited the site to get it up and running
- 4 January 2007 - Ryan Bierma opened enclosure and checked NetRS
- 10 January 2007 – Mike Hasting visited the site. He upgraded RT Controller board to V1.17, and upgraded GPS to 135_309.s3. Adjusted the downhole temp, should have reasonable numbers now. Adjusted Barometric Pressure, should have reasonable numbers now. Fixed broken power wires on the WiLan radio, broke when cleaning up enclosure. Removed trash and dead battery.
- 15 January 2007 – Mike Hasting Installed Marmot today. He also fixed radio power problem, station back on-line
- 14 February 2007 – Wade Johnson installed an equipment rack and upgraded the power system. He left the strainmeter on its original power system. Seismometer, Marmot, NetRS where taken offline for about an hour between 1500 and 1600 PST
- 24 April 2007 – Mike Hasting visited the site because communications had failed to the site a few weeks ago. Testing of the radio indicated there was a problem with the power/Ethernet cable. He found a broken + wire in the connector and made a temporary fix to this, but it needs to be replaced. After fixing the power issue the communications started working with about a 75% ping loss rate back to Boulder. After removing lightning arrestor, ping loss rate

went to 50%. Further investigation showed that the connector on the antenna was filled with water, and the cable had water in it as well. He replaced the cable and reinstalled the lightning arrestor and the ping loss rate went to less than 5% over 10min interval. He confirmed that the station was able to communicate with Boulder and noted that the Marmot was busy transferring data. All communications seem to be fixed.

- September 22, 2007 – Tim Dittmann visited the site. The site was powered, batteries charged, and all electronics were running. He cycled power on Cisco and replaced the ethernet/power cable on the radio. Warren G was able to ping all the electronics, but they are still not holding a consistent connection. Looks like it is probably a radio problem. They will get in touch with HPWren to see if they are having any problems, and if not, perhaps it is just the antenna/radio. They will be back in the area in 2-3 weeks to finalize B093.
- November 14, 2007 UTC – Tim Dittmann and Tyson visited the site. They transferred out the black fiber-optic modem for a new one, but this didn't fix the problem. Battery voltages- 13.57(coms), 11.15(GTSM). GTSM turned off. Checked voltage on DC power supply, reads 5.75volts. Unplugged DC power supply, turned up voltage on power supply to 16.01 volts. Plugged GTSM power box back up to DC power supply, it now reads 11.6volts. Turned up current to 4.00amps, now 13.4volts. GTSM still not powered on. Hit reset button on GTSM power box and GTSM turns on. Battery voltages- 13.5(comms), 13.2(GTSM). Everything up and running. Warren wants to swap out the DC power supply. Run red/black wires to back panel and hook up to isolation box on back panel. Wait approximately 1/2hr, Warren calls at approximately 17:35, gives the ok that all is up and running properly.
- February 20, 2008 UTC – Tim Dittmann visited the site.
 - 19:30 On site, vacuum interior of hut.
 - 19:35 Shutdown old fiber modems.
 - 19:45 Shorten battery jumpers.
 - 19:52 Turn on new blue fiber modems.
 - 20:09 LCD is blank on Chan 3 of the GTSM, restart channel, LCD comes back.
 - 20:10 Tune GTSM quadratures.
 - 20:15 Off site.
- January 15, 2009 – Mike Gottlieb visited the site to get the station back online. Failure occurred in ethernet cable connecting WiLan radio to router. Additionally, he repointed the antenna to improve signal strength. Site is currently online, but still has a fairly weak signal. Mike will keep the option open to redirect shot through BZN repeater at a later date.
- March 17, 2009 – Firmware was updated from version 1.15.1 to 2.02.2.
- June 17, 2009 – RT boards upgraded to 1.20.
- June 23, 2009 – Mike Gottlieb at site. Found loose ethernet connection between GTSM and fiber optic modem. Reset connection, and GTSM came back online. No data lost.
- December 28, 2009 – Q330 was rebooted via Willard. This resulted in an improvement in seismic data flow/data flow.
- April 1, 2010 – Installed pore pressure sensor UNID 24343 at a depth of 80'. Static water level was 46'. The sensor was plugged into the serial 1 port of the Q330 and began collecting

data at 14:25 PST. A metpack was installed at the same height as the GPS antenna at 14:01. The marmot still needs to be configured to collect data from this instrument.

- September 8, 2011 – Replaced the metpack cable with a functional one. Marmot is now collecting MET data.
- June 20, 2013 – Mike Gottlieb sent the GPS cold start command to fix the GPS time.
- October 13, 2013 – Q330 was rebooted.
- November 19, 2013 – Marmot was rebooted.
- March 2, 2014 – The GTSM barometer began recording bad data, and voltages began dipping. Powerbox is probably failing, possibly due to flooding caused by 100mm of rain a few hours earlier.
- March 24, 2014 – Compact flash card is showing signs of failure. Station is returning a number of 0-length files.
- April 3, 2014 – Power box was damaged by water and was replaced with a new box. The logger board was replaced due to a bad compact flash card. The screen on the RT board was dead and there was lots of high frequency noise. Noise went away when the card was replaced. Replaced batteries, 2 for the GTSM and 2 banks of 3 for mains.
- June 24, 2014 – Turned off GTSM, reseated RT3 board, cleaned connections with compressed air. Hopefully this helps with the noise on CH3.
- January 19, 2015 – Replaced 5 port fiber optic modem. GPS was not tracking well so powerbox was replaced. Set pressure_offset to 84.71 according to label on powerbox.
- January 25, 2018 – Rebooted cisco to allow telnet connection, emailed Steve Smith to upgrade to ASA. He migrated it and performed a firmware update. Afterwards, unable to ping anything past the router. From the router, could ping all equipment except router. Rebooted cisco and normal operations were restored.
- March 12, 2019 – Marmot was hung and was rebooted.
- June 26, 2019 – Marmot was off line, back up after site visit. Had Otina turn off GTSM collection code. Swapped CH1 RT card. Noise on channel since March 2019. Left site with new CH1 RT card, did not help data. Will return with dummy load cell.
- August 5, 2019 – The station was visited to diagnose power issues leading to the batteries no longer charging. AC GFCI outlet was reset as was the surge protector that the IOTA was plugged into. The IOTA DLS-15 was replaced for good measure. The load voltage came back up and the receiver booted up without issue.
- December 22, 2019 - Ch1 noisy since early 2019, Ch2 noisy since Dec 2019. Found CH1 in G1 and CH2 in G0, adjust quads and rebooted rts. Ch2 now G3, CH1 G2. RT1 board had already been swapped, should try new oscillator, but Mike don't have one with him. Ch2

continued to show noise through 12/26, then started to look better. Issue likely not permanently resolved. Ch1 still has significant noise issues.

- February 4, 2020 – Replaced oscillator to address noise on CH1. Before swap, was in G1, could adjust quadrature but the minimum amp o/p signal was too large for higher gains. after swap, was able to get to G2, but still too much signal for G3. Will need to follow up and see if data looks any better. Also tried dummy cell, but suspect issues with dummy cell.