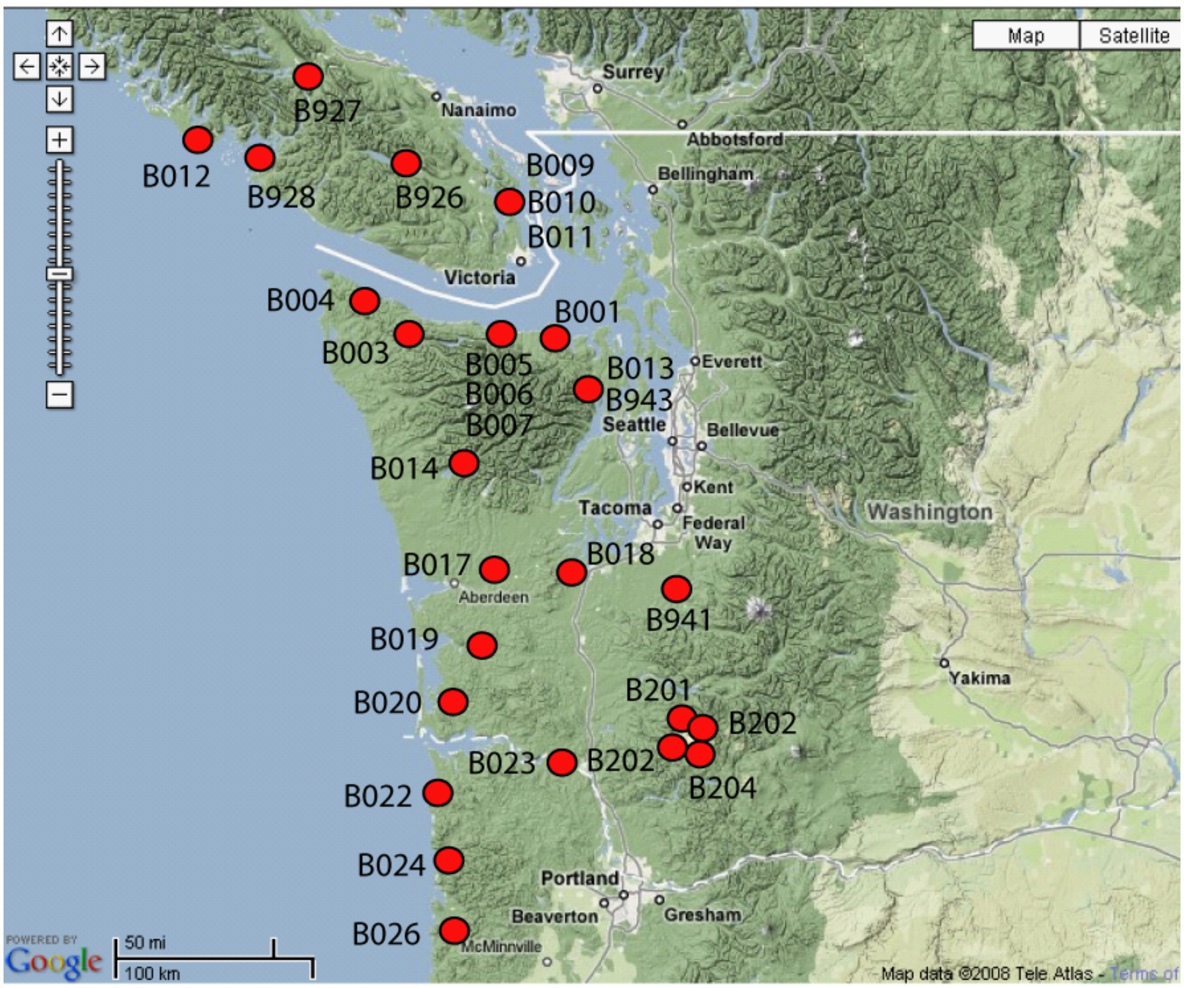
Station Notes for B013, Penny Creek, PnyCrk013bwa2007

Latitude:	47.813 (WGS 84)
Longitude:	-122.9108 (WGS 84)
Elevation:	75.3 m / 247 ft
Install Depth:[1]	168.4 m / 554 ft
Orientations:[2]	CH0 = 231.7, CH1 = 171.7, CH2 = 111.7, CH3 = 81.7
Install Date:	5 January 2007
GTSM Technologies #:	US22
Executive Process Software:	Version 1.14
Logger Software:	Version 2.02.2
Home Page:	www.unavco.org/instrumentation/networks/status/nota/overview/B013
Notes Last Updated:	December 20, 2018

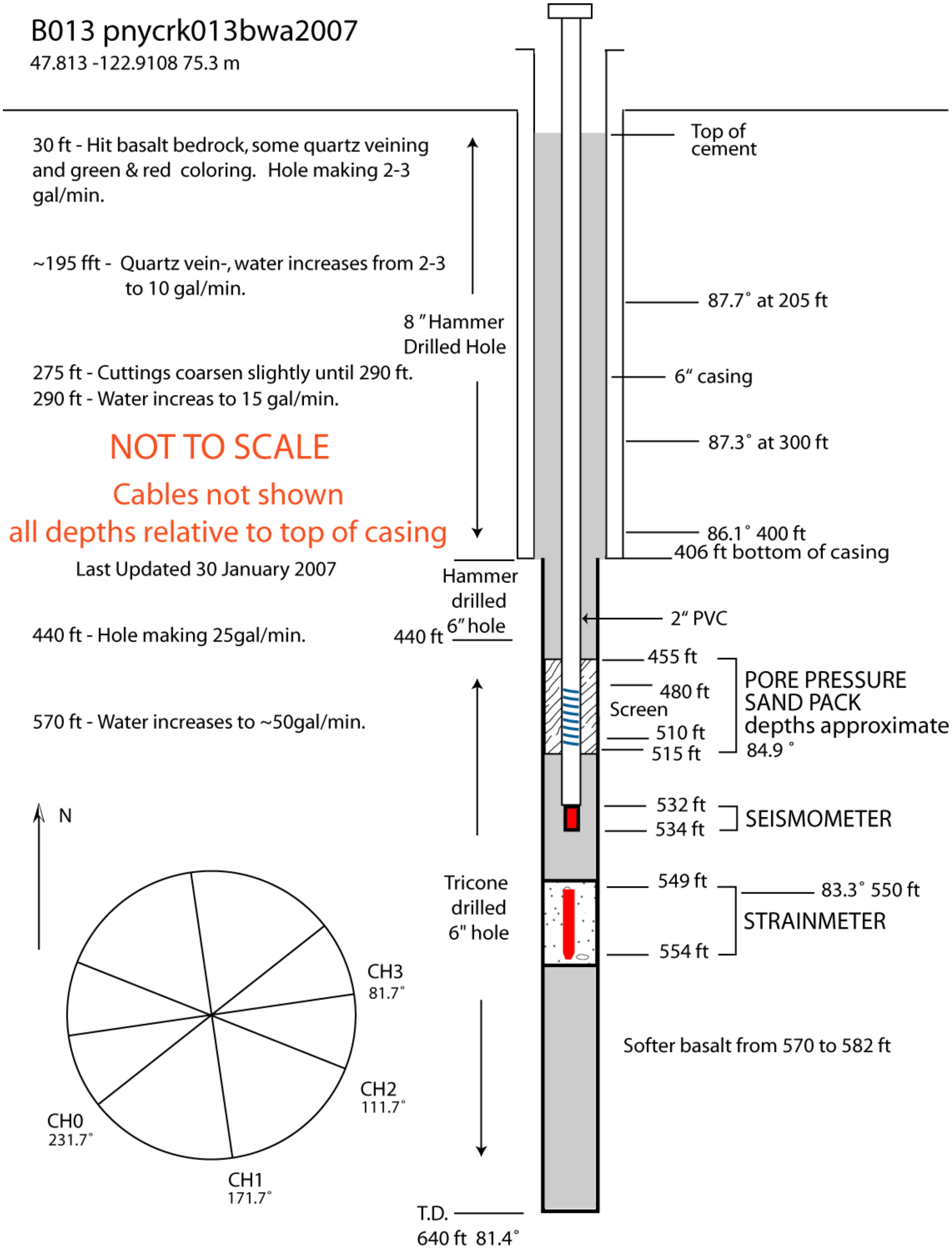
[1]Install depth is from the top of the casing to the bottom of the strainmeter.
[2]Orientations are in degrees East of North.



Pacific Northwest PBO strainmeter network, May, 2008

B013 pnycrk013bwa2007

47.813 -122.9108 75.3 m



Instrumentation at Strainmeter

Instrument	Units	Bottle/ASCII Scale Factor	SEED Scale Factor
Pore Pressure	Hecto Pascals	1.0 (not installed yet)	N/A
GTSM Barometer	Kilopascals	1.0	0.0001
Rain Gauge	Millimeters/hour	N/A	N/A
Down hole Temperature Sensor	Degrees Celsius	1.0	0.0001
Logger Temperature Sensor	Degrees Celsius	1.0	0.0001
Setra Barometer	Hecto Pascals	N/A	N/A

1. General Information

- Rain gauge is installed at B943.
- Pore pressure sensor not installed yet.
- Site does not have a Setra barometer

2. Strainmeter Maintenance

- January 17, 2007 – Wade Johnson visited the site to fix a power issue and get the site back online
- January 18, 2007 – Today Wade Johnson installed the seismic data logger, set up the VSAT and set up the VPN IP's for the CDMA. The CDMA will be replaced by the VSAT when we get AC at the site. No pore pressure has been installed because the water level is unknown.
- January 31, 2007 – Today Michael Hasting checked over site conditions. He checked over site condition. He found all battery terminals loose, and tightened them. He adjusted the downhole temperature to read 1.253V on test points, now reading -0.05 degrees. Installed weather stripping on front door near electronics to keep water from dripping on equipment. Did not put any weather stripping on back door as there was nothing to drip onto.
- March 1, 2007 – Andrew Tiedeman went to the site today to restart the T.E.G., reset the Strainmeter power-box.
- March 5, 2007 – Mike Gottlieb visited the site this morning and found GTSM batteries showing only 11.9 V, while the other batteries were up at 13.8 V. Tracing voltages showed that there were 13.74 V entering the power isolation box, but only 0.7 V reaching the breaker (which was in the ON position). Diagnosis: bad power isolation unit, with a temporary fix of disconnecting the seismic equipment and running only the GTSM and the CDMA directly from a bank of 6 batteries. At the time he left the site, these batteries were being charged by the TEG, with a voltage of 12.97 and climbing.
- May 18, 2007 – Wade Johnson switched B013 over to AC power and put it on VSAT. He also powered up the Q330.

- July 10, 2007 – At 20:00 UTC James and Mike visited the site to remove the TEG. The site was currently running on AC power, so nothing was changed inside the enclosure. The TEG is to be placed at one of the Mt St Helens sites.

- March 23, 2009 – Logger software upgraded to 2.02.2

- October 7, 2009 – Wade Johnson installed a blue Marmot.

- June 22, 2011 – The ODU was replaced. It was operational, but covered in moss. The VSAT dish needed to be re-pointed. There are large horses in the field with the site. If this happens in the future a fence should be built around the VSAT dish site.

- September 13, 2012 – When Liz arrived at the site the VSAT receive was at 77% and the cross-pole was failing at 56%. She repointed the dish with the receive reaching 81% (highest it reached was 82%) and cross-pole in the mid 70's. After adjusting the dish she attempted to use the force ranging, but there was an error message. She went through the set-up, successfully until it wanted to re-direct her to a new browser screen, with the message of an untrusted encryption key (not a pop-up window issue). She rebooted the IDU, but no change. She tried a new cable, no change. When She hooked the old cable back up, the receive improved to 82/83%.

- September 14, 2012 – Liz replaced the horn (transmit) on the ODU. The receive signal was boosted up to 91%. The IDU system status changed to green and the site coms were restored. She re-terminated all cable ends.

- October 14, 2012 – Liz replaced the ODU, the transmit was failing. She also re-terminated the cable ends.

- March 22, 2013 – Liz confirmed that there is no rain gauge at B013. The site has 6 batteries, three for the main bank and three for the GTSM. Liz secured the equipment with Velcro straps, and placed diatomaceous earth on the floor to deter insects. She checked the quads, but could not get CH3 in phase. Liz also replaced the RT board for CH2.

- April 3, 2013 – The first thing Liz noticed when opening the GTSM was there were no desiccants in the environmental box. She used the bottom part of a water bottle as a container and placed some fresh ones in the site. The GTSM was turned off to check for corrosion. All the connection contacts looked fine. She replaced the CHAN 2 board (from last visit), and replace CHAN 3 with a new RT board. The firmware was updated from 1.18 to version 1.20. She adjusted the chops and quads on all channels. She also tested the LVD on and off voltage.

- April 5, 2013 – The Oscillator board was replaced. The chops and quads were adjusted on CH0-3.

- July 22, 2013 – The Q330 only had a red "over surge" light on when Liz arrived. The site did not have a power strip/surge protector. There was no power going to the site and LVD2 COMMS block was off (router and VSAT). Liz opened the power/drop box for both sites and B013 was tripped off. She re-set power to both sites. She also replaced the Q330.

- March 26, 2014 – Looked at quads and chops, it's been almost a year. CH1 and 2 quads were still perfectly in phase. The chops for CH0, 1, and 2 were still good. CH3 adjusted, but would not adjust to be in phase for the quad adjustment. Could only get it close. Reseated CH3 board, no change.

- December 10, 2014 – VSAT dish and ODU arm were damaged during logging operations at adjacent site. Swapped site to cell comms and removed ODU/IDU.

- January 11, 2015 - Attempted to fix noise on CH3. Set quadrature on all channels. Reseated RT3 board and flex jumper cable and restarted GTSM.

- February 11, 2015 - Shut down GTSM. Reseated all boards and environmental box cable connections. No visible corrosion. Checked the quadrature and adjusted. CH0 was 100% out of phase. All other channels were close to being in phase.

- April 15, 2015 – Swapped out GTSM Environmental Box. All old boards were left on-site. Adjusted chops and quads. CH1 was not very responsive. Unable to check chops or match quads. Worked with quadratures for some time. Swapping the RT board did nothing. Will watch GTSM DQ for the next month. If there is no improvement the old GTSM environmental box will be reinstalled. They are logging, and made a road very close to the Strainmeter.

- October 6, 2015 – Adjusted GTSM chops and quads.

- September 26, 2016 – Turn off GTSM and documented resistance and capacitance of downhole instrument.

- January 24, 2018 – GTSM GPS timing is invalid. Remote cold start command did not fix issue. Tested GPS antenna attached to GTSM power box. Applied cold start commands and rebooted logger. After 30 min GPS changed from invalid to tracking 5 satellites.

- December 6, 2018 – BSM GPS timing has been bad for over a month. Remote Coldstart shell did not resolve the issue. Swapped out GPS antenna and waited for tracking. 30 minutes later the GPS timing was corrected. Adjusted GTSM Chops and Quads. All channels drift and are difficult to adjust.

- October 15, 2020 – Adjusted GTSM chops and quads. CH0 drifts. Upgraded to 1GB compact flash card. Will need to manually pull data from old card because site has been off-line. RV50 was on, but hung. Power cycled to restore VZN service.