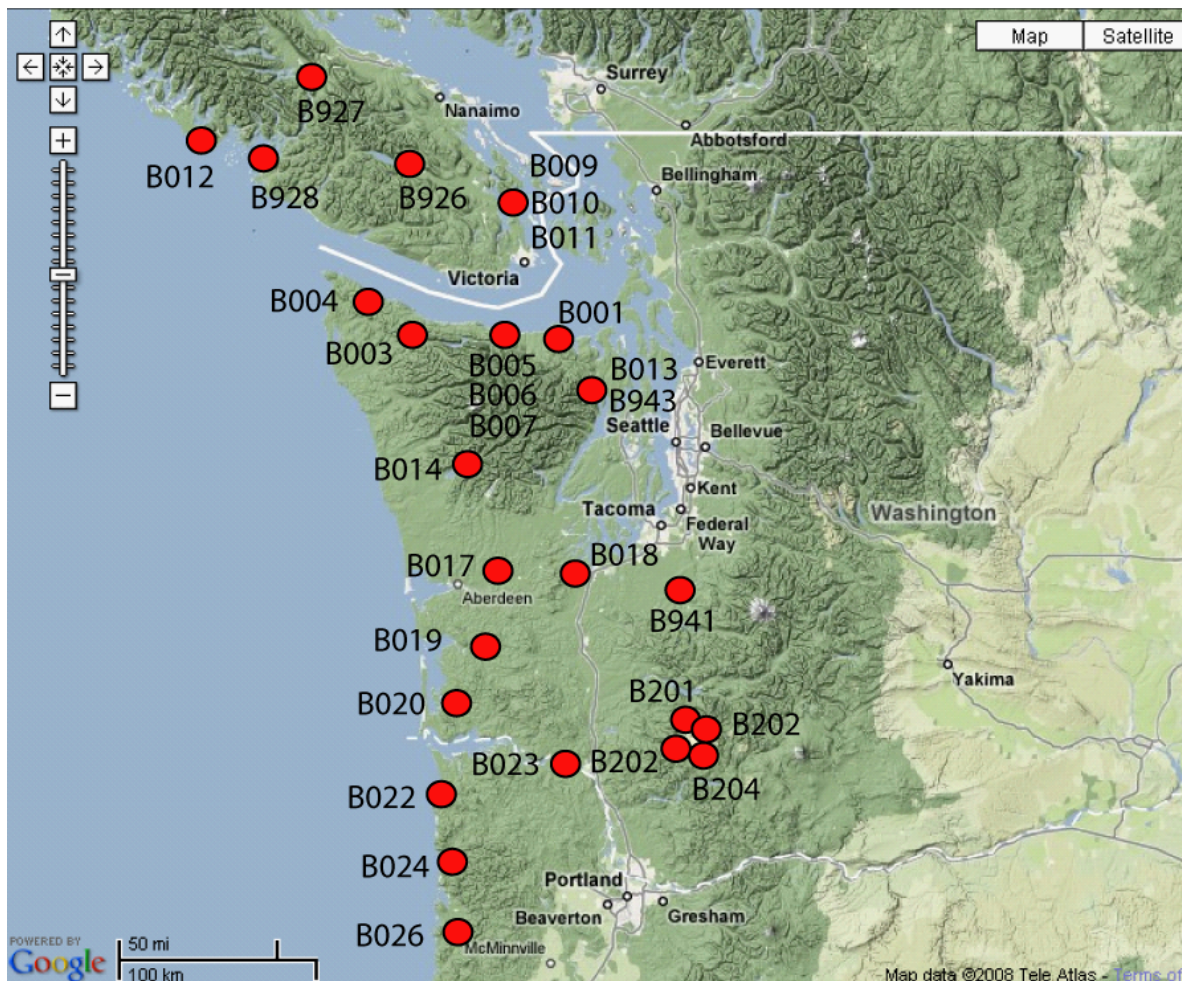


Station Notes for B004, hokofallsbwa2005

Latitude:	48.202 (WGS 84)
Longitude:	-124.427 (WGS 84)
Elevation:	30 m / 98 ft
Install Depth:	166 m / 545 ft
Orientations:	CH0=168.2 CH1=108.2 CH2=48.2 CH3=18.2
Install Date:	15 June 2005
GTSM Technologies #:	US00
Executive Process Software:	Version 1.14
Logger Software:	Version 2.02.2
Home Page:	www.unavco.org/instrumentation/networks/status/pbo/overview/B004
Notes Last Updated:	December 23, 2020

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

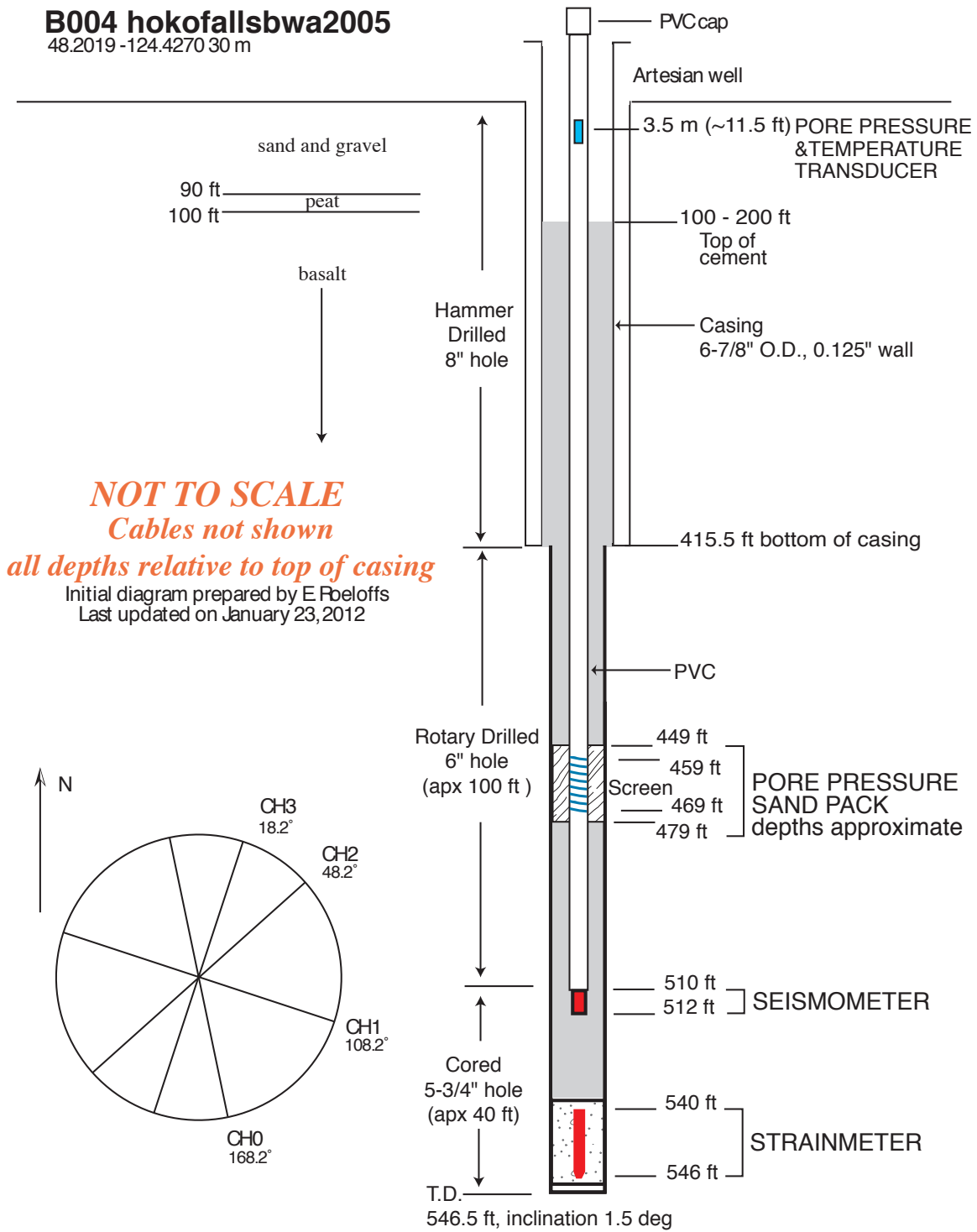
·Orientations are in degrees East of North.



Pacific Northwest PBO strainmeter network, April, 2008

B004 hokofallsbwa2005

48.2019 -124.4270 30 m



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	1.0	1.42937E-4

1. General Information

- B004 was the first strainmeter installed as part of PBO.
- Operator logs show environmental door as always open.
- November 9, 2006. Record amounts of rain fell on the Olympic Peninsula between the 1st and 9th November 2006. For water levels in the Hoko River see http://waterdata.usgs.gov/wa/nwis/uv/?site_no=12043300&agency_cd=USGS.
- Due to extended downtime the 1 sample per second data for June 22-23, 2007 were lost.
- Sensitivities of all EH channels corrected on March 4, 2010.
- The pore pressure sensor was installed at 11.5 feet, and no packer was installed. The pipe was flowing artesian and is sealed at the surface using a pvc cap with a pass-through for the cable sealed with epoxy.

2. Strainmeter Maintenance

- Jun 23, 2005 - USB data copy performed.
- August 15, 2005 - Tim Dittmann and Mike Hasting replaced the GPS chip and reassembled.
- Logger shut down and restarted on July 27, Oct 27, 2005, May 25, June 1, Aug 15 2006 (2 times).
- June 17, 2005. Logger restarted twice.
- July 29, 2005. Logger restarted.
- Aug 11, 2005. Logger restarted.
- Nov 1, 2005. Logger restarted.
- December 21, 2005. Maintenance visit by Mick Gladwin GTSM Technologies. Mick observed the enclosure was very wet. Lightning protection diodes were added and rain gauge was fixed.
- Dec 22-24, 2005. Logger restarted 6 times.
- April 19, 2006. Wade Johnson added a NetRS to system to record pore pressure at B004.
- July 19, 2006. Mike Hasting and Herb Dragert ran tests on pore pressure monitor. They opened the seal on top of the PVC pipe water and methane came out of the pipe. Pore pressure dropped when they opened the seal and started increasing when it was resealed.
- August 11, 2006. Mike Hasting upgraded the B004 GPS firmware.
- January 29, 2007. Michael Hasting visited the site. The connector on the seismometer was replaced to correct the problem on the Z channel.
- January 29, 2008 UTC. Mike Gottlieb visited the site to get it back online.
 - 21:00 - On site.
 - 21:05 - Power cycle Cisco router, site back online.
 - 21:45 - Off Site.

- January 27, 2009 UTC – Wade Johnson visited the site to get it back online. The outage was due to the VSTAT power supply failing. He also unplugged the rain gauge while he was there.
- March 31, 2009 – Logger software upgraded to 2.02.2
- August 15, 2009 – Korey Dausz visited the site and noted corrosion on the battery port of the power box.
- November 19, 2009 – Wade Johnson was onsite from 14:00 to 16:30 local time. When he arrived onsite the comms were off line. Wade tried to reboot the VSAT without any luck, and rebooted the Cisco. He removed the white marmot and replaced it with a blue marmot. He removed the NetRS and moved the pore pressure over to the Q330. He programmed the IP info into the Marmot and set up a serial session on the Q330. Wade also found a broken connector on the cable going to the receiver on the ODU. Wade replaced the connector and the comms came back up.
- September 8, 2010 – Replaced the oscillator board from 11:25 – 11:35 PDT.
- August 2, 2011 – NetRS was removed from the site.
- August 15, 2011 – Liz Visited the site to try and get it back online. She connected to the IDU to check the system failure status, which is a transmit of only 15%. To test the system she replaced the IDU, power supply, cable, all with no change. She was about to replace the ODU, but the VSAT dish is an older model, where the pol. setting is on the ODU and not the dish. She attempted to re-point the dish, but the transmit percentage never changed from 15%. The VSAT dish needs to be updated. She also attempted to pull the data off the GTSM, but due to the fact that it is an older GTSM with a smaller card size, her thumb drive size was too large (8M) and was rejected each time. The current plan is for Wade and Liz to visit the site August 23 and update the VSAT dish, to restore comms.
- August 23, 2011 – The old IDU appeared to be off, but it was realized the lights were dim. This may have been the original IDU. The outdated VSAT dish and ODU were removed. The top of the post was cut down and the correct size pipe was placed in the old pipe, leveled and secured. A new dish and ODU were re-pointed and all cable ends were re-terminated. A new IDU was left in the site (UNID 30332).
- December 21, 2011 – The 4-port F.O. data port was completely wet and had failed. The data port was replaced and moved off to the side of the older enclosure to avoid water. The surge protector was replaced with the BSM site standard surge protector. The new one was lifted from the floor. It should be noted the transmit light on the IDU is out.
- July 11-12, 2012 – The hut was upgraded.
On Site: Travis Pitcher, Charlie Sievers, Ken Austin, Wade Johnson, and Liz .
The old enclosure was removed 11 July and the cement pad was built the same day. There was some erosion and undercutting of the old pad, so we extended the new pad completely around the older one and made sure the cement filled in under the old pad. On 12 July the new enclosure was added and the site was reconstructed. The VSAT cable and batteries were replaced, as they were the original items with the site in 2005.
- July 16-17 2012 A temporary broadband seismometer was deployed.
- August 15, 2012 – Three batteries were added to the main battery bank. The site now has nine batteries total. 2 on the GTSM side and 7 in the main battery bank, with a bank of three and a bank of four. Diatomaceous earth was added to the floor of the site to help deter insects.
- February 5, 2013 – Rain gauge was clogged with moss/slime, and was cleared. A Metpack was installed.
- March 20, 2013 – Double-checked top of rain gauge, still clean after removing slime and moss from last time. Liz went to check the soldering job on the power box end and notice it

was not even plugged into the power box. She plugged in the rain gauge and tipped it twice. While at the site she tested the strength of the MetPack pole installed during her last visit. The pole and pack were solid and did not twist. She walked away from the site and the N direction with the iphone and notice it was roughly 30 degrees to the NW. She used the iphone to set up the MetPack. She decided to come back with a handheld compass check the orientation of the MetPack. Finished securing the GTSM Power Box and GTSM data port, and completed securing equipment at the site.

- March 21, 2013 – Liz adjusted the MetPack N direction using both a handheld and iphone compass. The VSAT mount was filled with expansive foam. There were a few yellow jacket nests in there.
- July 10, 2013 – When Liz arrived onsite the Marmot status light was blinking red. Rebooting the Marmot did not change anything so a new marmot was installed. The GTSM quads and chops were adjusted, and the Metpack port was sealed.
- January 5, 2014 – Station lost GPS time on Dec 31, 2014. Chad sent the GPS coldstart command to fix the timing issue.
- September 10, 2015 – Rain gauge had become clogged, had been returning 0.5cm since September 2, 2015. Liz E-mailed the site contact and they cleaned out the rain gauge. Hardly any debris on the top screen, the throat was plugged with congealed smudge.
- October 7, 2015 – Adjusted chops and quads.
- February 27, 2019 – Site was off-line. The area had a snowstorm, resulting in power outages and a power surge. All equipment was powered down. The Iota battery charger had a blinking green light and the Triplite power strip appeared to be on. GTSM batteries were at 12V and Main battery bank at 11.2V. Plugged in iPhone to Triplite and no power. GTSM - hit reset on the power box and turn on GTSM. Swapped out Triplite power strip/surge protector and observed battery charging. Once batteries were above 11.5 V power cycled LVD to force equipment back on. Could ping all equipment. Once the batteries were at 12.60V attempted to force comms LVD. It stayed on for a few minutes then switched off. While on could ping VSAT and router. All lights on VSAT come on. Receive @ 81% and cross pole passes at 62%. Adjusted GTSM chops and quads. Both were stable when first observed, very minor changes.
- May 7, 2019 – Removed damaged VSAT dish. Rebuilt and repointed new VSAT dish. Used ODU from old dish. The DC IDU power inverter failed. IDU is on an AC power inverter plugged into the triplite surge protector/outlet strip. Could not ping Marmot while on-site. Lights were on. Could get a Marmot command prompt through a serial connection, but a different interface than what is normal, should be swapped.
- June 13, 2019 – Could not connect with the Marmot remotely, replaced Marmot.
- October 14, 2020 – Seismic dataflow has stopped. Swapped Q330 and set up pore pressure and Setra. Cleared out logged rain gauge. Upgraded GTSM CF card to 1GB.