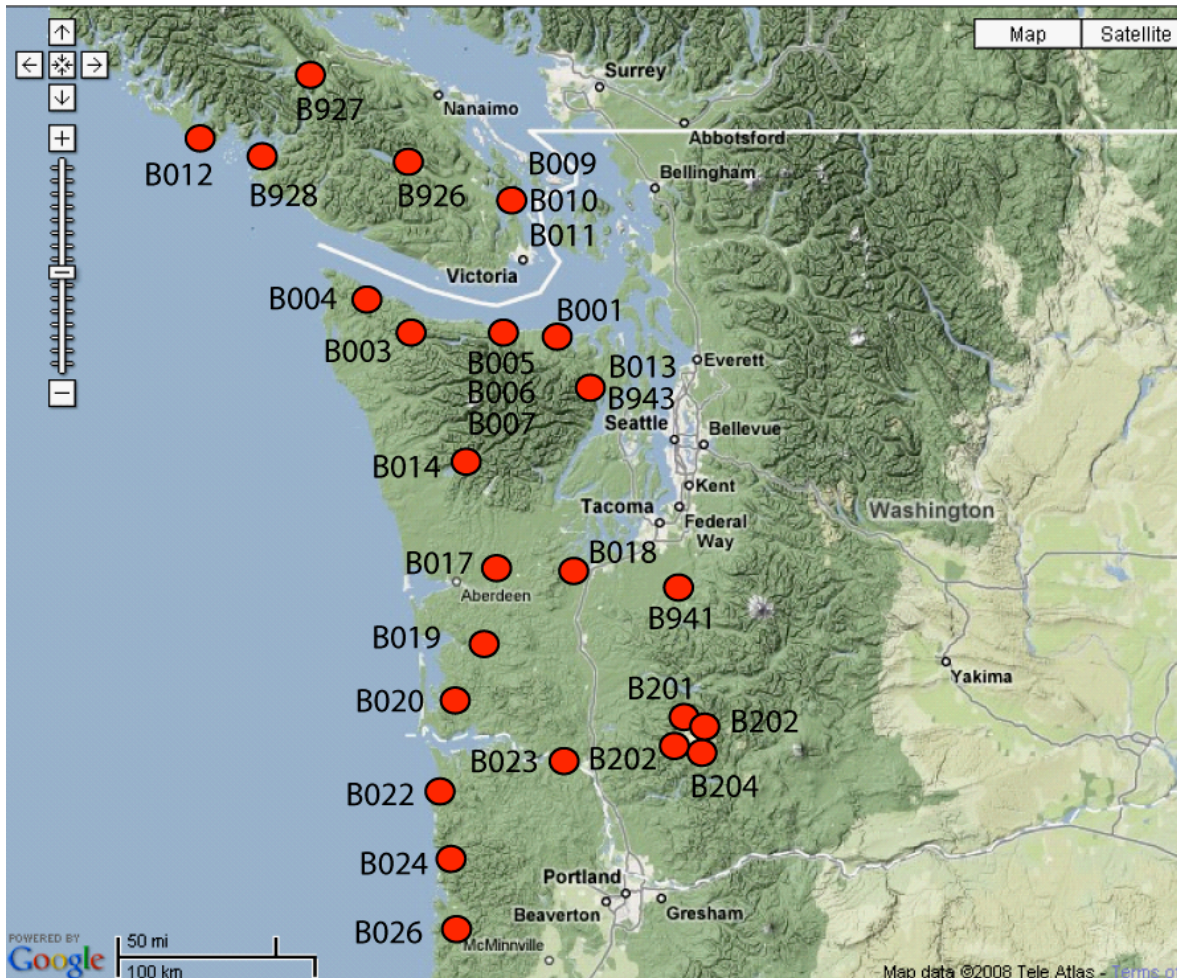


Station Notes for B024, Kuntz, kuntza024bor2006

| | |
|-----------------------------|---|
| Latitude: | 45.6378(WGS 84) |
| Longitude: | -123.8558 (WGS 84) |
| Elevation: | 37.7m / 124 ft |
| Install Depth: ¹ | 220.4 m / 723 ft |
| Orientations: ² | CH0 = 321.7, CH1 = 261.7, CH2 = 201.7, CH3 = 171.7 |
| Install Date: | February 22, 2006 |
| GTSM Technologies #: | US10 |
| Executive Process Software: | Version 1.14 |
| Logger Software: | Version 2.02.2 |
| Home Page: | http://pbo.unavco.org/station/overview/B024 |
| Notes Last Updated: | February 14, 2018 |

¹Install depth is from the top of the casing to the bottom of the strainmeter.

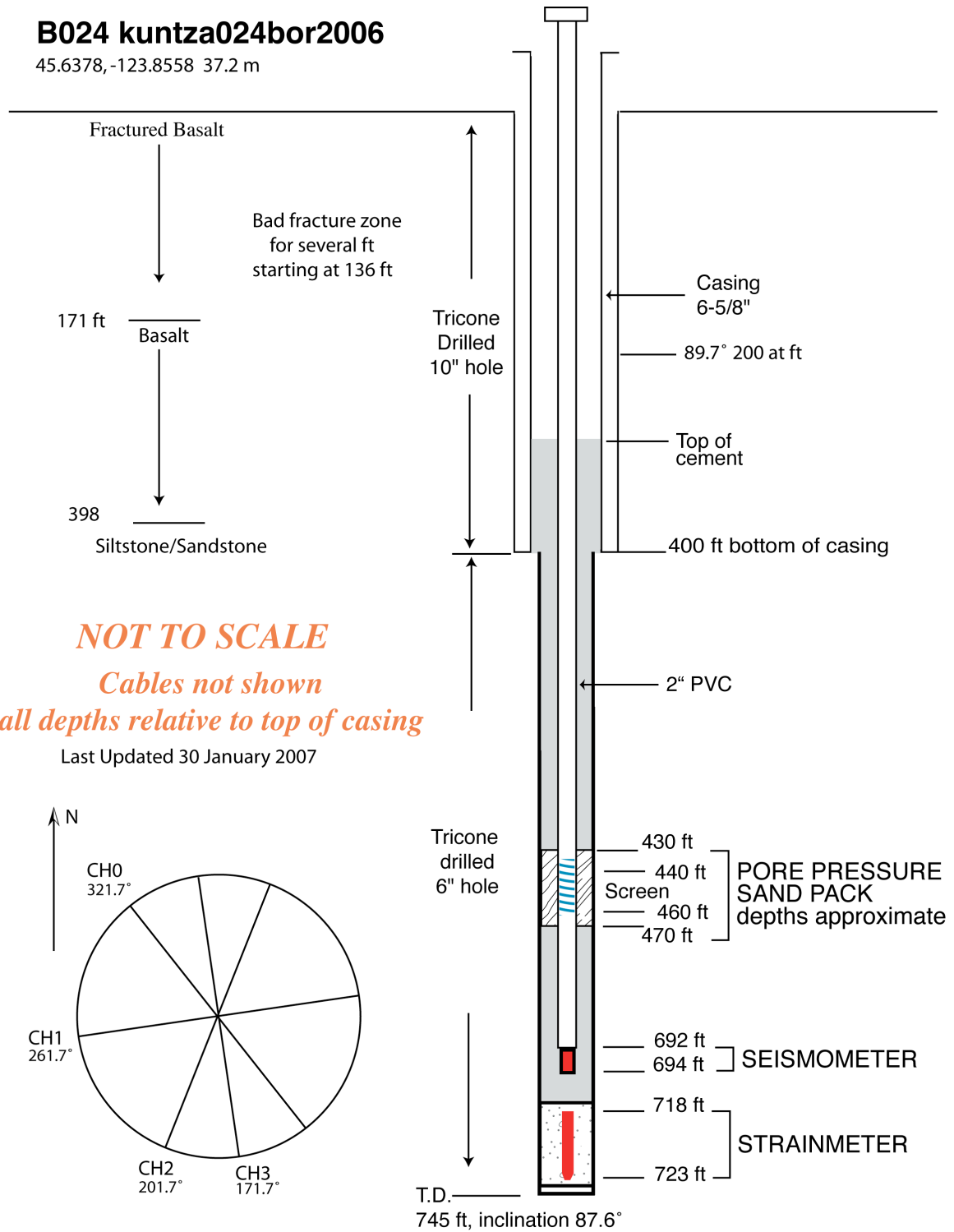
²Orientations are in degrees East of North.



Pacific Northwest PBO strainmeter network, April 23, 2008

B024 kuntza024bor2006

45.6378, -123.8558 37.2 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 | 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 | unknown |

1. General Information

- The pore pressure sensor has not been installed.
- Sensitivities of all EH channels corrected in the dataless on March 4, 2010.

2. Strainmeter Maintenance

- January 19, 2007 – Wade and time visited the site. They found a corroded connector that caused a power failure. Everything in the site was very wet and when the VSAT powered up it fried, so we won't have coms until Mike replaces the indoor unit.
- February 1, 2007 – Michael Hasting got the site back up and running. He installed a new DW6000, installed a Cisco router for VPN at the site, installed a new Q330, installed a rain gauge, Adjusted the downhole temperature setting, sealed a few cable entry points with caulk, installed weather stripping around doors, and checked the status of the TEG.
- February 2, 2007 – Michael Hasting tested the rain gauge to make sure it worked, and installed a Setra barometer onto channel 4 of the Q330
- April 28, 2007 – Micheal Hasting visited the site. Upon arrival the TEG was running and was in the "remote" auto start mode. However the communications FO modem was not working so it could not communicate with the Q330 or router. Wiggling the power lead to the FO modem brought it back up and he was able to talk to the Q330. Because the power was out so long the batteries for the GTSM were down to 3.5V so it was not running. He pulled one of the batteries off of the TEG system, which now has 3, and put it onto the GTSM. This battery was only one at 12.2V and after only a few minutes of charge by the GTSM the positive lead fuse on the power isolation unit failed. He found a 10amp circuit breaker at a boat shop and put this in instead of the 6 amp fuse. After 1.75 hrs of charging the breaker was holding and the GTSM was charging the battery. It will take a few days for the battery to come to full charge. Bringing up the GTSM was problematic. When it came up it was showing that it was in "event" mode and measuring "event max" instead of the normal "measure max" mode on the controller boards. He tried to reboot the logger but the system would not let him put it into safe mode for shutdown. I then tried to log onto the GTSM via SSH and this would not work. I then tried the console port but this was not working, I later found out I had a bad null modem cable but it still would not communicate. Since I could not access it I did a hard reboot, still in event mode and no communications. I then powered down the unit again and pulled the board from the back panel, checked all the connections, reinstalled the board and power it back up. It then started working and I was able to talk to it via the communications port but could not ping any other IP device at the station or reach it via SSH. I was able to plug my computer directly into the GTSM Ethernet port and was able

to communicate with it. I replaced the single port FO modem on the GTSM side, still would not work, replaced the larger 5 port FO modem on the communications side and the system came up online. This modem was showing traffic on the FO side but appears there is a problem between the fiber and Ethernet ports.

- December 18, 2007 UTC – Chuck Kurnik visited the site.
19:10 - Onsite. Chuck attempted to start the TEG, but did not succeed. Troubleshooting per the manual, the following was found:
 - Insulator on spark igniter was broken.
 - Igniter battery was dead.
 - TEG would not light manually.23:05 - Offsite.
- February 6, 2008 UTC – Chuck Kurnik visited the site.
17:35 - Onsite. VSAT pole mount is broken, request a new mount from Boulder. Sarah Doelger showed up to assist with TEG removal. Pole stand is cemented in and they were unable to remove it. Sarah leaves with TEG, old batteries, and pole mount. Chuck installed a new AC backpanel, new batteries, and rewired all power connections.
01:30 Offsite.
- February 7, 2008 UTC – Chuck Kurnik visited the site.
Install new VSAT mount, rewire all hut comms, point VSAT, and call in site to Steve Smith. CH1 was problematic and GPS time was not set. Only 999999's are being recorded. All other equipment on line and functioning properly.
02:45 Offsite.
- Fri Mar 27 06:05:19 UTC 2009. Logger Software Version upgraded from 1.16.1 to Version 2.02.2.
- June 4, 2009. Liz Van Boskirk. Boards were swapped.
- July 16, 2009. Korey Dausz. VSAT ODU replaced, IDU and power source replaced, unable to get back on line. Q330 GPS Antenna moved for better reception. RT0 Channel inoperable, tried power cycle and RT upgrade.
- August 5, 2009 – Korey Dausz visited the site to replace the VSAT IDU and get the station back online.
- November 18, 2009 – Mike Gottlieb visited the site to get it back online. The LJlogger was hung, could not reach through ssh or hyperterminal. Mike restarted the logger, and site returned to normal operation. He also noticed the rain gage was clogged and full of water. The data (at least from this recent storm, and potentially going back a ways) should be disregarded or at least known to be suspect. He cleaned out the debris, and data after 11:00 PST on 11/18/09 should be accurate again.
- December 8, 2009 – Wade swapped the logger board, and worked on the Q330 timing issues. Wade screwed the GPS antenna connector back together. While Wade was tightening the logger board screws the logger rebooted. Just touching the logger board can cause the logger board to freeze or turn off. Not long after Wade left the logger went back down.

- January 14, 2010 – Wade Johnson replaced all of the uphole GTSM equipment.
- February 9, 2010 – Mike Gottlieb visited the site with Friesen and Kasmer. They removed the old hut, replaced it with a new one, and installed electronics rack. Station was offline from 08:00 – 11:00 PST.
- January 27, 2012 – The Marmot was rebooted. The strainmeter was shut down. The logger board, Osc board and RT board were pulled and reseated and checked for corrosion. The strainmeter cable was checked for corrosion and reseated. The RT board, Ch0, was replaced. The quadratures were checked and adjusted for all Channels. The rain gage was clogged with pine needles, which were removed. The power adapter was raised from the enclosure floor.
- April 18, 2013 – Liz visited the site. The locks were rusty and she was only able to get into the GTSM side of the enclosure. She adjusted the chops and quads. The adjustments were small, but she had a hard time getting CH0 in phase. There were no desiccants at the site, so Liz left some in an empty water bottle. Diatomaceous earth was added to half the enclosure floor. The GTSM power box was secured with Velcro tape. The rain gauge was cleaned out. The GTSM firmware was upgraded from version 1.18 to version 1.20. Liz installed a MetPack onto the side of the enclosure. Installation will be completed once she is able to open the rusted lock.
- May 2, 2013 – Liz installed a MetPack. She also rearranged the equipment and strapped it to the equipment rack. The Equipment wiring was re-organized. The site batteries were swapped. Diatomaceous earth was added to the site.
- October 23, 2013 – The station was hit by lightning on September 29, 2013. When Mike arrived on site all channels were flat lined at G1/G2, and the tap steps for Ch2 and Ch3 were 0.00. GTSM system was rebooted at 10:30 Pacific time. After the reboot the status reports looked good. Quadrature on CH1 were off and were adjusted, the other 3 looked good and were not touched. The rain gauge was clogged, and was dumped and cleared.
- April 8, 2014 – Liz visited the site and cleared a blackberry bush. She made minor adjustments to the quads and chop. She turned off the GTSM and re-seated the oscillator board and swapped out the CH0 RT board.
- April 15, 2014 – Re-seated all connectors going into the GTSM environmental box.
- August 3, 2016 – Tested capacitance and resistance of downhole instruments.
- September 22, 2016 – CH0 started flat lining again. Shut down strainmeter. Reseated CH0 RT board and Oscillator board. No corrosion was found. Reseated connections between the Environmental box and Power box, and connections between the Power box and GTSM battery bank. Turn GTSM turned back on.
- March 16, 2017 – Annual visit to adjust chops and quads.
- December 8, 2017 – Landowners cleaned out rain gauge.

