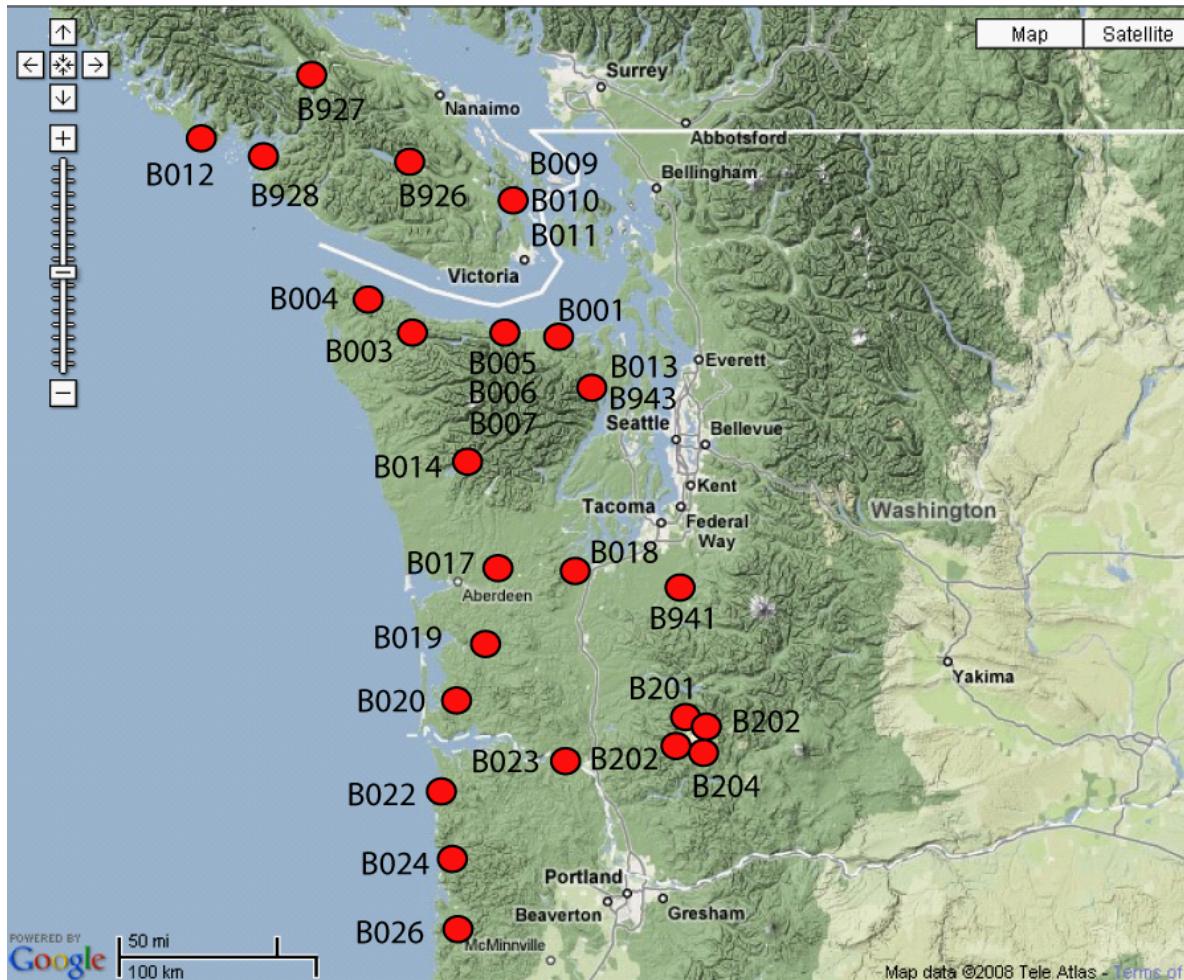


## Station Notes for B001, golbeck01bwa2005

Latitude:	48.04307 (WGS 84)
Longitude:	-123.13141 (WGS 84)
Elevation:	237 m / 778 ft
Install Depth:	152.9 m / 501.5 ft
Orientations:	CH0= 200.2, CH1= 140.2, CH2= 80.2, CH3= 50.2
Install Date:	2005-06-21
GTSM Technologies #:	US01
Executive Process Software:	Version 1.14
Logger Software:	Version 2.02.2
Home Page:	<a href="http://www.unavco.org/instrumentation/networks/status/nota/overview/B001">www.unavco.org/instrumentation/networks/status/nota/overview/B001</a>
Notes Last Updated:	December 14, 2020

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

·Orientations are in degrees East of North.



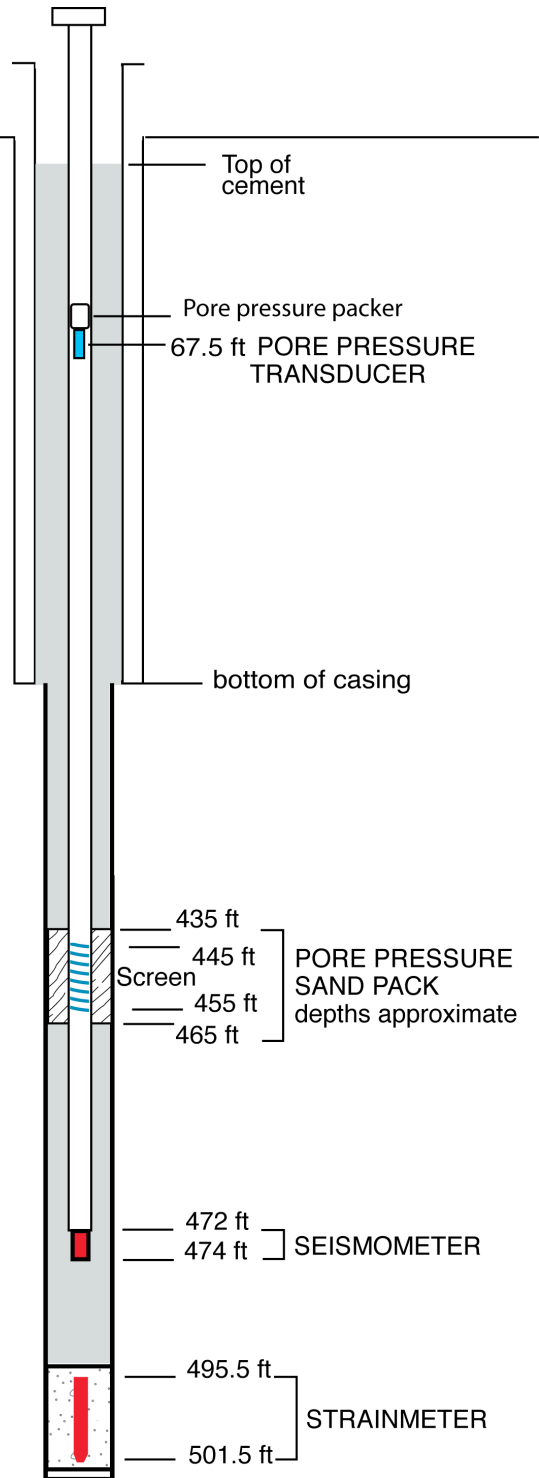
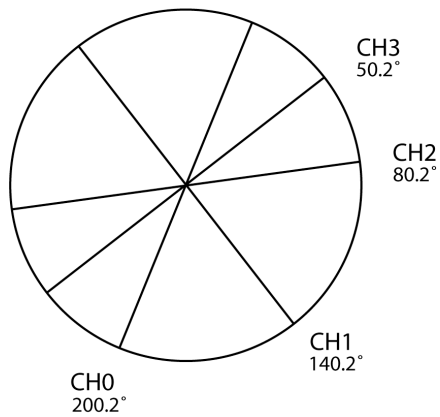
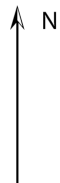
Pacific Northwest PBO strainmeter network, April, 2008

# B001 golbeck01bwa2005

48.04307 -123.13141 237 m

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

Last updated on January 13, 2012



### 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	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	1.0	1.42908E-4

## 1. General Information

- B001 was the second strainmeter installed by PBO. The strainmeter records signals caused by nearby hydrological pumping. The pumping occurs everyday may last from several minutes to several hours.
- November 10, 2005  
On 9 November 2005 the following files were replaced in the IRIS DMC and NCEDC archives  
    B001.2005.2005272074334.xml.bz2  
    B001.2005.2005280135639.xml.bz2  
    B001.2005.2005287203551.xml.bz2  
The files were replaced because the "/" was missing from the closing tag of the Modified Julian Date element (<MJD>). The strain values and associated time-series corrections were not changed.
- January 13, 2006  
All XML files written after January 10, 2006 (version number greater than 20060101000000) are written in PBO XML format V1.0.1. Each observation element now includes an offset element. The offset elements contain a running sum of all offsets that should be applied to the data to remove steps which are non-tectonic in original, for example, steps introduced by field tests. See the PBO Strainmeter Data products web page for the V1.0.1 documentation.
- 9 November, 2006. Record amounts of rain fell on the Olympic Peninsula between the 1st and 9th November 2006. For Dungeness River Levels see [http://waterdata.usgs.gov/wa/nwis/uv/?site\\_no=12048000&agency\\_cd=USGS](http://waterdata.usgs.gov/wa/nwis/uv/?site_no=12048000&agency_cd=USGS)
- The pore pressure sensor is installed at 67.5 feet with the packer inflated directly above the sensor.

## 2. Strainmeter Maintenance

- Sat Jul 2 11:15:11 - 17:35:38 2005. Logger restarted twice.
- Thu Jul 7 13:12:51 2005. Logger restarted.
- Tue Jul 12 18:25:51 - 19:03:17 2005 Environmental door opened
- Wed Sep 7 22:43:02 - 23:09:41 2005 Environmental door opened three times.
- Sep 13 19:41:34 - Sep 14 22:57:14 2005 Environmental door opened six times.

- Sun Sep 18 19:54:13 - 19:56:44 2005 Environmental door opened twice.
- Tue Sep 20 19:53:49 - 20:28:02 2005 Environmental door opened six times.
- Thu Sep 22 00:41:59 - Wed Sep 28 20:32:11 2005 Environmental door opened seventeen times.
- Sat Oct 8 19:53:02 - Sun Oct 9 23:22:33 2005 Environmental door opened seven times.
- Tue Oct 11 18:28:07 - Thu Oct 13 21:41:45 2005 Environmental door opened eighteen times.
- Sat Oct 15 22:20:57 - Sun Oct 16 00:20:01 2005 Environmental door opened nine times.
- Wed Oct 19 21:58:24 - Sat Oct 22 23:45:13 2005 Environmental door opened 13 times.
- Tue Oct 25 19:07:09 - Wed Oct 26 19:23:09 2005 Environmental door opened five times.
- Thu Oct 27 02:04:47 - 02:07:19 2005. Logger restarted remotely.
- Thu Nov 3 21:22:30- 23:07:20 2005. Environmental door opened twice.
- Mon Dec 19 23:40:47 - Tue Dec 20 21:33:07 2005. Maintenance visit by Mick Gladwin of GTSM Technologies. System shut down, protection diodes added.
- Wed Apr 12 01:11:28 - 01:14:19 2006. Logger shutdown and restarted. Environmental door opened.
- Maintenance visit by Wade Johnson. Added NetRS to record Pore pressure data.
- Thu May 25 05:01:00 - 05:06:38 2006. Logger shutdown and restarted remotely.
- Thu Jul 13 05:41:36 - Sat Jul 15 03:04:12 2006. Environmental door opened five times.
- Wed Aug 9 19:58:50 - 21:00:30 2006. GPS firmware and Ratio Transformer upgraded. Logger restarted.
- Sat Aug 12 15:56:29 - 15:56:32 2006. Environmental door opened.
- Mon Aug 14 05:30:58 - 05:32:58 2006. Logger restarted, no one at site.
- Tue Aug 15 03:28:52 -03:30:53 2006. Logger restarted, no one at site.
- Tue Sep 5 16:21:59 - 17:16:26 2006. Environmental door opened three times. Data flow stopped after this visit though the logger continued. The data were downloaded 18 October 2006.

- Mon Sep 11 04:51:03 - Wed Sep 13 02:25:44 2006. Environmental door opened nineteen times.
- Tue Sep 19 09:07:47 - 09:08:06 2006. Environmental door opened.
- Thu Sep 21 19:37:45 - 19:48:24 2006. Environmental door opened three times.
- Wed Sep 27 22:50:51 - Thu Sep 28 19:05:33 2006. Environmental door opened repeatedly.
- Sun Oct 8 01:19:11 - 07:35:45 2006. Environmental door opened several times.
- Tue Oct 10 01:31:37 - 07:25:51 2006. Environmental door opened three times.
- Wed Oct 18 23:17:26 - Thu Oct 19 20:43:16 2006. Environmental door opened three times. Mike Hasting visited B001. The power supply that runs the fiber optic modem, Netrs and seismic equipment had failed. The batteries were at 8 Volts. A new 15 amp charger was put in and the system came back up. A Vicor power supply was put into the GTSM21 system to see if there is any noticeable change in the noise. Low frequency data were collected throughout the dataflow outage from 5 September to 18 October 2006. 1-sps data were not recovered from 6 to 20 September 2006. 20-sps data were not recovered from 6 to 28 September.
- Fri Oct 27 01:06:40 - 02:53:42 2006. Environmental door opened ten times.
- December 16, 2006 – At 10:05:06 UTC the logger entered Standby, and didn't restart until December 18, 2006 at 23:52:50 UTC. (nobody visited the site)
- Jan 18, 2007 – At 01:00 UTC Wade Johnson rebooted the VSAT and the site came back online.
- November 2, 2007 UTC – Steve Smith visited the site to get the station back online. Steve had strongly suspected a bad cap in the F/O switch as all gear was working, but he could not ping the GTSM. This turned out to be the case. He also performed the normal maintenance stuff.
  - 01:30 - Onsite.
  - 01:37 - Doors open, take pictures.
  - 01:46 - Attempted replacement of F/O switch.
    - DC Connector/cable is "home made" and very intermittent.
  - 01:50 - Swollen cap on F/O switch.
  - 01:07 - Wired in a new DC cable (snipped cable/connector off wall wart).
    - F/O Switch now working 100%.
  - 02:25 - Offsite.
- December 19, 2007 UTC– Wade Johnson visited the site to get it back online.
  - 01:10 - Arrive on site. All equipment except the VSAT and Cisco were running. Cisco and VSAT were plugged into the battery side of a UPS. Wade moved plugs to the non-battery

backup side. Comms back up.  
01:30 - leave site.

- July 8, 2008 UTC  
19:10 - Mike Gottlieb arrived on site, he cannot ping strainmeter from router.  
19:30 - Swapped fiber optic modem (replacing old style with new ones), strainmeter back online.  
19:52 - Off site.
- 28 July 2008 PST  
13:40 - Steve Alm and Alan Stroeve on site, enclosure opened, comms are down.  
14:00 - Checked power and noticed breaker on meter panel was tripped. Flipped breaker on and comms come back online.  
14:10 - Ping GTSM, seismics, Marmot.  
14:25 - Add 3 batteries to strainmeter battery bank.  
14:45 - Enclosure closed, off site.
- January 27, 2009 – Wade Johnson visited the site to replace the 4 port fiber optic modem.
- March 17, 2009 – Wade Johnson upgraded the logger software to version 2.02.2
- November 21, 2009 – The white marmot was swapped out for the blue marmot.
- January 22, 2010 – Wade Johnson replace the OS board and the RT boards, data still does not look good.
- January 12, 2011 – Observed that ODU was very dirty, with the feedhorn overgrown with moss-like material. Also the transmit connector on ODU was corroded. Replaced the ODU and re-terminated the connectors. Station came back online. Additional weatherproofing was used on the new connectors.
- July 5, 2011 – Removed GPS receiver.
- September 22 - 23, 2011 – Hut was upgraded. Pad was extended and raised 3”, and equipment rack was installed. All batteries were replaced. The main battery bank consists of two banks of four, with a bank of two batteries for the GTSM. Added a rain gauge to the site. Site still needs a surge protector that is the BSM standard.
- December 22, 2011 – The surge protector was replaced with the BSM site standard surge protector. The new one was is lifted from the floor. It should be noted the transmit light on the IDU was out.
- June 13-15, 2012 – A temporary broadband seismometer was installed at the site.
- Aug 16, 2012 – GTSM boards were photographed and Diatomaceous earth was added to deter ants and other insects.
- Aug 17, 2012 – The Q330 was placed in the broadband hole and insulated.

- July 23, 2013 – Liz move the GPS around within the enclosure to see if she could get a GPS lock.
- July 25, 2013 – Liz replaced the power box and GPS.
- August 27, 2014 – Replaced the ODU. The fine adjustment part of the mount could not be loosened and the mount is no longer level. The VSAT mount should be replaced and support should be added to the pole. Adjusted quads and chops and added diatomaceous earth.
- November 10, 2015 – Rain gauge was clogged and water pooled in top, cleaned out rain gauge. Adjusted GTSM chops and quads. Refreshed GTSM desiccants. Replaced VSAT comms with LS300 w/ Verizon.
- July 7, 2017 – Cleaned out clogged rain gauge. Adjusted chops and quads. Updated strain\_logger.conf file to match power box. Disabled pressure pot.
- September 12, 2017 – Compact flash card had failed and no data was being saved. Installed a new logger board.
- October 3, 2017 – Logger board that was recently swapped in was still in test mode and could not be fixed remotely. Swapped in new logger board.
- March 6, 2018 – LS300 onsite would not connect to the network and listed the Verizon network as 2G. Replaced with RV50 with Verizon service. Removed brush overgrowing site enclosure.
- August 2, 2018 – Replaced batteries and power box, station came back online. Tested rain gauge to make sure it was set up correctly. Replaced 4 port fiber modem.
- November 6, 2018 – Adjusted barometer offset, subtracted 1.43 kpa.
- October 13, 2020 – GTSM was on when arriving on-site. Could not connect to the GTSM, traced the ethernet connection all the way back to the GTSM. Rebooted logger board. Could connect to GTSM remotely again. Cleared out clogged rain gauge. Swapped out white redbull antenna with black redbull antenna. Power cycled Marmot twice. Cannot connect remotely or through serial connection while on-site.