

C. HORIZONTAL AND VERTICAL CONTROL

A complete description of horizontal and vertical control for survey H12128 can be found in the *M-N928-KR-09 Horizontal and Vertical Control Report*, submitted under separate cover. A summary of horizontal and vertical control for this survey follows.

Real-time navigation logged during acquisition was overwritten with a post-processed navigation solution created from Applanix POSPac MMS using the SmartBase option. GPS reference stations from the National Geodetic Survey (NGS) National and Cooperative Continuously Operating Reference Stations (CORS) or the UNAVCO (University NAVSTAR Consortium) Plate Boundary Observatory (PBO) were used during each post-processing session. Table 7 lists the reference stations used in the network subdivided by data provider. North American Datum of 1983 (NAD83) coordinates of the base stations are included in the *M-N928-KR-09 Horizontal and Vertical Control Report*.

Table 7. GPS Base Stations Used During SmartBase Processing

NGS	UNAVCO	UNAVCO
CABL	P365	P405
CHZZ	P374	P407
CORV	P375	P408
FTS5	P395	P411
FTS6	P396	
LFLO	P397	
P367	P398	
P415	P402	
PABH	P404	

Post-processed uncertainty estimates for position, attitude, and heading were applied using the HIPS Load Error Tool and used during the calculation of TPU.

C1. Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). To improve vertical accuracy of this survey, soundings were reduced to MLLW using post-processed GPS water levels.¹³ The VDatum derived separation model, *COrgGRS.bin*, was used to reduce soundings from NAD83 ellipsoid heights to MLLW as described in the *M-N928-KR-09 DAPR*. The separation model has been included with the digital deliverables.

Traditional zoning from water level stations was not used for this project, though zoning provided by Center for Operational Oceanographic Products and Services (CO-OPS) and verified water level files for the survey have been included with the digital deliverables.