

## C. VERTICAL AND HORIZONTAL CONTROL

### C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Pensacola, FL (872-9840) serves as datum control for Survey H12062.

The survey area is located within Zones CGM8 and CGM29 as provided in the preliminary tidal zoning scheme included with the project SOW CD. Based on the results of cross line analysis, it appears that the time and range factors as provided in the preliminary zoning scheme are adequate.

OSI home office and field personnel monitored preliminary tide data available on the NOAA CO-OPS website. The NOAA Pensacola (872-9840) gauge experienced a series of preliminary tide gaps between February 17 and 18 (DNs 048 and 049). The largest gap was 5 hours in length; however, it did not coincide with data acquisition. All gaps were filled by CO-OPS prior to issuance of verified tide data.

### C.2 Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). All data products are referenced to Latitude/Longitude or Universal Transverse Mercator (UTM) Zone 16, meters.

All primary position data were acquired using an Applanix POS MV operating in Differential GPS (DGPS) mode. The unit was configured to receive USCG Differential beacon correctors from Eglin Air Force Base, FL. Differential beacon correctors from the U.S. Coast Guard station in Mobile Point, AL, were used by the secondary navigation system to facilitate real-time horizontal control confidence checks. On May 4, 2010 (DN 124), there was a period of approximately six hours when correctors from Eglin Air Force Base could not be received. During this time, the differential correctors from Mobile Point were used for the primary system. Initial dynamic draft and patch calibration data (for each vessel) were acquired with the POS-MV operating in RTK GPS mode.

Prior to and during the course of the survey the accuracy of the primary positioning system was verified by means of a physical measurement to a project horizontal control point established at each vessel's berth. The horizontal control points were established using the National Geodetic Survey's Online Positioning Users Service (OPUS) technology. Position confidence checks were accomplished daily on *R/V Able II* and at least bi-weekly, for the *R/V Ferrel*. Refer to the DAPR and Horizontal and Vertical Control Report (HVCR) for additional details.