

C. VERTICAL AND HORIZONTAL CONTROL

No vertical or horizontal controls were established, recovered, or occupied during data acquisition for OPR-D302-KR-12, which includes H12396. Therefore a Horizontal and Vertical Control Report was not required.

C.1 VERTICAL CONTROL

The vertical datum for this project is Mean Lower Low Water.

Standard Vertical Control Methods Used:
Discrete Zoning

The following National Water Level Observation Network (NWLON) stations served as datum control for the survey:

Station Name	Station ID
Duck, NC	8651370

Table 8: NWLON Tide Stations

File Name	Status
8651370_verified_07052012_09302012.tid	Verified Observed

Table 9: Water Level Files (.tid)

File Name	Status
D302KR2012CORP.zdf	Final

Table 10: Tide Correctors (.zdf)

No final tide note was provided by the NOAA Center for Operational Oceanographic Products and Services (CO-OPS). SAIC is not required to have a final tide note from CO-OPS for H12396 however a final tide note has been provided by SAIC in Appendix I.

The Project Instructions specified NOAA tide station 8651370 Duck, NC as the source for water level correctors. A full explanation of the tide zone assessment is detailed in Section C.4 of the DAPR, rev1. For H12396, 8651370 Duck, NC was the source of all final verified water level heights for determining correctors to soundings.

SAIC did not revise the delivered tide zones for tide station 8651370 Duck, NC as the water level zoning parameters in the file D302KR2012CORP.zdf, provided by National Ocean Service (NOS) were deemed adequate for the application of observed verified water levels. As a result, they were accepted as final and applied to all H12396 multibeam data.

C.2 HORIZONTAL CONTROL

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The survey data for sheet H12396 were collected in horizontal datum North American Datum of 1983 (NAD-83), using geodetic coordinates, while data display and products used the UTM Zone 18, North projection.

Please refer to the DAPR, rev1 for details regarding all antenna and transducer offsets.

Horizontal positioning of the multibeam transducer by the POS/MV was verified by frequent comparison checks against an independent Trimble DGPS system. During survey data acquisition, the **ISS-2000** real-time system provided a continuous view of the positioning comparison between the POS/MV and the Trimble DGPS. An alarm was triggered within **ISS-2000** if the comparisons were not within an acceptable range. Any soundings with total horizontal uncertainties exceeding the maximum allowable IHO S-44 5th edition Order 1a specifications were flagged as invalid and therefore not used in the CUBE depth calculations. Daily positioning confidence checks for H12396 were conducted several times throughout the day and a daily value is presented as a standalone table within Separates I, “Daily Positioning Confidence Checks”. All daily positioning confidence checks for H12396 were within 0.45 meters.

The following USCG DGPS Stations were used for horizontal control:

DGPS Stations
Driver, VA (289 kHz)
Annapolis, MD (301 kHz)
New Bern, NC (294 kHz)

Table 11: USCG DGPS Stations