

C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying Horizontal and Vertical Control Report (HVCR) for Project OPR-K354-KR-17.

C.1 Vertical Control

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

Traditional Methods Used:

Discrete Zoning

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

Station Name	Station ID
LAWMA, Amerada Pass, LA	876-4227

Table 12: NWLON Tide Stations

File Name	Status
8764227.tid	Verified Observed

Table 13: Water Level Files (.tid)

File Name	Status
K354KR2017rev.zdf	Final

Table 14: Tide Correctors (.zdf or .tc)

A final verified tide file was created from verified water level data from the primary tide station LAWMA, Amerada Pass, LA (876-4227) obtained from the CO-OPS website upon completion of survey operations. Discrete zoning methods were utilized to apply tide correctors in CARIS HIPS. The survey area is located within Zones 236, 191, 66, and 65 as provided in the preliminary tidal zoning scheme included with the project SOW.

Final project data are delivered with verified tides applied using a slightly altered version of the preliminary zoning file provided by CO-OPS, "K354KR2017rev.zdf." Neither time nor magnitude multiplier changes were made to the preliminary zoning file provided by CO-OPS. However, the CO-OPS provided zoning file was found to have a minor flaw in the 6th vertex of Zone #82. It was discovered during data processing that this vertex did not fall exactly on a nearby vertex of the adjacent zone (the presumed intention of CO-OPS). The result was a long, narrow, triangular area with no zoning coverage. The non-coverage triangle had two legs roughly 11.6 kilometers long with the third leg being only about 4 meters long. OSI adjusted the Zone #82 vertex which resulted in elimination of the non-coverage area. The OSI-edited zoning file included with the project deliverables uses the same name as noted above, i.e. the file name, as delivered by CO-OPS, was retained.

C.2 Horizontal Control

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

The projection used for this project is UTM Zone 15 North.

All data products, except the S-57 Final Feature File (FFF) are referenced to Latitude/Longitude, UTM Zone 15 North. The S-57 Final Feature File, H13043_FFF.000, is referenced to the World Geodetic System Datum of 1984 (WGS 84).

All MBES and SSS line and item investigation position data were acquired using an Applanix POS-MV operating in Differential GPS (DGPS) mode. The POS MV was configured to receive USCG Differential beacon correctors from the English Turn, LA station. A secondary GPS, used to facilitate real-time horizontal control confidence checks, was supplied with correctors from the Angleton, TX beacon. On two occasions during Survey H13043 USCG Differential beacon correctors from the Angleton, TX station were input to the POS MV on the R/V Ocean Explorer due to a relatively prolonged period of intermittent signal from the English Turn, LA beacon. In these cases the poor reception is believed to be attributable to foul weather between the English Turn, LA station and the survey area. The English Turn, LA outage on 9-14-2017 (DN 257) affected eight lines and lasted from approximately 04:45 to 10:23, and the outage on 10-11-2017 (DN 284) affected 12 lines and lasted from approximately 4:10 until 10:14.

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 horizontal control point established at the vessel's base of operation. The R/V Ocean Explorer's checkpoint was established at Shell Morgan Landing in the Intracoastal Waterway. Position confidence checks for this vessel were accomplished, when practical, during fuel or weather stops. Refer to the DAPR and HVCR for additional details. For the R/V Ocean Explorer, positioning system confidence checks were performed utilizing both DGPS signal sources mentioned above.

The following DGPS Stations were used for horizontal control:

DGPS Stations
English Turn, LA (primary), 293 kHz
Angleton, TX (secondary), 301 kHz

Table 15: USCG DGPS Stations