C. Vertical and Horizontal Control

A complete description of the horizontal and vertical control for survey H13212 can be found in the OP-J347-KR-18 Horizontal and Vertical Control Report (HVCR), to be submitted with the final survey for this project. A summary of horizontal and vertical control for this survey follows.

C.1 Vertical Control

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

ERS Datum Transformation

The following ellipsoid-to-chart vertical datum transformation was used:

Method	Ellipsoid to Chart Datum Separation File
ERS via VDATUM	NAD83-LWRP2007_RM13.4_MLLW2012-2016_Geoid12B.csar

Table 12: ERS method and SEP file

While ERS via VDATUM is listed in Table 12, it was one of the limited options available in the XML DR schema's enumerated values. The separation model covering the H13212 survey area was constructed by the HSD Operations Branch specifically for this survey project using NAVD88 (GEOID 2012B) to Mean Lower Low Water (MLLW 2012-2016) values. Refer to the HVCR submitted under separate cover for additional information.

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD 83).

The projection used for this project is Universal Transverse Mercator (UTM) Zone 16.

RTK

During acquisition, RTK correctors were obtained from Louisiana State University's (LSU) Center for Geoinformatics (C4G) service via a dedicated cellular modem in the extents of cellular coverage. The southern end of survey H13212 was outside of cellular coverage. In this area a RTK GNSS base station was installed at the NOAA Center for Operational Products and Services (CO-OPS) water level station at Pilot Station East in Southwest Pass. These correctors provided RTK level of accuracy for horizontal and vertical positions for all survey data. If a loss of service was experienced during acquisition it was noted by the field watch stander, and those data were further analyzed to be resurveyed. No prolonged outages were experienced while surveying on the network of H13212. Verification of the C4G network correctors were conducted by the field unit at various monuments established by USACE along the shoreline of the OPR-J347-KR-18 project area. The base station was positioned using the National Geodetic Survey (NGS) Online Positioning User Service (OPUS) and compared to an RTK position obtained from the C4G network. Methods, analysis and results of position checks are further documented in the project wide HVCR.