

## C. Vertical and Horizontal Control

Additional information discussing the vertical and horizontal control for this survey can be found in the DAPR rev 1.

### 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	OPR-E350-KR-19_NAD83_VDatum_MLLW.cov

*Table 11: ERS method and SEP file*

Refer to the DAPR rev 1 for details regarding the application of VDatum to the MBES data files. No final tide note was provided from NOAA Center for Operational Oceanographic Products and Services (CO-OPS). While a final tide note was not required, a final tide note has been provided by Leidos in Appendix I.

### 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 18.

#### PPP

The vessel kinematic data (POS/MV files) were post-processed in Applanix POSPac software using the Applanix PP-RTX solution to generate the Smoothed Best Estimate of Trajectory (SBET) solutions which were applied through SABER to the multibeam data. Refer to the DAPR rev 1 for additional information and for details regarding all antenna and transducer offsets. Any soundings with total horizontal uncertainties exceeding the maximum allowable IHO S-44 5th Edition Order 1a specifications were flagged as invalid and therefore were not used in the CUBE depth calculations.