

## A.7. Tide Gauges

In support of this survey, three tide stations were installed in May 2012 by JOA Surveys, LLC (JOA) of Anchorage, AK. Stations were installed at historic U.S. Coast and Geodetic Survey tide station Snag Point in Dillingham, AK (946-5374), Protection Point, AK (946-5056) and a new tide station at Clark's Point, AK (946-5261).

JOA installed two WaterLOG series DAA H350XL bubbler gauges at each site. Data from the tide gauges was monitored remotely via GOES and downloaded periodically throughout the survey to be combined with staff observations and meteorological data that was collected during the project.

The WaterLOG gauges were calibrated prior to the start of survey operations. In the field, they were installed in pairs for redundancy and as a check on each other. Additionally, their installation stability was checked weekly throughout the survey with staff shot observations.

In addition, Sea-Bird SBE 26plus Wave and Tide Recorder submersible tide gauges were set in six strategic deployment locations for minimum 17-day periods during survey operations. The gauges were synced to UTC and set to log at a 6-minute interval using a 180 second averaging period and logged to internal memory. The gauges were downloaded upon retrieval prior to re-deployment at other sites. Barometric pressure was logged concurrently with a digital barometer and used to provide atmospheric pressure corrections. Data from the gauges with accompanying staff observations was used to assist with tide zoning and to provide additional ellipsoid to MLLW ties. The Sea-Bird gauges were calibrated prior to the start of the survey season.

Final processing of the tide data was completed by TerraSond and JOA. Refer to the Horizontal and Vertical Control Report (HVCR) for detailed information regarding the calibration, installation and data processing procedures used for these stations.

### A.7.1. Tide Gauge Technical Specifications

WaterLOG H-350XL	
Pressure Sensor Accuracy	0.02% of full scale
Temperature Accuracy	1° C
Pressure Resolution	0.002%
Temperature Resolution	0.002%
Pressure Accuracy 0-15 PSI	0.007 ft
Pressure Accuracy 0-30 PSI	0.014 ft

*Table 13 – WaterLOG H-350XL tide gauge specifications.*