C. VERTICAL AND HORIZONTAL CONTROL

Refer to the Horizontal and Vertical Control Report for a detailed description of the horizontal and vertical control used during this survey. A summary of horizontal and vertical control used for the survey follows.

C.1 VERTICAL CONTROL

Vertical control for the survey was based on the Mean Lower Low Water (MLLW) tidal datum. A temporary gauge installed by John Oswald and Associates (JOA) at Craig, AK served as vertical control for the project area.

Station details are as follows:

		WGS84	
Gauge	**Location**	**Latitude**	**Longitude**
9450551	Craig Petro-Marine dock	55° 29.3' N	133° 08.5' W

C.2 ZONING

NOAA initially supplied tide zones and correctors relative to Sitka (9451600) in the Statement of Work (SOW), covering the extent of the survey area. During field operations tide data for the National Water Level Observation Network (NWLON) station at Sitka was downloaded from the CO-OPS website and these preliminary tide values were used to reduce depth soundings.

Following data acquisition JOA supplied verified tides for the temporary Craig gauge and new time and range correctors were computed for the tide zone areas provided in the SOW. The new zone correctors relative to the subordinate gauge at Craig were approved for final tide reduction by CO-OPS and these supplemental instructions are provided at Appendix V. The final tide zone parameters are presented in the table below:

Tide Zone	GS Identifier	Time Corrector	Range Corrector	Reference Station
SA227	TA1	+0 minutes	x 1.03	9450551
SA228	TA2	+0 minutes	x 1.02	9450551
SA229	TA3	+6 minutes	x 1.00	9450551
SA250	TA4	+0 minutes	x 1.00	9450551
SA227A	TA5	-12 minutes	x 1.06	9451600

For final tide application, the time and range correctors were applied to the smoothed tidal data provided by JOA. Soundings were then reduced to MLLW using these corrected tides. An analysis of depth benchmark and crossline comparisons, and overlaps of the mainlines of sounding concluded that final tide zoning was adequate.