

**Table 2 – DGPS Stations**

Station	ID	Latitude	Longitude	Freq.	Tx. Rate	Rx. No.	Wt.
Cold Bay, USCG	296	55°05'30"N	162°31'54" W	289	100BPS	1	1
Kodiak, USCG	295	57°37'06"N	152°11'36"W	313	100BPS	2	1

Positioning system confidence checks were conducted on a daily basis using the POS MV controller software. The controller software has numerous real time displays that were monitored throughout the survey to ensure the positional accuracies specified in the NOS Hydrographic Surveys Specifications and Deliverables (version June 2006) were achieved. These include, but are not limited to the following: GPS Status, Position accuracy, Receiver Status (which included HDOP) and Satellite Status. During periods of high HDOP and/or low number of available satellites survey operations were suspended.

### Vertical Control

All sounding data were initially reduced to mean lower low water (MLLW) using unverified tidal data from one tide station located on Mitrofanina Island, AK. A sub-contractor, John Oswald & Associates LLC (JOA), operated the gauge.

**Table 3 – Tide Gauges**

Gauge	Model	Gauge Type	Location	Latitude	Longitude	Operational
9459016	H350/355	Digital Bubbler	Mitrofanina Island, AK	55°53'22"N	158°49'11" W	May-July

**Table 4 – Final Tide Zones**

Zone	Primary			
	Site	Number	Time	Range Ratio
JOA001	Mitrofanina Island, AK	9459016	0	1.00
JOA002	Mitrofanina Island, AK	9459016	-6	1.00
JOA003	Mitrofanina Island, AK	9459016	-6	1.07
JOA004	Mitrofanina Island, AK	9459016	-12	1.00
JOA005	Mitrofanina Island, AK	9459016	-12	1.07
JOA006	Mitrofanina Island, AK	9459016	-12	1.14

Tidal data for a twenty-four hour period, UTC (Alaska Daylight Time to UTC was +8 hours), was assembled by JOA and e-mailed to the Ocean Pioneer at the end of every Julian Day. A cumulative file for the gauge was updated each day by appending the new data.

On September 9, 2006, JOA issued verified tidal data and final zoning for OPR-P182-KR-06. The tidal zoning was modified by JOA, providing a simpler zoning scheme from those issued in the Statement of Work (for additional information, refer to JOA’s Final Technical Report). From September 20, 2006 to September 22, 2006 all sounding data were re-merged using CARIS HIPS and SIPS tide routine. Verified tidal data were used for the final Navigation Base Surfaces and S57 Feature files.<sup>12</sup> Refer to the Vertical and Horizontal Control Report for additional tidal information and station descriptions.

## D – Results and Recommendations

### Chart Comparison

H11519 survey was compared with charts:

Chart Number	Scale	Edition	Edition Date as of Feb. 2006
OPR-P182-KR-06			
16006	1:1,534,076	33 <sup>rd</sup>	Dec. 2000
16011	1:1,023,188	36 <sup>th</sup>	Aug. 2004
16013	1:969,761	29 <sup>th</sup>	Nov. 2003
16556	80,000	4 <sup>th</sup>	Nov. 2002
16561	80,000	2 <sup>nd</sup>	Mar. 2005

### Comparison of Soundings

The soundings from chart 16556 coincide with the soundings from H11519 to within 1 to 3 fathoms; areas that do vary to any degree are as follows:

1. Hydrographic survey H11519 revealed a depth of 38 fathoms, located at 55°51’06.41” N, 159°01’35.76” W, which is in the vicinity of a 53 fathom sounding on chart 16556. This area was surveyed with 100% multibeam coverage.<sup>13</sup>
2. Hydrographic survey H11519 revealed a depth of 59 fathoms, located at 55°50’39.19” N, 158°55’34.40” W, which is in the vicinity of a 53 fathom sounding on chart 16556. This area was surveyed with 100% multibeam coverage.<sup>14</sup>