

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Horizontal and Vertical Control Report

Type of Survey _____ Hydrographic Survey _____

Field No. _____ H12115 _____

Registry No. _____ OPR-R144-KR-09 _____

LOCALITY

State _____ Alaska _____

General Locality _____ Central Bering Sea _____

2009

CHIEF OF PARTY

Brian Busey

LIBRARY & ARCHIVES

DATE _____ November 2010 _____

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HYDROGRAPHIC TITLE SHEET

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Control Report
OPR-R144-KR-09**

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD No. **H12115**

State Alaska

General Locality Central Bering Sea

Sub-Locality Pribilof_Canyon

Scale N/A Date of Survey June4th-June18th,2009

Instructions dated N/A Project No. OPR-R144-KR-09

Vessel R/V Mt. Mitchell

Chief of party Brian_Busey

Surveyed by TerraSond Ltd.

Soundings by echo sounder, lead line, pole Multibeam Echosounder

Graphic record scaled by N/A

Graphic record checked by N/A Automated Plot N/A

Verification by N/A

Soundings in fathoms feet at MLW MLLW Meters at MLLW

REMARKS:

Contractor: TerraSond Ltd. All times recorded in UTC

1617 South Industrial Way, Suite 3

Palmer, AK 99645

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Bering Sea sunrise from the Mt. Mitchell

Registry Number: **H12115**

Vessels: ***R/V Mt. Mitchell***

Survey: **A**

State: **Alaska**

General Locality: **Central Bering Sea**

Sublocality: **Pribilof Canyon**

Survey Dates: **June 4, 2009 to June 18, 2009**

Lead Hydrographer: **Brian Busey**

VERTICAL CONTROL

The time meridian for this project was 000° longitude. All measurements were made in Universal Time Coordinated (UTC). No measurements were recorded using local time. The local time meridian for the project was 135° West longitude and local time Alaska was offset from UTC by eight hours (Alaska = UTC - 8 hours). The Vertical Control for this survey is based on the Mean Lower-Low Water (MLLW) datum established at the Village Cove tidal station on St. Paul Island, AK (station ID of 9464212).

Tidal Corrections & Zoning

Sounding data was adjusted for tidal influence under provisions in the project instructions. Verified tide data was downloaded from the Tides and Currents data retrieval website (<http://tidesandcurrents.noaa.gov>). See *Appendix I* of this document for station information.

Secondary and tertiary tide stations were not established for this survey per instructions in the statement of work. No tidal zoning was used.

There were no unusual tidal water levels or current conditions observed during the survey.

Tidal elevations were applied directly from the tide gauge mentioned above; no time, height, or zoning corrections were employed per the Statement of Work.

HORIZONTAL CONTROL

The horizontal control datum used for this survey was the North American Datum of 1983 (NAD 83). The projection used was Universal Transverse Mercator (UTM) Zone 2 North.

Sounding position control was determined using a Global Positioning System (GPS). The primary source of navigation correctors was a C-NAV2050R unit, using the C-NAV global Correction Service Network. Manufacturer specifications indicate decimeter-level positioning accuracy, which meets survey requirements according to section 3.2.1 of NOAA Hydrographic Survey Specifications and Deliverables (HSSD) April 2008. C-NAV was utilized because DGPS positioning was not available for this survey as Pribilof Canyon is located outside the range of all Coast Guard Continually Operating Reference Stations (CORS). A brochure about CNAV service can be found in *Appendix III: CNAV Service Brochure* of this report.

C-NAV system confidence check was performed when the vessel was within range of the U.S. Coast Guard Continually Operating Reference Station (CORS) located in Cold Bay, AK (Station ID BAY5). This station operates at a frequency of 289 kHz and was received by an MBX-4 Differential Beacon Receiver. See *Appendix II: Base Stations* of

Pribilof Canyon, Alaska

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this document for the data sheet for this station. The DGPS enabled POS M/V and the C-NAV positions were compared to a common node at regular intervals. The differences in the Northing and Easting values were calculated and graphed. A circle placed on the graph delineated the 95 percent confidence level; the positions did not exceed 5 meters + 5 percent of the depth of the given line in Section 3.1: Horizontal Position Accuracy of the NOS Hydrographic Surveys Specifications and Deliverables, 2009. The DGPS confidence check is provided in the Descriptive Report, Separates I: Acquisition Logs and Confidence Checks.

Project Wide Horizontal and Vertical Control Report

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H12115

All information contained in this Horizontal and Vertical Report for OPR-R144-KR-09 has been reviewed and approved by me and is hereby respectfully submitted.

**Brian Busey, Vice President of Operations
TerraSond Ltd.**

Date Nov.8/2010