

U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SERVICE

## HORIZONTAL AND VERTICAL CONTROL REPORT

Type of Survey Navigable Area  
Project No. OPR-S327-KR-24  
Time Frame June – October, 2024

### LOCALITY

State Alaska  
General Locality Kotzebue, AK

2024

CHIEF OF PARTY  
ANDREW ORTHMANN

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DATE

# Horizontal and Vertical Control Report

OPR-S327-KR-24

Kotzebue, AK

January 24<sup>th</sup>, 2025



*Kotzebue Sound*

Project Name:	<i>Kotzebue, AK</i>
General Locality:	<i>Kotzebue, AK</i>
Registry Numbers:	<i>H13912 through H13924</i>
Vessel(s):	<i>Poseidon, ASV-LR1</i>
Field Unit:	<i>TerraSond</i>
Lead Hydrographer:	<i>Andrew Orthmann</i>

## *A. Vertical Control*

Mean lower low water (MLLW) was the vertical control datum for this survey. All soundings are referenced to MLLW.

All time measurements were made in Universal Time Coordinated (UTC). The local time zone was offset from UTC by eight hours (Alaska Daylight Time = UTC – 8 hours). No measurements were made using local time.

***A.1. Tide Corrector Stations***

No tertiary tide stations were installed for this project.

***A.2. Tide Equipment***

No tide equipment was utilized on this project.

### ***A.3. Tide Correctors***

Tidal corrections for hydrography was accomplished using ERS methodology. The WGS84 to MLLW grid file “OPR-S327-KR-24\_AK\_ERTDM\_2023\_WGS84(G2139)-MLLW” provided by NOAA was used for all corrections. The grid file has an estimated uncertainty of 0.14 m (specified in the Project Instructions).

### ***B. Horizontal Control***

The horizontal control datum used for this survey was WGS84. All final positions are WGS84.

Vessel positions were post-processed in Applanix POSPac MMS (v9.1) software using the Trimble PP-RTX corrections service. A small number of survey lines were subsequently post-processed during office processing with Applanix Singlebase (SB) to address vertical busts. These are itemized when they occurred in the applicable Descriptive Report.

Real-time positions were provided by Trimble RTX Offshore correctors or FAA WAAS, on ITRF2008. However, all real-time corrections were replaced in post-processing for final data with WGS84 SBET solutions. Refer to the DAPR for details on positioning methodology.

Vessel position confidence checks were performed by comparing PPRTX and ASB or SB methodology, with good results. These checks are available with each DR.

Correspondence relating to tides are also available with the project DRs.

Post-processed positioning data and GNSS processing files are available with the survey deliverables.

# APPROVAL SHEET

For

## Horizontal and Vertical Control Report: H13912 through H13924

This report and the accompanying digital data are respectfully submitted.

Field operations contributing to the completion of this project were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report, digital data, and accompanying records have been closely reviewed and are considered complete and adequate per the Statement of Work and Project Work Instructions. Other reports submitted with this survey include the Descriptive Report (DR) (one for each survey sheet) and the Data Acquisition and Processing Report (DAPR).

This survey is complete and adequate for its intended purpose.

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**Andrew Orthmann**

NSPS/THSOA Certified Hydrographer (2005), Certificate No. 225

Charting Program Manager

TerraSond