

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

Horizontal and Vertical Control Report

Type of Survey Hydrographic
Project OPR-R320-KR-22
Contract No 1305M220DNCNJ0053
Task Order No T004
Time Frame April 2022 - October 2022

State Alaska
General Locality Vicinity of Cape Newenham

2022

CHIEF OF PARTY

David R. Neff, C.H.

LIBRARY & ARCHIVES

Date _____

HYDROGRAPHIC TITLE SHEET

H13563
H13564
H13565
H13566
H13567
H13568
H13569
H13570

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

eTrac Inc.

State	Alaska		
General Locality	Vicinity of Cape Newenham		
Project Name	Cape Newenham, AK		
Scale	1:40,000	Date of Survey	May - September 2022
Instructions Dated	December 16, 2021	Project No.	OPR-R320-KR-22
Vessel	R/V Thunder, R/V Norseman II, WAM-V 22, Vessel of Opportunity (VOOP)		
Chief of Party	David Neff		
Surveyed by	eTrac		
Soundings by echo sounder	R2 Sonic 2020, R2 Sonic 2022, R2 Sonic 2024		
Graphic record scaled by	N/A		
Graphic record checked by	N/A	Automated Plot	N/A
Verification by	Pacific Hydrographic Branch		
Soundings in	Meters at Mean Lower Low Water		

REMARKS: NAD 83 (2011), UTM Zone 3N
Times are in UTC
The purpose of this contract is to provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of the assigned area.

SUBCONSULTANTS:

Contents

A. Vertical Control	1
B. Horizontal Control.....	1

A. Vertical Control

Per the project instructions, survey data for OPR-R320-KR-22 were vertically referenced to the ellipsoid. A time dependant, 7 parameter transformation from ITRF-2014 to NAD83_2011 was performed in QPS Qinsy. Using VDatum, a vertical separation model was created to transform the ellipsoidally referenced data from NAD83_2011 to MLLW. The transformation and the separation model were applied in QPS Qinsy on the vessels in real-time to achieve MLLW in the field. Achieving MLLW in the field was extremely efficient for field operations as the NALL was easily identified in realtime. The separation model was carried through the processing pipeline maintaining MLLW throughout all processing efforts.

R/V Thunder received GNSS satellite corrections on the Applanix POS MV 320 over the G4+ carrier signal from the Marinestar Global Correction System maintained by Fugro. R/V Norseman received GNSS satellite corrections on the Applanix POS MV 320 and then the R2Sonic I2NS over the G4+ carrier signal from the Marinestar Global Correction System maintained by Fugro. The WAM-V 22 and the Vessel of Opportunity (VOOP) received GNSS satellite corrections on the R2Sonic I2NS over the G4+ carrier signal from the Marinestar Global Correction System maintained by Fugro. The Marinestar system is a global real-time GNSS broadcast system that delivers corrections from a network of base stations around the world via geo-stationary satellites. The Marinestar corrections system was utilized for both vertical and horizontal positioning. Accuracies in the 10-15cm range were observed throughout the project.

For OPR-R320-KR-22, Applanix PosPac MMS was utilized for all survey data to post-process real-time positioning data utilizing Trimble’s PP-RTX implementation of Trimble CenterPoint RTX. The Trimble CenterPoint RTX correction service is delivered via internet connection and integrated into Applanix PosPac MMS 8, to aid in post processed trajectories. A Smoothed Best Estimate of Trajectory (SBET) is provided by PosPac MMS and applied to survey data in Qimera 2.4.8.

B. Horizontal Control

Survey data for OPR-R320-KR-22 were collected in NAD83_2011 UTM Zone 3N Projection.

Horizontal positioning was achieved using the same equipment and methods as described in the Vertical Control section of this document.

C. Approval Sheet



OPR-R320-KR-22

Registry Nos.

H13563

H13564

H13565

H13566

H13567

H13568

H13569

H13570

Horizontal and Vertical Control Report

This report and the accompanying data are respectfully submitted.

Field operations contributing to the accomplishment of OPR-R320-KR-22 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and associated data have been closely reviewed and are considered complete and adequate as per the Statement of Work.

David R. Neff | eTrac Inc. | Chief of Party | October 5, 2022

eTrac Inc.
October 2022