

H12545

U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Ocean Survey

**DESCRIPTIVE REPORT**

Type of Survey: Navigable Area

Registry Number: H12545

**LOCALITY**

State(s): Alaska

General Locality: Krenitzin Islands

Sub-locality: Vicinity of Talus Point

**2013**

CHIEF OF PARTY  
Dean Moyles

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**H12545**

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

State(s): **Alaska**

General Locality: **Krenitzin Islands**

Sub-Locality: **Vicinity of Talus Point**

Scale: **40000**

Dates of Survey: **07/15/2013 to 07/27/2013**

Instructions Dated: **05/15/2013**

Project Number: **OPR-Q191-KR-13**

Field Unit: **Fugro Pelagos, Inc.**

Chief of Party: **Dean Moyles**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Multibeam Echo Sounder Backscatter**

Verification by: **Pacific Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

**Remarks:**

*The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Notes in red were generated during office processing. The processing branch concurs with all information and recommendations in the DR unless otherwise noted. Page numbering may be interrupted or non-sequential. All pertinent records for this survey, including the Descriptive Report, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via <http://www.ngdc.noaa.gov/>.*

# Table of Contents

<a href="#">A. Area Surveyed.....</a>	<a href="#">1</a>
<a href="#">A.1 Survey Limits.....</a>	<a href="#">1</a>
<a href="#">A.2 Survey Purpose.....</a>	<a href="#">1</a>
<a href="#">A.3 Survey Quality.....</a>	<a href="#">1</a>
<a href="#">A.4 Survey Coverage.....</a>	<a href="#">2</a>
<a href="#">A.5 Survey Statistics.....</a>	<a href="#">2</a>
<a href="#">B. Data Acquisition and Processing.....</a>	<a href="#">4</a>
<a href="#">B.1 Equipment and Vessels.....</a>	<a href="#">4</a>
<a href="#">B.1.1 Vessels.....</a>	<a href="#">4</a>
<a href="#">B.1.2 Equipment.....</a>	<a href="#">5</a>
<a href="#">B.2 Quality Control.....</a>	<a href="#">5</a>
<a href="#">B.2.1 Crosslines.....</a>	<a href="#">5</a>
<a href="#">B.2.2 Uncertainty.....</a>	<a href="#">6</a>
<a href="#">B.2.3 Junctions.....</a>	<a href="#">10</a>
<a href="#">B.2.4 Sonar QC Checks.....</a>	<a href="#">13</a>
<a href="#">B.2.5 Equipment Effectiveness.....</a>	<a href="#">13</a>
<a href="#">B.2.6 Factors Affecting Soundings.....</a>	<a href="#">14</a>
<a href="#">B.2.7 Sound Speed Methods.....</a>	<a href="#">15</a>
<a href="#">B.2.8 Coverage Equipment and Methods.....</a>	<a href="#">15</a>
<a href="#">B.2.9 Data Density .....</a>	<a href="#">15</a>
<a href="#">B.3 Echo Sounding Corrections.....</a>	<a href="#">16</a>
<a href="#">B.3.1 Corrections to Echo Soundings.....</a>	<a href="#">16</a>
<a href="#">B.3.2 Calibrations.....</a>	<a href="#">16</a>
<a href="#">B.4 Backscatter.....</a>	<a href="#">17</a>
<a href="#">B.5 Data Processing.....</a>	<a href="#">17</a>
<a href="#">B.5.1 Software Updates.....</a>	<a href="#">17</a>
<a href="#">B.5.2 Surfaces.....</a>	<a href="#">17</a>
<a href="#">C. Vertical and Horizontal Control.....</a>	<a href="#">18</a>
<a href="#">C.1 Vertical Control.....</a>	<a href="#">18</a>
<a href="#">C.2 Horizontal Control.....</a>	<a href="#">19</a>
<a href="#">D. Results and Recommendations.....</a>	<a href="#">20</a>
<a href="#">D.1 Chart Comparison.....</a>	<a href="#">20</a>
<a href="#">D.1.1 Raster Charts.....</a>	<a href="#">21</a>
<a href="#">D.1.2 Electronic Navigational Charts.....</a>	<a href="#">22</a>
<a href="#">D.1.3 AWOIS Items.....</a>	<a href="#">25</a>
<a href="#">D.1.4 Maritime Boundary Points .....</a>	<a href="#">25</a>
<a href="#">D.1.5 Charted Features.....</a>	<a href="#">26</a>
<a href="#">D.1.6 Uncharted Features.....</a>	<a href="#">26</a>
<a href="#">D.1.7 Dangers to Navigation.....</a>	<a href="#">26</a>
<a href="#">D.1.8 Shoal and Hazardous Features.....</a>	<a href="#">26</a>
<a href="#">D.1.9 Channels.....</a>	<a href="#">26</a>
<a href="#">D.1.10 Bottom Samples .....</a>	<a href="#">26</a>
<a href="#">D.2 Additional Results.....</a>	<a href="#">26</a>

<a href="#">D.2.1 Shoreline.....</a>	<a href="#">26</a>
<a href="#">D.2.2 Prior Surveys.....</a>	<a href="#">27</a>
<a href="#">D.2.3 Aids to Navigation.....</a>	<a href="#">27</a>
<a href="#">D.2.4 Overhead Features.....</a>	<a href="#">27</a>
<a href="#">D.2.5 Submarine Features.....</a>	<a href="#">27</a>
<a href="#">D.2.6 Ferry Routes and Terminals.....</a>	<a href="#">27</a>
<a href="#">D.2.7 Platforms.....</a>	<a href="#">27</a>
<a href="#">D.2.8 Significant Features.....</a>	<a href="#">27</a>
<a href="#">D.2.9 Construction and Dredging.....</a>	<a href="#">27</a>
<a href="#">D.2.10 New Survey Recommendation.....</a>	<a href="#">27</a>
<a href="#">D.2.11 Final Feature File.....</a>	<a href="#">28</a>
<a href="#">D.2.12 Inset Recommendation.....</a>	<a href="#">28</a>
<a href="#">E. Approval Sheet.....</a>	<a href="#">29</a>
<a href="#">F. Table of Acronyms.....</a>	<a href="#">30</a>

## List of Tables

<a href="#">Table 1: Survey Limits.....</a>	<a href="#">1</a>
<a href="#">Table 2: Hydrographic Survey Statistics.....</a>	<a href="#">3</a>
<a href="#">Table 3: Dates of Hydrography.....</a>	<a href="#">4</a>
<a href="#">Table 4: Vessels Used.....</a>	<a href="#">4</a>
<a href="#">Table 5: Major Systems Used.....</a>	<a href="#">5</a>
<a href="#">Table 6: Survey Specific Tide TPU Values.....</a>	<a href="#">6</a>
<a href="#">Table 7: Survey Specific Sound Speed TPU Values.....</a>	<a href="#">6</a>
<a href="#">Table 8: Junctioning Surveys.....</a>	<a href="#">10</a>
<a href="#">Table 9: Submitted Surfaces.....</a>	<a href="#">17</a>
<a href="#">Table 10: NWLON Tide Stations.....</a>	<a href="#">18</a>
<a href="#">Table 11: Subordinate Tide Stations.....</a>	<a href="#">19</a>
<a href="#">Table 12: Water Level Files (.tid).....</a>	<a href="#">19</a>
<a href="#">Table 13: Tide Correctors (.zdf or .tc).....</a>	<a href="#">19</a>
<a href="#">Table 14: User Installed Base Stations.....</a>	<a href="#">20</a>
<a href="#">Table 15: USCG DGPS Stations.....</a>	<a href="#">20</a>
<a href="#">Table 16: Largest Scale Raster Charts.....</a>	<a href="#">21</a>
<a href="#">Table 17: Largest Scale ENCs.....</a>	<a href="#">22</a>

## List of Figures

<a href="#">Figure 1: H12545 Survey Limits.....</a>	<a href="#">2</a>
<a href="#">Figure 2: H12545 Crossline Profile.....</a>	<a href="#">6</a>
<a href="#">Figure 3: H12545 Uncertainty.....</a>	<a href="#">8</a>
<a href="#">Figure 4: H12545 Uncertainty Errors.....</a>	<a href="#">9</a>
<a href="#">Figure 5: H12545 Junctions with H12445.....</a>	<a href="#">11</a>
<a href="#">Figure 6: Difference Surface H12545 vs. H12445.....</a>	<a href="#">12</a>
<a href="#">Figure 7: Difference Surface Statistics H12545 vs. H12445.....</a>	<a href="#">13</a>

<a href="#">Figure 8: Bottom-Detection Artifacts.....</a>	<a href="#">14</a>
<a href="#">Figure 9: H12545 Data Density.....</a>	<a href="#">16</a>
<a href="#">Figure 10: Chart Comparison H12545 vs. 16531.....</a>	<a href="#">22</a>
<a href="#">Figure 11: Chart Comparison H12545 vs US3AK61M.....</a>	<a href="#">24</a>
<a href="#">Figure 12: Chart Comparison H12545 vs US4AK6FM.....</a>	<a href="#">25</a>

## Descriptive Report to Accompany Survey H12545

Project: OPR-Q191-KR-13

Locality: Krenitzin Islands

Sublocality: Vicinity of Talus Point

Scale: 1:40000

July 2013 - July 2013

**Fugro Pelagos, Inc.**

Chief of Party: Dean Moyles

### A. Area Surveyed

H12545 is located in the Vicinity of Talus Point.

#### A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
54° 6' 56.99" N 165° 39' 15.98" E	53° 59' 16.01" N 165° 50' 46" E

*Table 1: Survey Limits*

Survey Limits were acquired in accordance with the requirements in the Project Instructions and the HSSD.

#### A.2 Survey Purpose

The purpose of this work is to provide NOAA with modern and accurate hydrographic survey data for the area in the Vicinity of Talus Point. The survey covered 20.78 square nautical miles of critical survey area as designated in the NOAA Hydrographic Survey Priorities, 2012 edition.

***The square nautical mileage sums to 20.85 SNM***

#### A.3 Survey Quality

The entire survey is adequate to supersede previous data.

### A.4 Survey Coverage

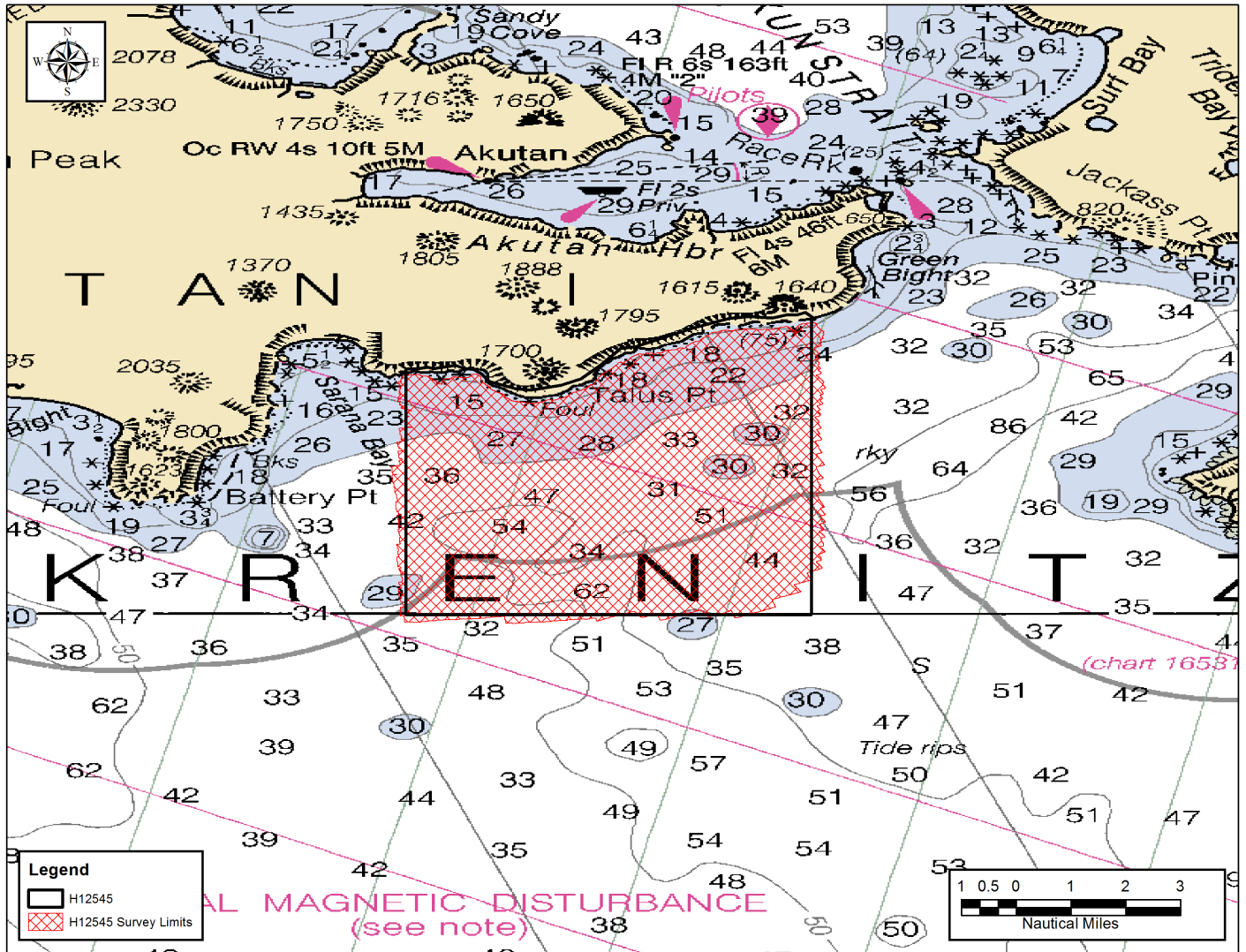


Figure 1: H12545 Survey Limits

Survey Coverage was in accordance with the requirements in the Project Instructions and the HSSD.

### A.5 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey:

	<b>HULL ID</b>	<i>Ocean Pioneer</i>	<i>D2</i>	<i>Total</i>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0	0
	<b>MBES Mainscheme</b>	186.64	133.57	320.21
	<b>Lidar Mainscheme</b>	0	0	0
	<b>SSS Mainscheme</b>	0	0	0
	<b>SBES/SSS Mainscheme</b>	0	0	0
	<b>MBES/SSS Mainscheme</b>	0	0	0
	<b>SBES/MBES Crosslines</b>	10.65	3.93	14.58
	<b>Lidar Crosslines</b>	0	0	0
<b>Number of Bottom Samples</b>				2
<b>Number of AWOIS Items Investigated</b>				0
<b>Number Maritime Boundary Points Investigated</b>				0
<b>Number of DPs</b>				0
<b>Number of Items Investigated by Dive Ops</b>				0
<b>Total SNM</b>				20.85

*Table 2: Hydrographic Survey Statistics*



The following table lists the specific dates of data acquisition for this survey:

<b>Survey Dates</b>	<b>Day of the Year</b>
07/15/2013	196
07/16/2013	197
07/19/2013	200
07/21/2013	202
07/22/2013	203
07/23/2013	204
07/24/2013	205
07/27/2013	208

*Table 3: Dates of Hydrography*

***The field collected 8 DPs during shoreline investigation.***

## **B. Data Acquisition and Processing**

### **B.1 Equipment and Vessels**

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

#### **B.1.1 Vessels**

The following vessels were used for data acquisition during this survey:

<b>Hull ID</b>	<b><i>Ocean Pioneer</i></b>	<b><i>D2</i></b>
<b>LOA</b>	205 feet	29 feet
<b>Draft</b>	14 feet	3 feet

*Table 4: Vessels Used*

Due to an inoperable davit, production for vessel R2 was limited for the OPR-Q191-KLR-13 survey. The last day of survey for vessel R2 was JD 181.

*JD 181 equates to June 30, 2013.*

## B.1.2 Equipment

The following major systems were used for data acquisition during this survey:

<b>Manufacturer</b>	<b>Model</b>	<b>Type</b>
Applanix	POS M/V v4	Positioning and Attitude System
Applied Micro-Systems	SV&P	Sound Speed System
OceanScience	UCTD	Conductivity, Temperature and Depth Sensor
Reson	7101	MBES
Reson	7125	MBES
Reson	SVP70	Sound Speed System

*Table 5: Major Systems Used*

WaterLOG H3611 (Radar Water Level Sensors) were installed on the port and starboard gunwales of M/V Ocean Pioneer to obtain a more precise static draft measurement. Samples were taken over a 10 minute period and averaged to determine the vessel's draft. Traditional static draft measurement techniques were also employed as a substitute for the WaterLOG H3611 measurements when required.

## B.2 Quality Control

### B.2.1 Crosslines

Crosslines acquired for this survey totaled 5% of mainscheme acquisition.

Crosslines were planned and well distributed throughout the survey to ensure adequate quality control. Total crossline length surveyed was 14.6 nautical miles or 4.6 percent of the total mainscheme line length. Each crossline was compared to the entire mainscheme line plan through a 2m CUBE surface using the CARIS HIPS QC report routine. If the crossline covered an area with significantly rocky topography, the crossline was compared to a 1m CUBE surface of the entire mainscheme line plan.

The majority of the QC Reports fall well within the required accuracy specifications. However, several crosslines run by vessel D2 in the vicinity of Talus Point contain beams in the QC report that fall below the 95% confidence level due to significantly rocky topography as illustrated in the crossline profile from H12545. Good conformity was still seen between the mainscheme lines and the crosslines.

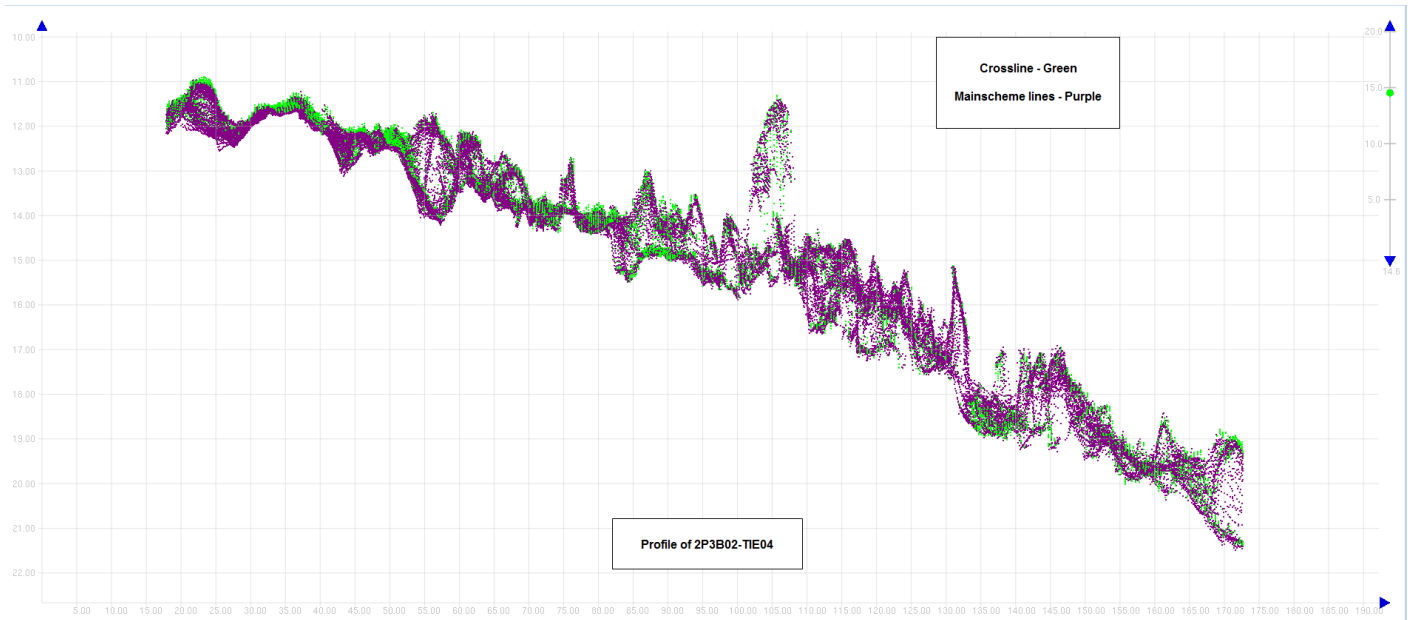


Figure 2: H12545 Crossline Profile

**B.2.2 Uncertainty**

The following survey specific parameters were used for this survey:

<b>Measured</b>	<b>Zoning</b>
0.1 meters	0.2 meters

Table 6: Survey Specific Tide TPU Values

Hull ID	Measured - CTD	Measured - MVP	Surface
Ocean Pioneer	1.410 meters/second	0 meters/second	0.250 meters/second
D2	0 meters/second	1.833 meters/second	0.250 meters/second

Table 7: Survey Specific Sound Speed TPU Values

The majority of the data fell within IHO Order 1a accuracy specifications. Nodes that exceeded the allowable specifications were located in rough or rapidly changing topography or areas where the outer beams of the coverage boundaries were the single contributor to the surface. Despite the higher uncertainty values in these areas, agreement between adjacent lines and co-linearity between soundings was good.

Note: The percentage of nodes within IHO Oder 1a, were computed by CARIS using the Surface QC Report utility and are as follows:

**CUBE Surface Uncertainty Report**

Surface Depth Range (m) % of nodes within IHO Order 1a

H12545-1m\_Final 0 - 20 90.71%

H12545-2m\_Final 18 - 40 99.11%

H12545-4m\_Final 36 - 80 99.99%

H12545-8m\_Final 72 - 160 100.00%

As illustrated in the uncertainty errors graphic, the uncertainty is generally lowest near the sonar nadir beams and increases toward the outside of each swath. This is expected and primarily a result of the sonar's device model used within CARIS HIPS for TPU calculations. In general, total propagated uncertainty varies proportionally to water depth. Outer beams also have higher uncertainty values as a function of the bottom-detection algorithms within the sonar. Data met project specifications.

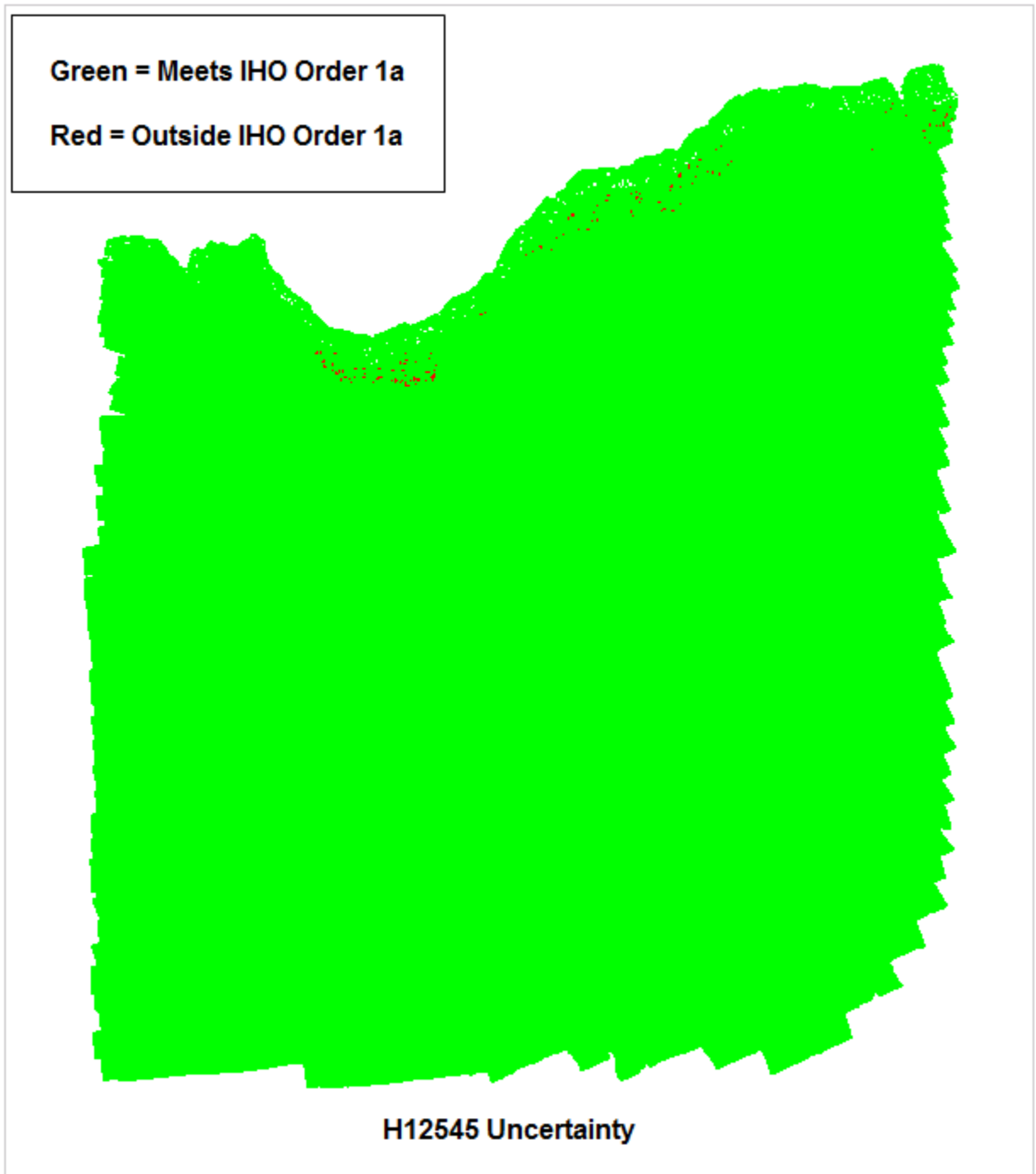
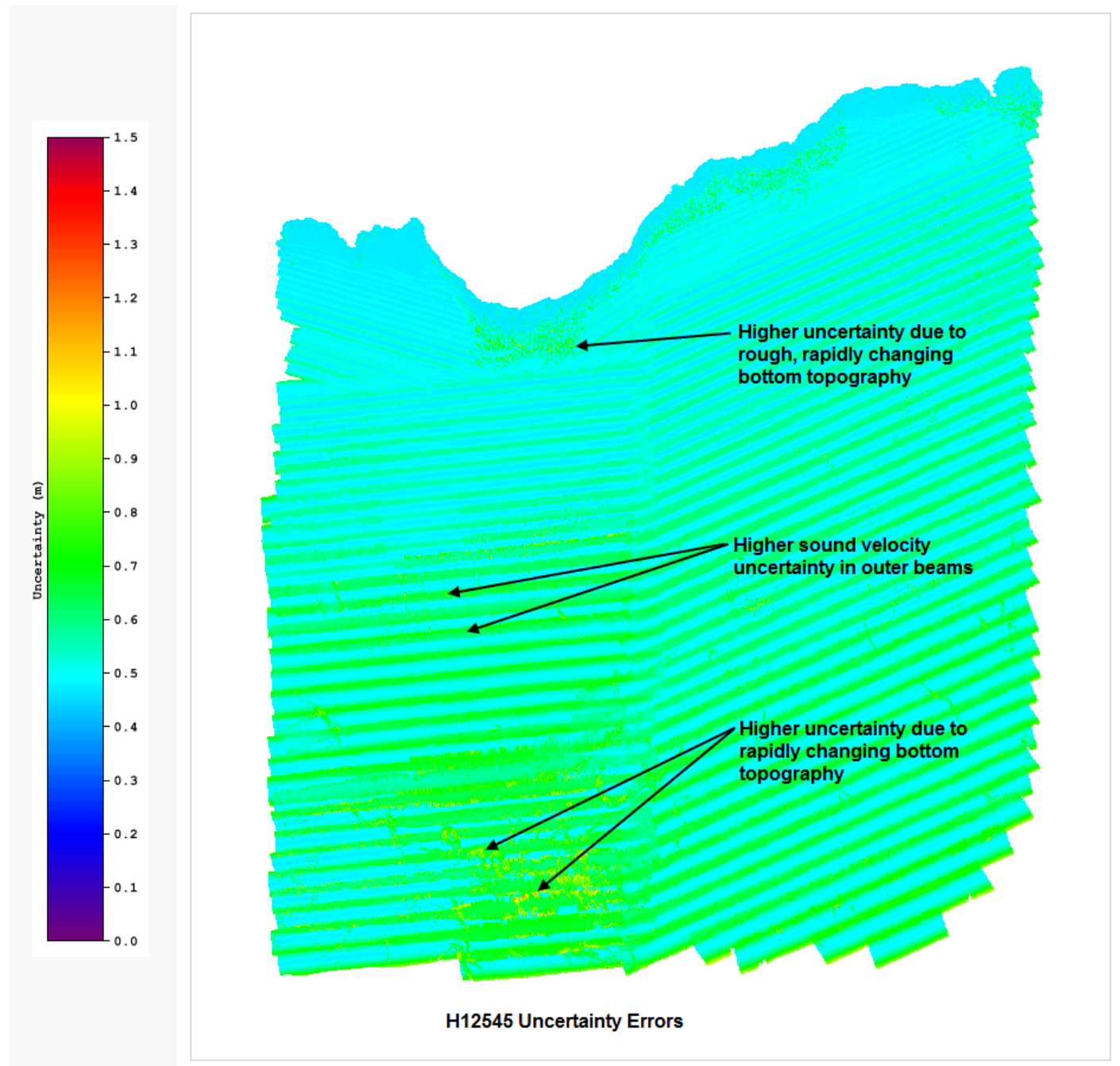


Figure 3: H12545 Uncertainty



*Figure 4: H12545 Uncertainty Errors*

*TVU values exceed IHO budgets in nearshore areas with higher frequency than usual. In the DAPR, section B, the surveyor indicates that the following values were entered into the CARIS 'Compute TPU box: Measured Tidal Uncertainty: 0.1m and Tidal Zoning Uncertainty: 0.2m. It is also indicated that these values were based on the HSSD 2012 which itself states that "An estimate for a typical processing error is 0.10 m at the 95% confidence level...." and ..."Estimates for typical errors associated with tidal zoning are 0.20 m at the 95% confidence level." Since CARIS expects these values to be input at the 68% CI level, the surveyor has effectively doubled the TVU associated with tides. This doubling of the tidal constituent of TVU is consistent with frequency with which the TVU budget was exceeded in nearshore*

*areas. In review - and without any re-evaluation of TVU values based on the above findings - the number of nodes in the 1m surface meeting IHO order 1a TVU budget was found to be 95.25%. This acceptable percentage disagrees with the documented uncertainty report.*

### B.2.3 Junctions

The surveys are in agreement along their common borders. The conformity between H12545 and the bordering survey areas (H12546 and H12547) were inspected during processing, using the CARIS HIPS' Subset Editor routine and finalized BASE Surfaces. A difference surface was also created at an 8-meter resolution between H12545, and the junction with survey area H12445 (2012). The data were well within the IHO Order 1a allowable error.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H12445	1:40000	2012	Fugro Pelagos Inc.	E

*Table 8: Junctioning Surveys*

### H12445

A difference surface was created at an 8-meter resolution between H12545, and the junction with survey area H12445 (2012), confirming that approximately 93.48% of the nodes agree to within +/-0.50m. The other 6.52% were in areas with irregular bottom topography or were on the outer edges of the swath at the coverage boundaries. The data were well within the IHO Order 1a allowable error.

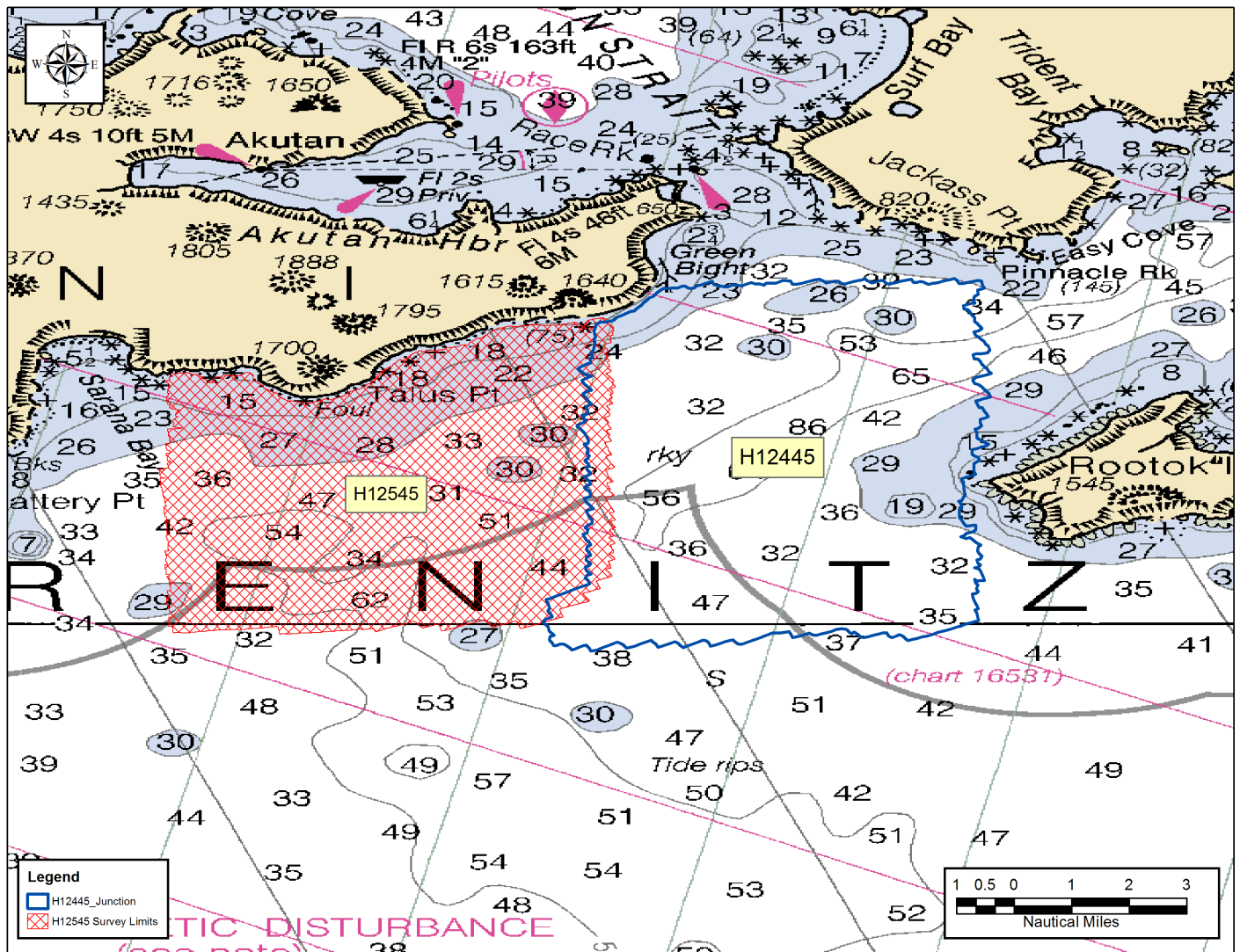


Figure 5: H12545 Junctions with H12445



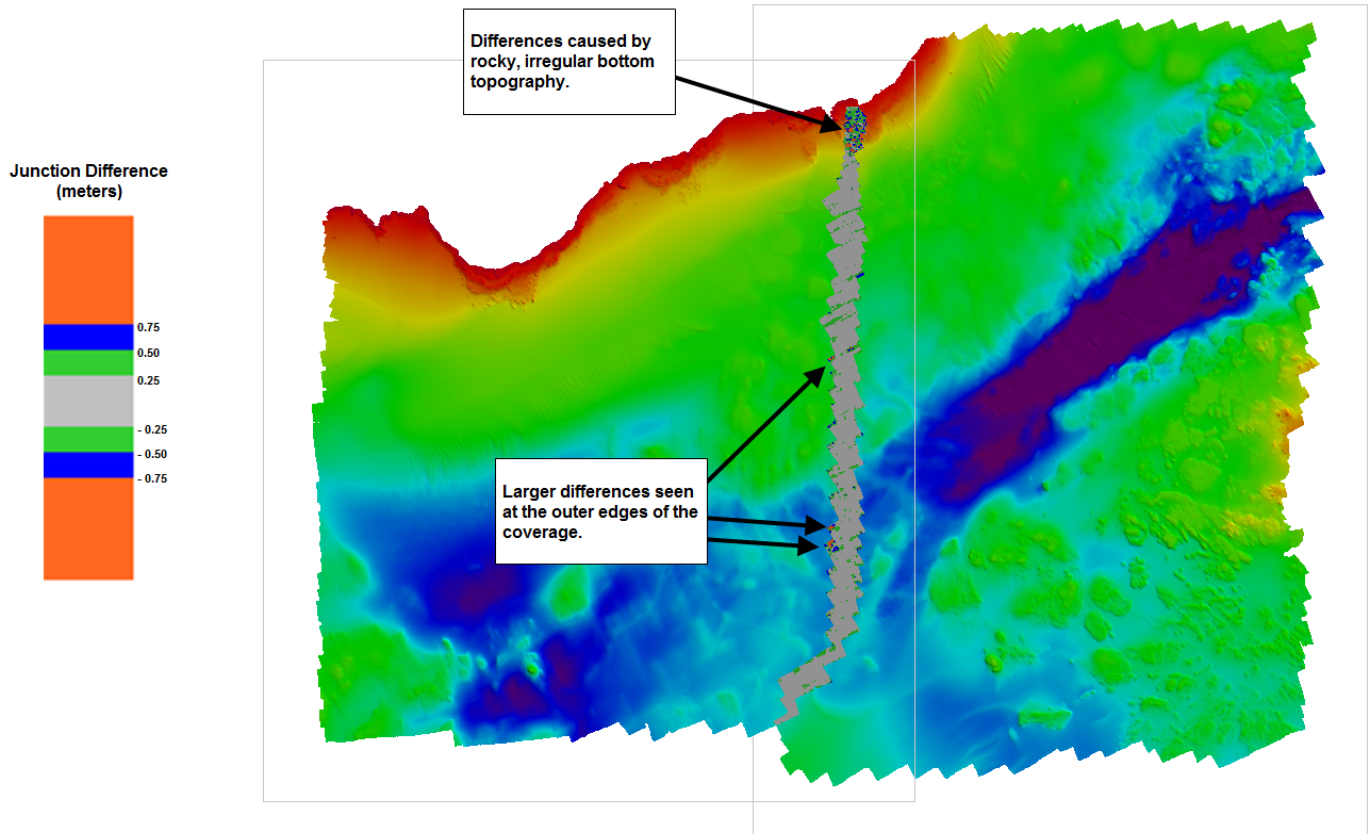


Figure 6: Difference Surface H12545 vs. H12445

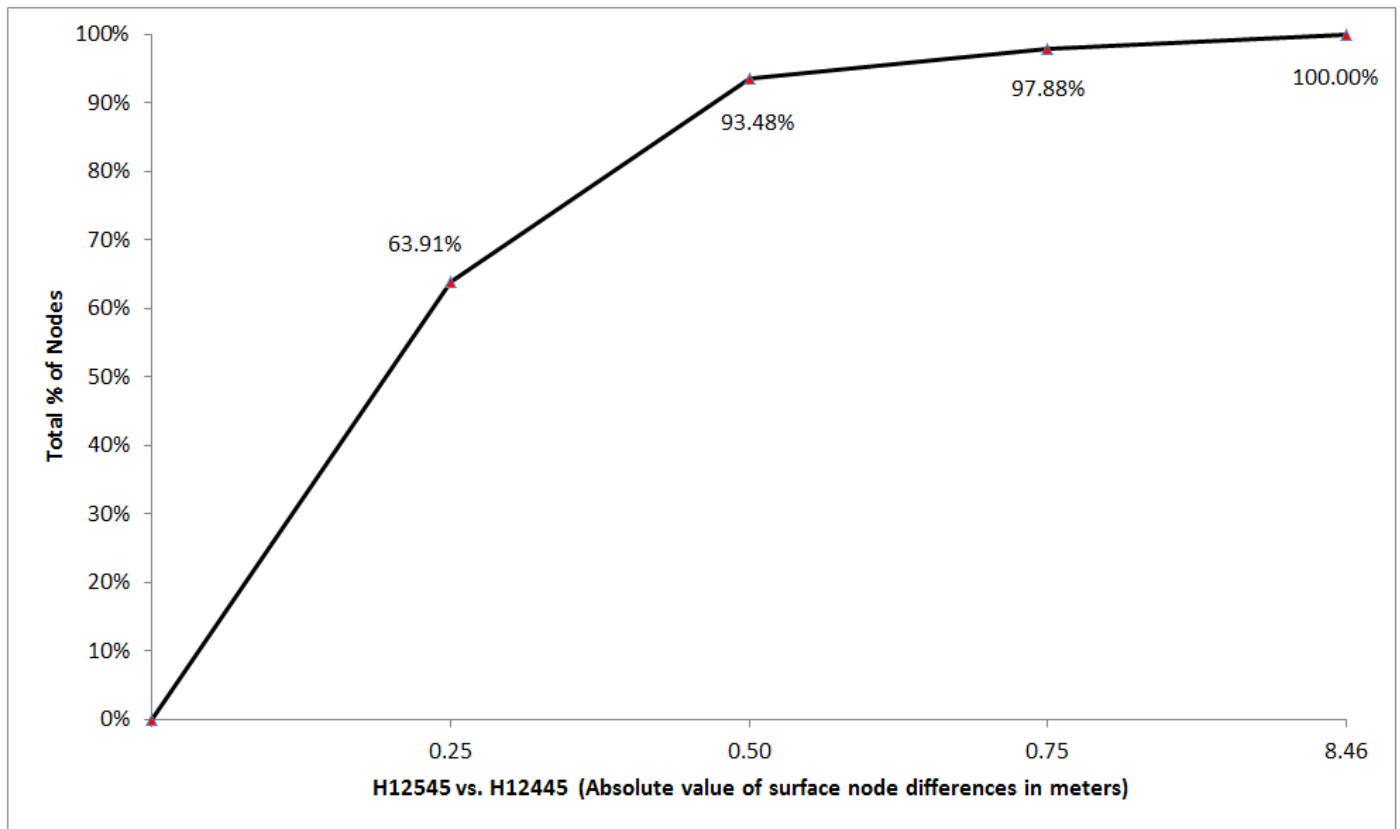


Figure 7: Difference Surface Statistics H12545 vs. H12445

*H12545 also junctions with 2013 surveys H12547 to the west, and H12546 to the south. The hydrographer did not perform a true junction analysis. The methodology used by the hydrographer was to review soundings and grids in subset and visually identify agreement. The reviewer has used the standard NOAA junction review methodology of analyzing the mean and std dev of the vertical differences between overlapping, adjacent surfaces. The result of this analysis shows excellent agreement between survey areas. The mean difference and stdev between H12547 and H12545 was 0.07m (+/-0.41m @95%CI); the mean difference and stdev between H12547 and H12546 was 0.17m (+/-0.58m @95% CI).*

#### B.2.4 Sonar QC Checks

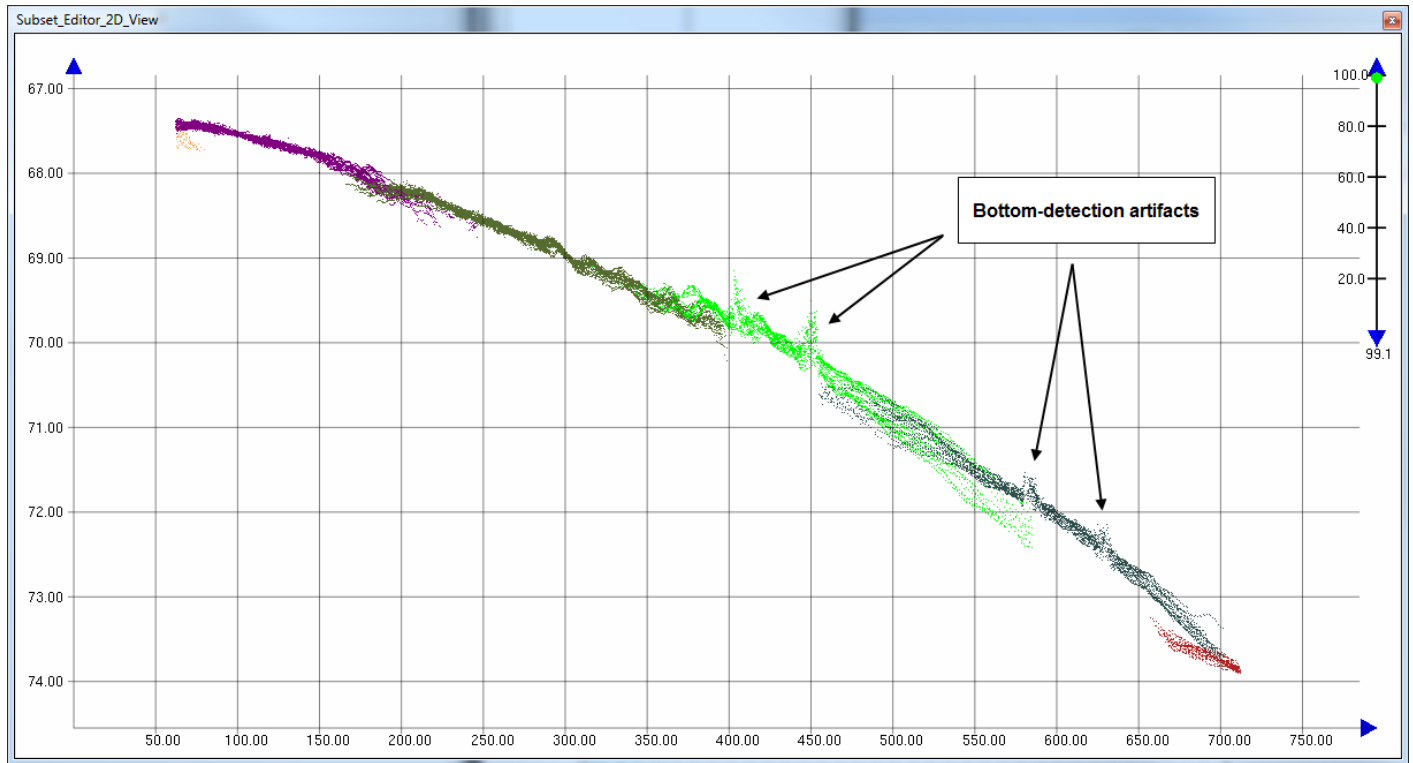
Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

#### B.2.5 Equipment Effectiveness

##### Bottom-Detection Artifacts

Dependent on sediment type, at the 200kHz frequency, the Reson SeaBat 7125 sonar system sometimes displayed bottom-detection artifacts near nadir of the multibeam swath. The bottom detection algorithm in the Reson 7125 may have been affected by the time spreading of the signal return due to sediment penetration close to nadir. To mitigate these effects, the sonar pulse length was kept at low settings during

acquisition and the artifacts were monitored closely during data processing to ensure all data met IHO Order 1a specifications.



*Figure 8: Bottom-Detection Artifacts*

## B.2.6 Factors Affecting Soundings

### Kelp

Along coastal regions of the survey, an abundance of kelp was observed during data acquisition. Due to data quality and safety issues, there may be some areas where survey operations were halted, thus not achieving the 4 fathom survey limit. In addition to this, during data processing every effort was made to flag the kelp as rejected data wherever the CUBE BASE surface included the kelp as part of the seafloor.

### Sound Speed Refraction Errors

Sound speed refraction errors were seen in the outer beams of the swaths of survey lines that were run in deeper water. However, line overlap was sufficient, and the affected soundings were rejected in CARIS HIPS' Subset Editor routine to ensure the CUBE surface met IHO Order 1a specifications.

### **B.2.7 Sound Speed Methods**

Sound Speed Cast Frequency: Sound speed measurements were conducted and applied as discussed in the Corrections to Echo Soundings section of the DAPR.

### **B.2.8 Coverage Equipment and Methods**

All equipment and survey methods were used as detailed in the DAPR.

### **B.2.9 Data Density**

The NOS Hydrographic Surveys Specifications and Deliverables, April 2012, requires 95% of all nodes to be populated with at least five soundings. Survey H12545 met these project specifications.

Density requirements for H12545 were achieved with at least 99.60% of finalized surface nodes containing five or more soundings. Nodes that failed to meet the allowable specifications were located in rough or rapidly changing topography or areas where the outer beams of the coverage boundaries were the single contributor to the surface.

#### **CUBE Surface Density Report**

Surface, Depth Range (m), % of nodes within HSSD 2012

H12545-1m_Final	0 - 20	99.61%
H12545-2m_Final	18 - 40	99.98%
H12545-4m_Final	36 - 80	99.94%
H12545-8m_Final	72 - 160	99.93%

Detection requirements were met by minimizing vessel speed when necessary, using sonar range scales appropriate to the water depth to maximize ping rates, and maximizing swath overlap. These variables were adjusted in real-time by the online acquisition crew based on the WinFrog QC and coverage displays. The shipboard processing crew provided feedback after preliminary processing and coverage creation in CARIS HIPS and In-fills were run as necessary.

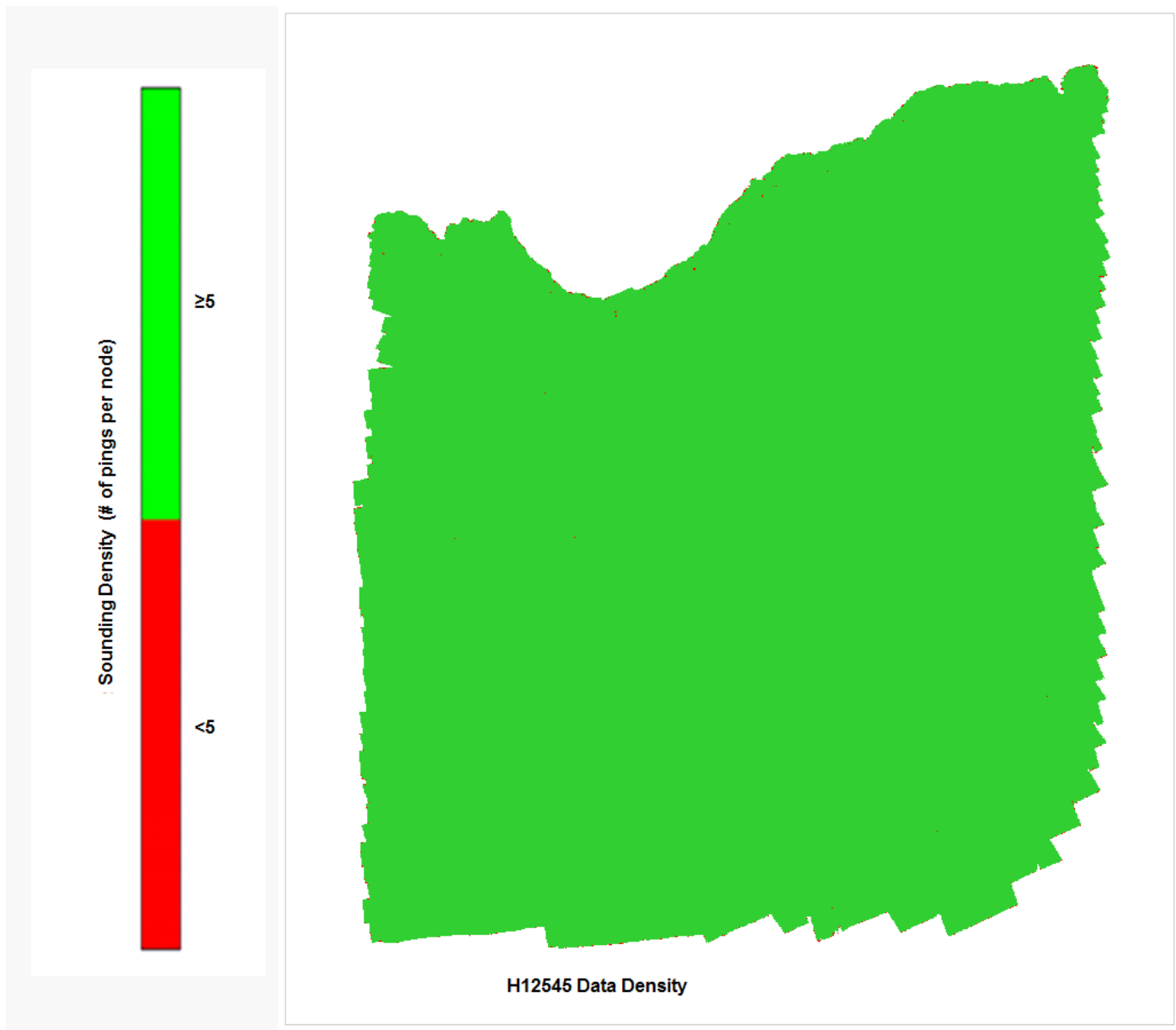


Figure 9: H12545 Data Density

## B.3 Echo Sounding Corrections

### B.3.1 Corrections to Echo Soundings

All data reduction procedures conform to those detailed in the DAPR.

### B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

## B.4 Backscatter

Towed Side Scan Sonar (SSS) operations were not required by this contract, but the backscatter and beam imagery snippet data from all multibeam systems were logged and are stored in the s7k files. All beam imagery snippet data was logged in the 7028 record of the s7k file for the project.

## B.5 Data Processing

### B.5.1 Software Updates

There were no software configuration changes after the DAPR was submitted.

The following Feature Object Catalog was used: Version 5.3.2

### B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12545_1m	CUBE	1 meters	0 meters - 119 meters	NOAA_1m	Complete MBES
H12545_1m_Final	CUBE	1 meters	0 meters - 20 meters	NOAA_1m	Complete MBES
H12545_2m	CUBE	2 meters	0 meters - 119 meters	NOAA_2m	Complete MBES
H12545_2m_Final	CUBE	2 meters	18 meters - 40 meters	NOAA_2m	Complete MBES
H12545_4m	CUBE	4 meters	0 meters - 119 meters	NOAA_4m	Complete MBES
H12545_4m_Final	CUBE	4 meters	36 meters - 80 meters	NOAA_4m	Complete MBES
H12545_8m	CUBE	8 meters	0 meters - 119 meters	NOAA_8m	Complete MBES
H12545_8m_Final	CUBE	8 meters	72 meters - 160 meters	NOAA_8m	Complete MBES

Table 9: Submitted Surfaces

The surfaces have been reviewed where noisy data, or 'fliers' are incorporated into the gridded solution causing the surface to be shoaler than the true seafloor. Where these spurious soundings cause the gridded surface to be shoaler than the reliably measured seabed by greater than the maximum allowable TVU at that depth, the noisy data have been rejected and the surface recomputed.

The NOAA CUBE parameters mandated in HSSD were used for the creation of all CUBE BASE surfaces in Survey H12545.

## C. Vertical and Horizontal Control

Additional information discussing the vertical and horizontal control for this survey can be found in the accompanying HVCR.

### C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

#### Standard Vertical Control Methods Used:

Discrete Zoning

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

<b>Station Name</b>	<b>Station ID</b>
Unalaska, Dutch Harbor	9462620
King Cove	9459881

*Table 10: NWLON Tide Stations*

The following subordinate water level stations were established for this survey:

Station Name	Station ID
Broad Bight	9462676
SE Tigalda Island	9462705
Green Bight	9462786

Table 11: Subordinate Tide Stations

File Name	Status
9462676.tid	Verified Observed
9462705.tid	Verified Observed
9462786.tid	Verified Observed

Table 12: Water Level Files (.tid)

File Name	Status
OPR-Q191-KR-13_Zoning_20131008.zfd	Preliminary

Table 13: Tide Correctors (.zdf or .tc)

On October 08, 2013, John Oswald and Associates (JOA) issued verified tidal data and zoning for OPR-Q191-KR-13. All sounding data was then re-merged using CARIS HIPS and SIPS tide routine. JOA verified tidal data were used for all final Navigation BASE surfaces and S-57 Feature files. It should be noted that the tidal data applied to OPR-Q191-KR-13 is JOA verified and not CO-OPs verified. JOA are currently in the WALI verification process, which is pending, awaiting CO-OPs approval. Since the timeframe for CO-OPs verification is unknown, FPI were given approval, by our COTR, to submit the data with the JOA verified tides and zoning applied.

***JOA zoning model was approved as final by CO-OPs and zoning validation received January 30, 2014.***

## C.2 Horizontal Control

The horizontal datum for this project is NAD83.

The projection used for this project is 3N.

The following PPK methods were used for horizontal control:

Single Base



For real-time DGPS corrections, a CSI MBX-3 unit was tuned to the Cold Bay, Alaska USCG DGPS site. The unit output differentially corrected positions at 1 Hz to the (POS MV) 320 V4 where it was integrated with inertial data, and a position for the top-center of the IMU generated. This position was logged concurrently with the bathymetry from WinFrog and the POS file using Fugro Pelagos PosMvLogger. It was later corrected for offsets to the multibeam echosounder (MBES) by CARIS HIPS in post-processing.

Final positioning was done using post-processed kinematic (PPK) methods. Applanix POSPac MMS v5.4 software was used in conjunction with the POS files and local 1Hz base station data to generate a higher accuracy position, which was applied in processing to replace the real-time position records.

The following user installed stations were used for horizontal control:

<b>HVCR Site ID</b>	<b>Base Station ID</b>
Broad Bight	BB_E
SE Tigalda Island	TI_N

*Table 14: User Installed Base Stations*

The following DGPS Stations were used for horizontal control:

<b>DGPS Stations</b>
Cold Bay DGPS Station

*Table 15: USCG DGPS Stations*

## **D. Results and Recommendations**

### **D.1 Chart Comparison**

### D.1.1 Raster Charts

The following are the largest scale raster charts, which cover the survey area:

<b>Chart</b>	<b>Scale</b>	<b>Edition</b>	<b>Edition Date</b>	<b>LNМ Date</b>	<b>NM Date</b>
16531	1:80000	7	02/2002	10/01/2013	09/28/2013

*Table 16: Largest Scale Raster Charts*

#### 16531

The Raster chart was downloaded from NOAA's Office of Coast Survey website on October 9, 2013.

Given that the survey area was ensounded with 100% multibeam coverage, discrepancies were discovered between the charted and surveyed depths.

Sounding agreement between surveyed soundings on sheet H12545 and spot soundings displayed on Raster chart 16531 varied between 1 and 3 fathoms. Generally, the surveyed data in the vicinity of the charted spot soundings from Raster chart 16531 agree to within 1 to 2 fathoms.

The Hydrographer recommends that soundings within the survey limits of H12545 supersede all prior survey and charted depths.

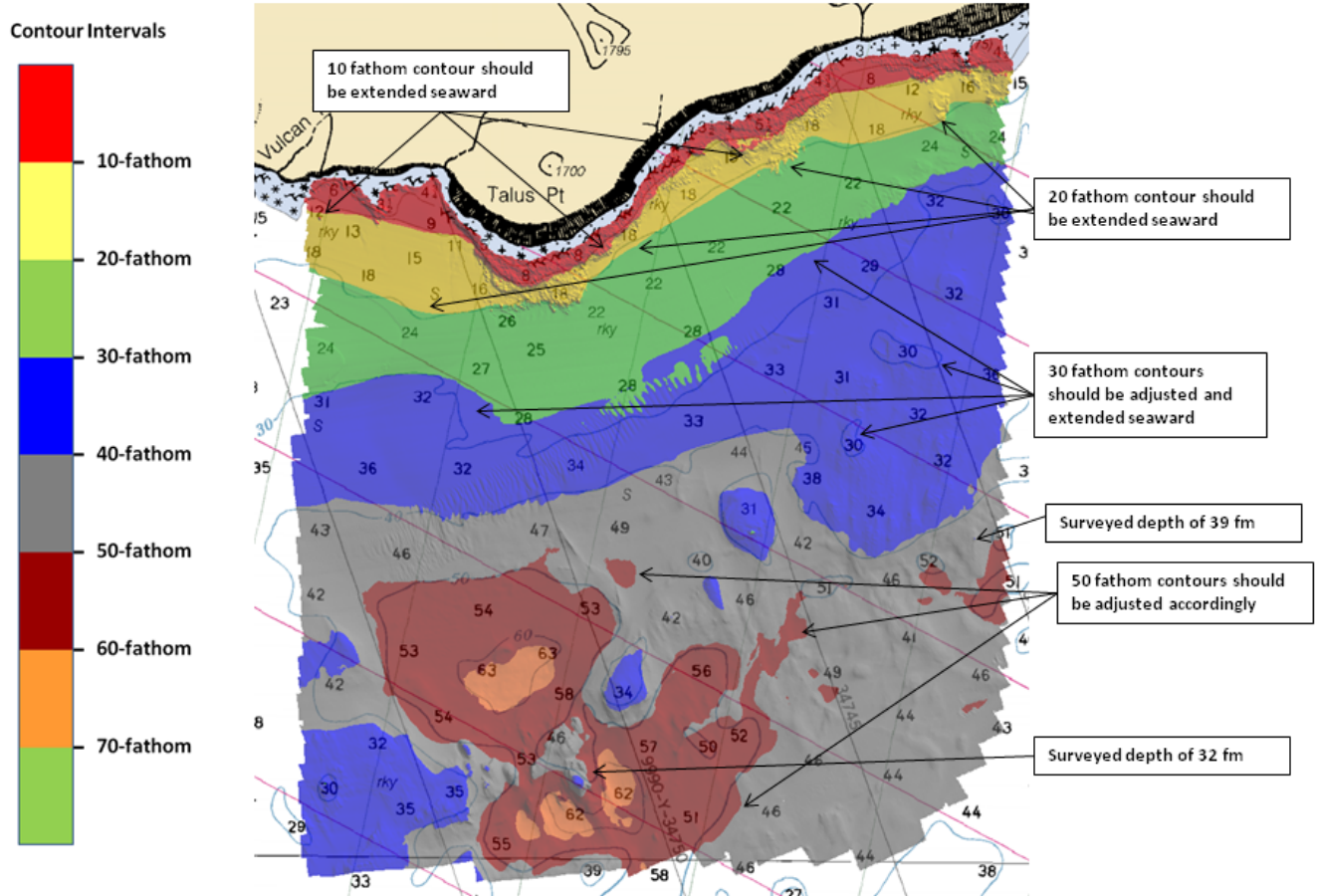


Figure 10: Chart Comparison H12545 vs. 16531

**D.1.2 Electronic Navigational Charts**

The following are the largest scale ENC's, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US3AK61M	1:300000	16	01/12/2011	06/24/2013	NO
US4AK6FM	1:80000	8	04/28/2011	05/02/2013	NO

Table 17: Largest Scale ENC's

US3AK61M

The ENC's were downloaded from NOAA's Office of Coast Survey website on October 9, 2013. Thus, the issue dates displayed in the table above are more recent than the dates in the Project Instructions.

Given that the survey area was ensonified with 100% multibeam coverage, discrepancies were discovered between the charted and surveyed depths.

Sounding agreement between surveyed soundings on sheet H12545 and spot soundings displayed on ENC US3AK61M varied between 1 meter and 18 meters. Generally, the surveyed data in the vicinity of the charted spot soundings from the ENC agreed to within 1 to 5 meters. However, the largest discrepancy found was 18 meters.

Although the ENC displays the spot soundings in meters, the contours are displayed in fathoms. The surveyed data for sheet H12545 shows contours that generally agree with the contour trends from ENC US3AK61M.

The Hydrographer recommends that soundings within the survey limits of H12545 supersede all prior survey and charted depths.

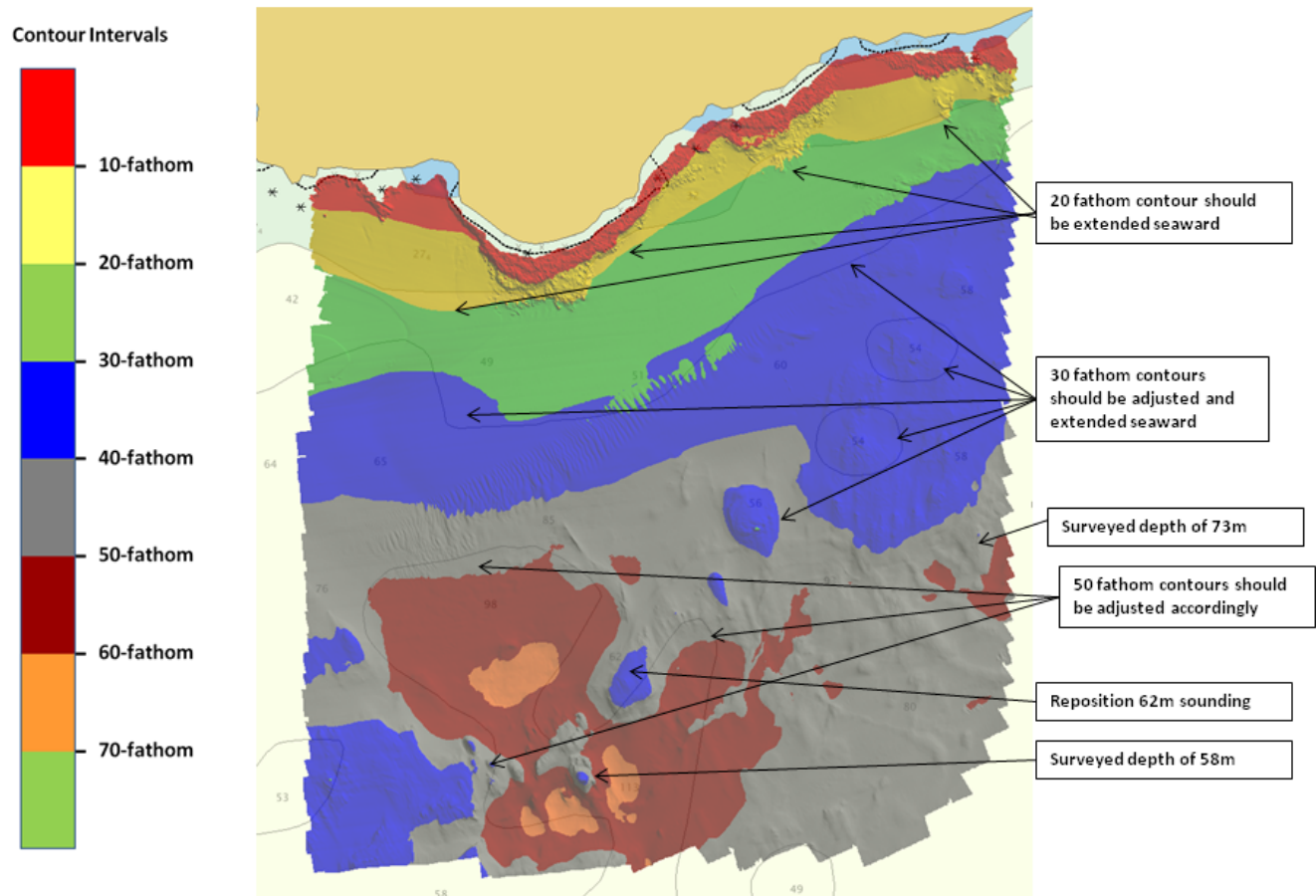


Figure 11: Chart Comparison H12545\_vs\_US3AK61M

#### US4AK6FM

Given that the survey area was ensounded with 100% multibeam coverage, discrepancies were discovered between the charted and surveyed depths.

Sounding agreement between surveyed soundings on sheet H12545 and spot soundings displayed on ENC US4AK6FM varied between 1 meter and 5 meters.

Although the ENC displays the spot soundings in meters, the contours are displayed in fathoms. The surveyed data for sheet H12545 shows contours that generally agree with the contour trends from ENC US4AK6FM.

The Hydrographer recommends that soundings within the survey limits of H12545 supersede all prior survey and charted depths.

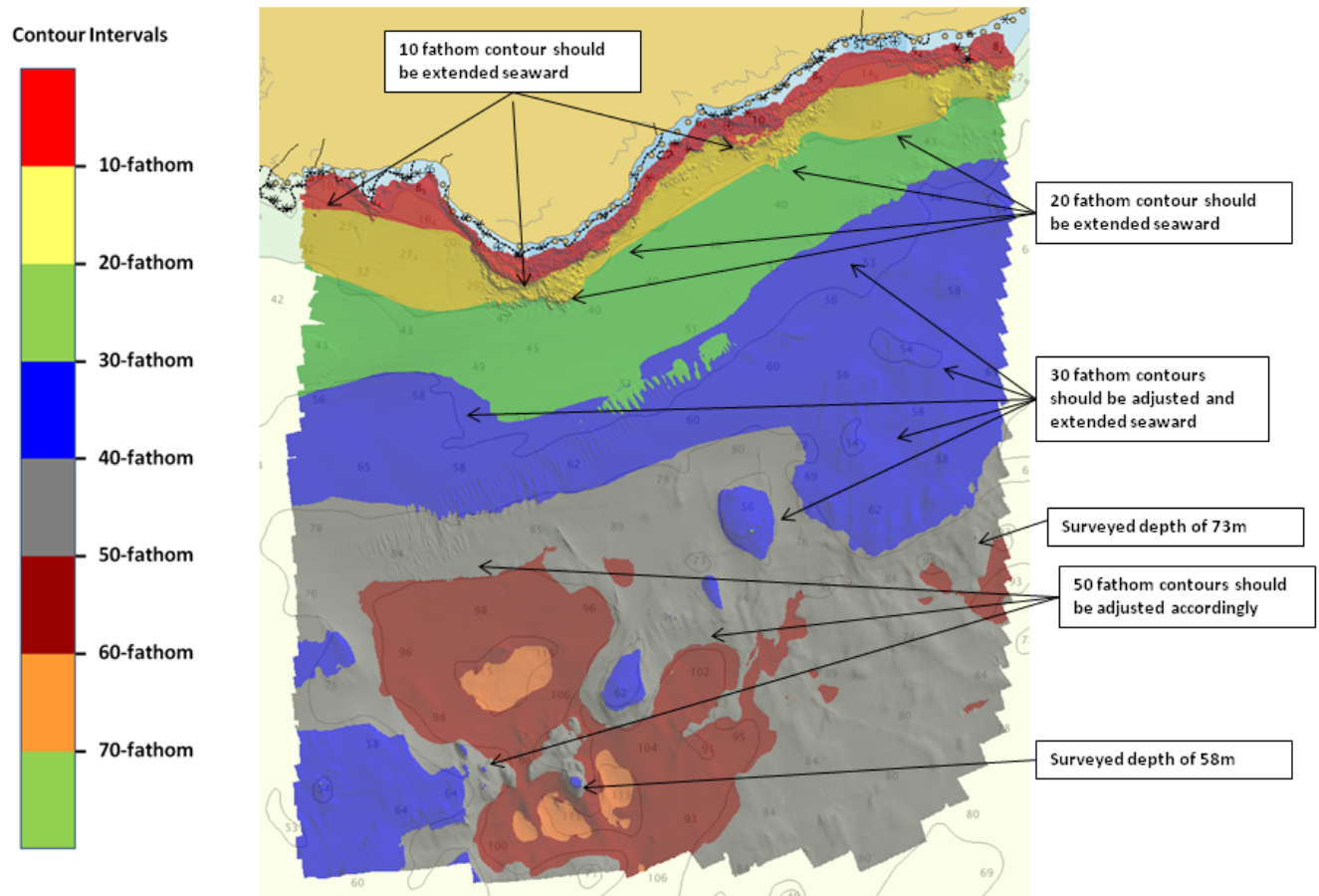


Figure 12: Chart Comparison H12545\_vs\_US4AK6FM

### D.1.3 AWOIS Items

No AWOIS items exist for this survey.

### D.1.4 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

### **D.1.5 Charted Features**

No charted features exist for this survey.

*Charted features exist, but no charted features that contain the chart label PA, ED, PD or Rep exist for this survey.*

### **D.1.6 Uncharted Features**

No uncharted features exist for this survey.

*No uncharted wrecks or obstructions, or other features from miscellaneous sources, exist for this survey.*

### **D.1.7 Dangers to Navigation**

No Danger to Navigation Reports were submitted for this survey.

### **D.1.8 Shoal and Hazardous Features**

No shoals or potentially hazardous features exist for this survey.

### **D.1.9 Channels**

No channels exist for this survey. There are no designated anchorages, precautionary areas, safety fairways, traffic separation schemes, pilot boarding areas, or channel and range lines within the survey limits.

### **D.1.10 Bottom Samples**

*Bottom Samples were acquired in accordance with the Project Instructions and the HSSD.*

## **D.2 Additional Results**

### **D.2.1 Shoreline**

Shoreline was not assigned in the Hydrographic Survey Project Instructions or Statement of Work.

*Limited shoreline verification was assigned in the Project Instructions, including the instruction to verify all features with asgnmt attributed 'Assigned,' regardless if it is located inshore of the Navigable Area Limit Line. In email with the COTR, this requirement was eased to allow the hydrographer discretion in selecting safe, navigationally significant features for field verification.*

**D.2.2 Prior Surveys**

No prior survey comparisons exist for this survey.

**D.2.3 Aids to Navigation**

Aids to navigation (ATONs) do not exist for this survey.

**D.2.4 Overhead Features**

Overhead features do not exist for this survey.

**D.2.5 Submarine Features**

Submarine features do not exist for this survey.

**D.2.6 Ferry Routes and Terminals**

No ferry routes or terminals exist for this survey.

**D.2.7 Platforms**

No platforms exist for this survey.

**D.2.8 Significant Features**

No significant features exist for this survey.

**D.2.9 Construction and Dredging**

There is no present or planned construction or dredging within the survey limits.

**D.2.10 New Survey Recommendation**

No new surveys or further investigations are recommended for this area.



### **D.2.11 Final Feature File**

Charted features that fell inshore of the 4-fathom contour (NALL) were not investigated and have been noted with a “Not Addressed” comment in the “descrp” attribute of the final features file. Features that fell within the survey limits were addressed and attributed appropriately. This file contains the object and metadata with extended attributes as required in the Specifications and Deliverables (April 2012).

All features, including ones from the NOAA assigned feature file, that were within the geographical bounds of H12545 are included in the “H12545\_Field\_Features.000” file.

Note: Since CARIS Notebook and Bathy DataBASE were unable to export to S-57 with the parameters outlined in section 8.2 of the HSSD 2012, an additional text file with the required meta information was sent to accompany the S-57 file.

*The reviewer added 18 features to the Final Feature from the provided feature file, as they had been attributed 'Assigned' but not incorporated into the Final Feature File. Though the Project Instructions indicate the hydrographer was required to investigate all features whose asgnmt attribute was 'Assigned,' there is guidance from the COTR providing the hydrographer discretion to verify safe, navigationally significant features instead.*

### **D.2.12 Inset Recommendation**

No new insets are recommended for this area.

## E. Approval Sheet

As Chief of Party, Field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

Report Name	Report Date Sent
Data Acquisition and Processing Report	2013-11-04
Horizontal and Vertical Control Report	2013-11-04
Tides and Water Levels Package	2013-11-04
MAR-P-001-R2 MBES Acquisition Procedures	2013-11-04
DAC-P-010-R3 MBES Processing Procedures	2013-11-04

Approver Name	Approver Title	Approval Date	Signature
Dean Moyles	Senior Hydrographer (ACSM Cert. No. 226)	11/04/2013	Dean Moyles <small>Digitally signed by Dean Moyles            DN: cn=Dean Moyles, o=Fugro            Pelagos, Inc., ou,            email=dmoyles@fugro.com, c=US            Date: 2014.05.23 04:15:12 -07'00'</small>

## F. Table of Acronyms

<b>Acronym</b>	<b>Definition</b>
<b>AHB</b>	Atlantic Hydrographic Branch
<b>AST</b>	Assistant Survey Technician
<b>ATON</b>	Aid to Navigation
<b>AWOIS</b>	Automated Wreck and Obstruction Information System
<b>BAG</b>	Bathymetric Attributed Grid
<b>BASE</b>	Bathymetry Associated with Statistical Error
<b>CO</b>	Commanding Officer
<b>CO-OPS</b>	Center for Operational Products and Services
<b>CORS</b>	Continually Operating Reference Station
<b>CTD</b>	Conductivity Temperature Depth
<b>CEF</b>	Chart Evaluation File
<b>CSF</b>	Composite Source File
<b>CST</b>	Chief Survey Technician
<b>CUBE</b>	Combined Uncertainty and Bathymetry Estimator
<b>DAPR</b>	Data Acquisition and Processing Report
<b>DGPS</b>	Differential Global Positioning System
<b>DP</b>	Detached Position
<b>DR</b>	Descriptive Report
<b>DTON</b>	Danger to Navigation
<b>ENC</b>	Electronic Navigational Chart
<b>ERS</b>	Ellipsoidal Referenced Survey
<b>ERZT</b>	Ellipsoidally Referenced Zoned Tides
<b>FFF</b>	Final Feature File
<b>FOO</b>	Field Operations Officer
<b>FPM</b>	Field Procedures Manual
<b>GAMS</b>	GPS Azimuth Measurement Subsystem
<b>GC</b>	Geographic Cell
<b>GPS</b>	Global Positioning System
<b>HIPS</b>	Hydrographic Information Processing System
<b>HSD</b>	Hydrographic Surveys Division
<b>HSSD</b>	Hydrographic Survey Specifications and Deliverables

<b>Acronym</b>	<b>Definition</b>
<b>HSTP</b>	Hydrographic Systems Technology Programs
<b>HSX</b>	Hypack Hysweep File Format
<b>HTD</b>	Hydrographic Surveys Technical Directive
<b>HVCR</b>	Horizontal and Vertical Control Report
<b>HVF</b>	HIPS Vessel File
<b>IHO</b>	International Hydrographic Organization
<b>IMU</b>	Inertial Motion Unit
<b>ITRF</b>	International Terrestrial Reference Frame
<b>LNM</b>	Local Notice to Mariners
<b>LNM</b>	Linear Nautical Miles
<b>MCD</b>	Marine Chart Division
<b>MHW</b>	Mean High Water
<b>MLLW</b>	Mean Lower Low Water
<b>NAD 83</b>	North American Datum of 1983
<b>NAIP</b>	National Agriculture and Imagery Program
<b>NALL</b>	Navigable Area Limit Line
<b>NM</b>	Notice to Mariners
<b>NMEA</b>	National Marine Electronics Association
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NOS</b>	National Ocean Service
<b>NRT</b>	Navigation Response Team
<b>NSD</b>	Navigation Services Division
<b>OCS</b>	Office of Coast Survey
<b>OMAO</b>	Office of Marine and Aviation Operations (NOAA)
<b>OPS</b>	Operations Branch
<b>MBES</b>	Multibeam Echosounder
<b>NWLON</b>	National Water Level Observation Network
<b>PDBS</b>	Phase Differencing Bathymetric Sonar
<b>PHB</b>	Pacific Hydrographic Branch
<b>POS/MV</b>	Position and Orientation System for Marine Vessels
<b>PPK</b>	Post Processed Kinematic
<b>PPP</b>	Precise Point Positioning
<b>PPS</b>	Pulse per second

<b>Acronym</b>	<b>Definition</b>
<b>PRF</b>	Project Reference File
<b>PS</b>	Physical Scientist
<b>PST</b>	Physical Science Technician
<b>RNC</b>	Raster Navigational Chart
<b>RTK</b>	Real Time Kinematic
<b>SBES</b>	Singlebeam Echosounder
<b>SBET</b>	Smooth Best Estimate and Trajectory
<b>SNM</b>	Square Nautical Miles
<b>SSS</b>	Side Scan Sonar
<b>ST</b>	Survey Technician
<b>SVP</b>	Sound Velocity Profiler
<b>TCARI</b>	Tidal Constituent And Residual Interpolation
<b>TPE</b>	Total Propagated Error
<b>TPU</b>	Topside Processing Unit
<b>USACE</b>	United States Army Corps of Engineers
<b>USCG</b>	United States Coast Guard
<b>UTM</b>	Universal Transverse Mercator
<b>XO</b>	Executive Officer
<b>ZDA</b>	Global Positioning System timing message
<b>ZDF</b>	Zone Definition File

## Moyles, Dean

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**From:** David Scharff - NOAA Federal [david.scharff@noaa.gov]  
**Sent:** Monday, May 06, 2013 6:04 AM  
**To:** Dean Moyles  
**Subject:** Fwd: Fw: Tide station numbers

Please forward to JOA. Thanks.

----- Forwarded message -----

From: **Artara Johnson - NOAA Federal** <[artara.johnson@noaa.gov](mailto:artara.johnson@noaa.gov)>  
Date: Fri, May 3, 2013 at 5:32 PM  
Subject: Re: Fw: Tide station numbers  
To: Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>  
Cc: \_NOS CO-OPS OET Team <[nos.coops.oetteam@noaa.gov](mailto:nos.coops.oetteam@noaa.gov)>, "\_NOS.CO-OPS.HPT" <[nos.coops.hpt@noaa.gov](mailto:nos.coops.hpt@noaa.gov)>, Marc Moser - NOAA Federal <[marc.s.moser@noaa.gov](mailto:marc.s.moser@noaa.gov)>, David Scharff - NOAA Federal <[david.scharff@noaa.gov](mailto:david.scharff@noaa.gov)>, Manoj Samant - NOAA Federal <[manoj.samant@noaa.gov](mailto:manoj.samant@noaa.gov)>

Good afternoon Corey...

CO-OPS recommends the calculation of a new station id if the position used to derive the station id is changed to a position outside of a 1 km radius. JOA can feel free to send OET new station positions if there is any concern the station id will change once they are onsite. We will calculate a station id and provide further guidance.

Also, please be aware there was a typo in my previous email. All of the station ids calculated for this project should begin with the AK state identifier 946 not 945 as listed below. The station ids are as follows:

9462676 Broad Bight, AK  
9462705 Green Bight, AK  
9462786 SE Tigalda, AK

Feel free to contact me with any questions or concerns.

Have a great day...Tara

On Tue, Apr 30, 2013 at 2:32 PM, Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)> wrote:  
Thanks Tara. Any guidance on how far they may deviate from these preliminary positions before prompting a new station id? 50m radius?

Corey

On Tue, Apr 30, 2013 at 2:03 PM, Artara Johnson - NOAA Federal <[artara.johnson@noaa.gov](mailto:artara.johnson@noaa.gov)> wrote:  
Good afternoon Corey...

The following station ids were calculated from the positions provided to OET:

9452676 Broad Bight, AK  
9452705 Green Bight, AK  
9462786 SE Tigalda, AK

Have a great day...Tara

Have a great day!

Tara

On Mon, Apr 29, 2013 at 10:57 AM, Artara Johnson - NOAA Federal <[artara.johnson@noaa.gov](mailto:artara.johnson@noaa.gov)> wrote:  
Good morning Corey...

I will provide the station ids by 5pm Friday May 3rd.

Have a great day...Tara

Have a great day!

Tara

On Mon, Apr 29, 2013 at 10:45 AM, Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)> wrote:  
OET,  
Didn't want to let this slip through the cracks. Any thoughts on providing prelim station numbers?

Cheers, Corey

On Tue, Apr 23, 2013 at 11:14 AM, Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)> wrote:  
OET,  
JOA, a sub under our prime contractor Fugro, is requesting preliminary gauge numbers for the tertiary gauges supporting OPR-Q191-KR-13 Krenitzin Islands, AK. See the estimated positions below. Based on the remoteness of this project area and to mitigate any delays in the field, can OET provide preliminary numbers and guidance for how far they may deviate from these positions before requiring new numbers?

> Broad Bight            N 54-03.85   W 165-56.2  
> Green Bight            N 54-06.5    W 165-40.3  
> SE Tigalda Island    N 54-06.1    W 164-56.3

Cheers, Corey

----- Original Message -----

From: Mike Zieserl [mailto:[mike@joasurveys.com](mailto:mike@joasurveys.com)]  
Sent: Monday, April 22, 2013 02:26 PM  
To: Dean Moyles  
Subject: Re: Tide station numbers

Dean,

In the past CO-OPS has provided station numbers ahead of time due to the remoteness and difficulty of communication. Otherwise we would potentially need someone in OET to contact 7 days/week so we can obtain the number in a timely fashion. Any chance you could ask again? It would be very helpful for us.

Thanks, Mike

Mike Zieserl, PLS  
JOA Surveys, LLC  
[www.joasurveys.com](http://www.joasurveys.com)  
2000 E. Dowling Rd, #10  
Anchorage, AK 99507  
[\(907\) 230-5789](tel:(907)230-5789) cell  
[\(907\) 561-0136](tel:(907)561-0136) phone

On 4/22/2013 8:30 PM, Dean Moyles wrote:

> I talk to noaa they would prefer to give you these once they are installed.

>

> ----- Original Message -----

> From: Mike Zieserl [mailto:[mike@joasurveys.com](mailto:mike@joasurveys.com)]

> Sent: Friday, April 19, 2013 05:46 PM

> To: Dean Moyles

> Subject: Tide station numbers

>

> Dean,

>

> Could you please request preliminary tide station numbers for the 3

> tertiary tide stations for this project, based on the following coordinates:

>

> Broad Bight        N 54-03.85    W 165-56.2

> Green Bight        N 54-06.5     W 165-40.3

> SE Tigalda Island    N 54-06.1    W 164-56.3

>

> If the installation location changes by more than a 1/4 mile I will

> contact CO-OPS by satellite phone to request a revised station number.

>

> Thanks,

>

> Mike

>

--

J. Corey Allen  
Operations Branch Team Lead  
Hydrographic Surveys Division



Office of Coast Survey, NOAA  
[Corey.Allen@noaa.gov](mailto:Corey.Allen@noaa.gov)  
[301.713.2777](tel:301.713.2777) x119 (Office)  
[301.717.7271](tel:301.717.7271) (Cell)

--  
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[301.717.7271](tel:301.717.7271) (Cell)

## Moyles, Dean

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**From:** David Scharff - NOAA Federal [david.scharff@noaa.gov]  
**Sent:** Wednesday, May 22, 2013 2:08 PM  
**To:** Dean Moyles  
**Cc:** corey.allen@noaa.gov; marc.s.moser@noaa.gov  
**Subject:** Re: No Transit Zone

Corey,

Here is the background on our attempt to establish permissions to operate near the rookeries and no transit zones in the Krenitzin Islands.

In the beginning of 2011 Kathleen provided our NEPA assessment to NMFS which included our plans to survey the Krenitzin Islands - we never received feedback and assumed there were no issues with HSD's plan.

7/25/2011 - Fugro established contact with Lisa Rotterman, NMFS's Steller Sea Lion Coordinator requesting permission to enter the sea lion critical habitat. Her response was that she would review their project.

7/27/2011 - Given the project was about to begin Kathleen and I contacted Lisa, she responded with a series of questions which Fugro, Kathleen and I responded to. In addition we provided the PIs, NEPA report, Fugro's Health, Safety and Environmental (HSE) policy which address operation in protected habitats, along with various other documents.

7/28/2011 - Given the need to proceed I provided Fugro with the following email:

"James,

Re: Hydrographic survey operations in the vicinity of the Steller sea lion critical habitat near Akun Island.

At this time NOAA does not have any established protocols in place for hydrographic survey operations in or near marine protected areas. Kathleen Jamison and I are in contact with NOAA's Office of Protected Resources in Silver Spring and the regional office in Anchorage and will provided you further guidance as it becomes available.

You are authorized to commence survey operations as described in the Project Instructions for OPR-Q191-KR-11 providing the following guidance is adhere to: (1) the field parties should exercise extra diligence while surveying in the established sea lion critical habitat and avoid any actions that may lead to contact or impose undue stress on marine mammals, (2) adhere to the mammal impact mitigation procedures outlined in Section-3 of Fugro's Marine Project HSE Plan and (3) if in the course of conducting the survey avoidance with marine mammals is not possible for any reason contact me so we may discuss alternatives.

Regards,  
Dave"

8/2/2011 - Kathleen and I received more questions from Lisa that were promptly answered. She never responded back.

Summer of 2012 - Fugro attempted to contact Lisa regarding permissions into the Steller sea lion critical habitat again. They never received a response.

Bottom line - Fisheries does know Fugro has been working in the Krenitzin Islands, they know they are working there this year as JOA requested a permit, and our NEPA assessment clearly outlines our intent to

survey the area. However, for some reason we have never been able to provide permissions or guidance with regards to survey operations in or near critical habitats.

I can either provide Fugro another authorization letter, or give Dean a can-opener. Let me know.

Dave

On Wed, May 22, 2013 at 1:48 PM, Dean Moyles <[dmoyles@fugro.com](mailto:dmoyles@fugro.com)> wrote:  
Thanks.

---

**From:** Corey Allen - NOAA Federal [mailto:[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)]  
**Sent:** Wednesday, May 22, 2013 10:46 AM  
**To:** Dean Moyles  
**Cc:** David Scharff - NOAA Federal <[david.scharff@noaa.gov](mailto:david.scharff@noaa.gov)>; Marc Moser - NOAA Federal <[marc.s.moser@noaa.gov](mailto:marc.s.moser@noaa.gov)>  
**Subject:** Re: No Transit Zone

Dean,

Fully understand walking the line between CYA and opening a can of worms. I was able to track down some of the 2011 documents and need to consult with OCS' NEPA person (Kathleen Jamison) and Jeff before deciding on a course of action (ie asking for 2013 approval or hanging our hat on the 2011 approval). I won't be able to get all the players together until tomorrow morning, but will touch base with you immediately following that meeting to provide additional guidance.

Cheers, Corey

On Wed, May 22, 2013 at 1:28 PM, Dean Moyles <[dmoyles@fugro.com](mailto:dmoyles@fugro.com)> wrote:

I don't want to open up a can of worms here, but I need to cover us, in the past we have dealt with :

## **NOAA/NMFS**

Lisa Rotterman

NMFS/AKR PROTECTED RESOURCES DIVISION

Steller Sea Lion Coordinator

[907-271-1692](tel:907-271-1692)

[lisa.rotterman@noaa.gov](mailto:lisa.rotterman@noaa.gov)

She is currently working with JOA on gaining permission for the Broad Bight tide gauge. To give you a little history here; in 2011 we were in a Sea Lion haul out zone as well, and got approval by sending here our HSE plan and procedures. In 2012 we tried the same but never heard back from her after I sent the HSE plan and procedures. Not sure if I should contact her again or if someone from NOAA do it first, what are your thoughts?

---

**From:** Corey Allen - NOAA Federal [mailto:[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)]  
**Sent:** Wednesday, May 22, 2013 10:21 AM  
**To:** Dean Moyles

**Cc:** David Scharff - NOAA Federal  
**Subject:** Re: No Transit Zone

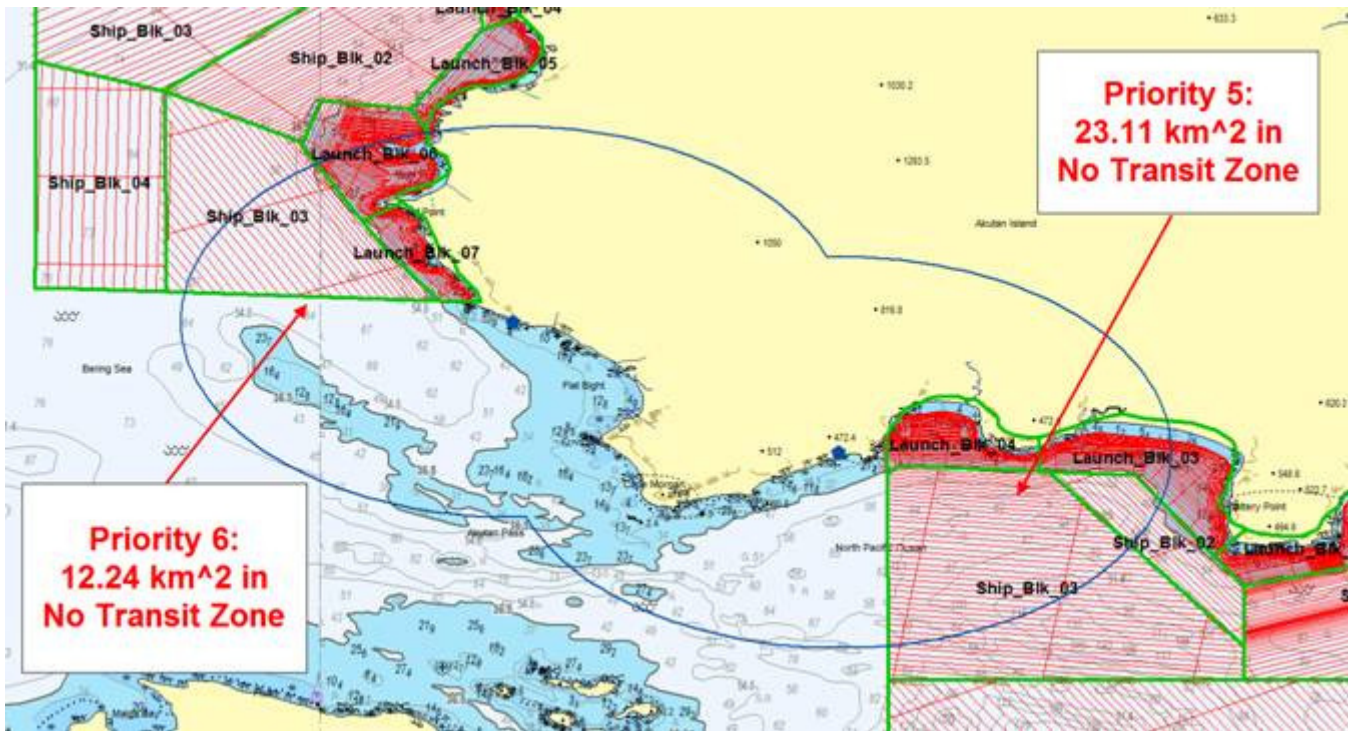
Dean,

Got your message. I'm not having much luck looking back in our archives to find the approval/waiver for these "No Transit Zones." I'll keep looking and asking around, but any documentation, POCs, etc you could pass along for background would be greatly appreciated.

Cheers, Corey

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**Dean Moyles**

*Project Manager/Senior Hydrographer (ACSM cert. No. 226)*

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## Moyles, Dean

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**From:** Corey Allen - NOAA Federal [corey.allen@noaa.gov]  
**Sent:** Thursday, May 23, 2013 6:05 AM  
**To:** Dean Moyles  
**Cc:** marc.s.moser@noaa.gov; David Scharff - NOAA Federal  
**Subject:** Re: No Transit Zone

Dean,

After further discussion with Jeff and LCDR Moser, we would like you to proceed as follows:

OCS has vet and provided opportunity for comment to the 2013 update of our NEPA documentation. No comments were received regarding our planned survey activities in the Krenitzin Islands. We do not feel it is necessary for you to contact NMSF (Lisa Rotterman) at this time, and would like you to operate, until further notice, under similar guidance provided for the area in 2011.

You are authorized to commence survey operations as described in the Project Instructions for OPR-Q191-KR-13 providing the following guidance is strictly adhered to: (1) the field parties should exercise extra diligence while surveying in the established sea lion critical habitat and avoid any actions that may lead to contact or impose undue stress on marine mammals, (2) adhere to the mammal impact mitigation procedures outlined in Fugro's Marine Project HSE Plan and (3) if in the course of conducting the survey avoidance with marine mammals is not possible for any reason contact the COR so that alternatives may be discussed.

Please let your COR or I know if you have any additional questions. Also, please let us know if you would like this guidance documented in a more formal letter or if this email correspondence is sufficient.

Best of luck as you begin survey operations.

Cheers, Corey

On Wed, May 22, 2013 at 5:07 PM, David Scharff - NOAA Federal <[david.scharff@noaa.gov](mailto:david.scharff@noaa.gov)> wrote:  
Corey,

Here is the background on our attempt to establish permissions to operate near the rookeries and no transit zones in the Krenitzin Islands.

In the beginning of 2011 Kathleen provided our NEPA assessment to NMFS which included our plans to survey the Krenitzin Islands - we never received feedback and assumed there were no issues with HSD's plan.

7/25/2011 - Fugro established contact with Lisa Rotterman, NMFS's Steller Sea Lion Coordinator requesting permission to enter the sea lion critical habitat. Her response was that she would review their project.

7/27/2011 - Given the project was about to begin Kathleen and I contacted Lisa, she responded with a series of questions which Fugro, Kathleen and I responded to. In addition we provided the PIs, NEPA report, Fugro's Health, Safety and Environmental (HSE) policy which address operation in protected habitats, along with various other documents.

7/28/2011 - Given the need to proceed I provided Fugro with the following email:

"James,

Re: Hydrographic survey operations in the vicinity of the Steller sea lion critical habitat near Akun Island.

At this time NOAA does not have any established protocols in place for hydrographic survey operations in or near marine protected areas. Kathleen Jamison and I are in contact with NOAA's Office of Protected Resources in Silver Spring and the regional office in Anchorage and will provide you further guidance as it becomes available.

You are authorized to commence survey operations as described in the Project Instructions for OPR-Q191-KR-11 providing the following guidance is adhered to: (1) the field parties should exercise extra diligence while surveying in the established sea lion critical habitat and avoid any actions that may lead to contact or impose undue stress on marine mammals, (2) adhere to the mammal impact mitigation procedures outlined in Section-3 of Fugro's Marine Project HSE Plan and (3) if in the course of conducting the survey avoidance with marine mammals is not possible for any reason contact me so we may discuss alternatives.

Regards,  
Dave"

8/2/2011 - Kathleen and I received more questions from Lisa that were promptly answered. She never responded back.

Summer of 2012 - Fugro attempted to contact Lisa regarding permissions into the Steller sea lion critical habitat again. They never received a response.

Bottom line - Fisheries does know Fugro has been working in the Krenitzin Islands, they know they are working there this year as JOA requested a permit, and our NEPA assessment clearly outlines our intent to survey the area. However, for some reason we have never been able to provide permissions or guidance with regards to survey operations in or near critical habitats.

I can either provide Fugro another authorization letter, or give Dean a can-opener. Let me know.

Dave

On Wed, May 22, 2013 at 1:48 PM, Dean Moyles <[dmoyles@fugro.com](mailto:dmoyles@fugro.com)> wrote:  
Thanks.

---

**From:** Corey Allen - NOAA Federal [mailto:[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)]  
**Sent:** Wednesday, May 22, 2013 10:46 AM  
**To:** Dean Moyles  
**Cc:** David Scharff - NOAA Federal <[david.scharff@noaa.gov](mailto:david.scharff@noaa.gov)>; Marc Moser - NOAA Federal <[marc.s.moser@noaa.gov](mailto:marc.s.moser@noaa.gov)>  
**Subject:** Re: No Transit Zone

Dean,  
Fully understand walking the line between CYA and opening a can of worms. I was able to track down some of the 2011 documents and need to consult with OCS' NEPA person (Kathleen Jamison) and Jeff before deciding on a course of action (ie asking for 2013 approval or hanging our hat on the 2011 approval). I won't be able to get all the players together until tomorrow morning, but will touch base with you immediately following that meeting to provide additional guidance.

Cheers, Corey

On Wed, May 22, 2013 at 1:28 PM, Dean Moyles <[dmoyles@fugro.com](mailto:dmoyles@fugro.com)> wrote:

I don't want to open up a can of worms here, but I need to cover us, in the past we have dealt with :



## NOAA/NMFS

Lisa Rotterman

NMFS/AKR PROTECTED RESOURCES DIVISION

Steller Sea Lion Coordinator

[907-271-1692](tel:907-271-1692)

[lisa.rotterman@noaa.gov](mailto:lisa.rotterman@noaa.gov)

She is currently working with JOA on gaining permission for the Broad Bight tide gauge. To give you a little history here; in 2011 we were in a Sea Lion haul out zone as well, and got approval by sending here our HSE plan and procedures. In 2012 we tried the same but never heard back from her after I sent the HSE plan and procedures. Not sure if I should contact her again or if someone from NOAA do it first, what are your thoughts?

---

**From:** Corey Allen - NOAA Federal [mailto:[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)]

**Sent:** Wednesday, May 22, 2013 10:21 AM

**To:** Dean Moyles

**Cc:** David Scharff - NOAA Federal

**Subject:** Re: No Transit Zone

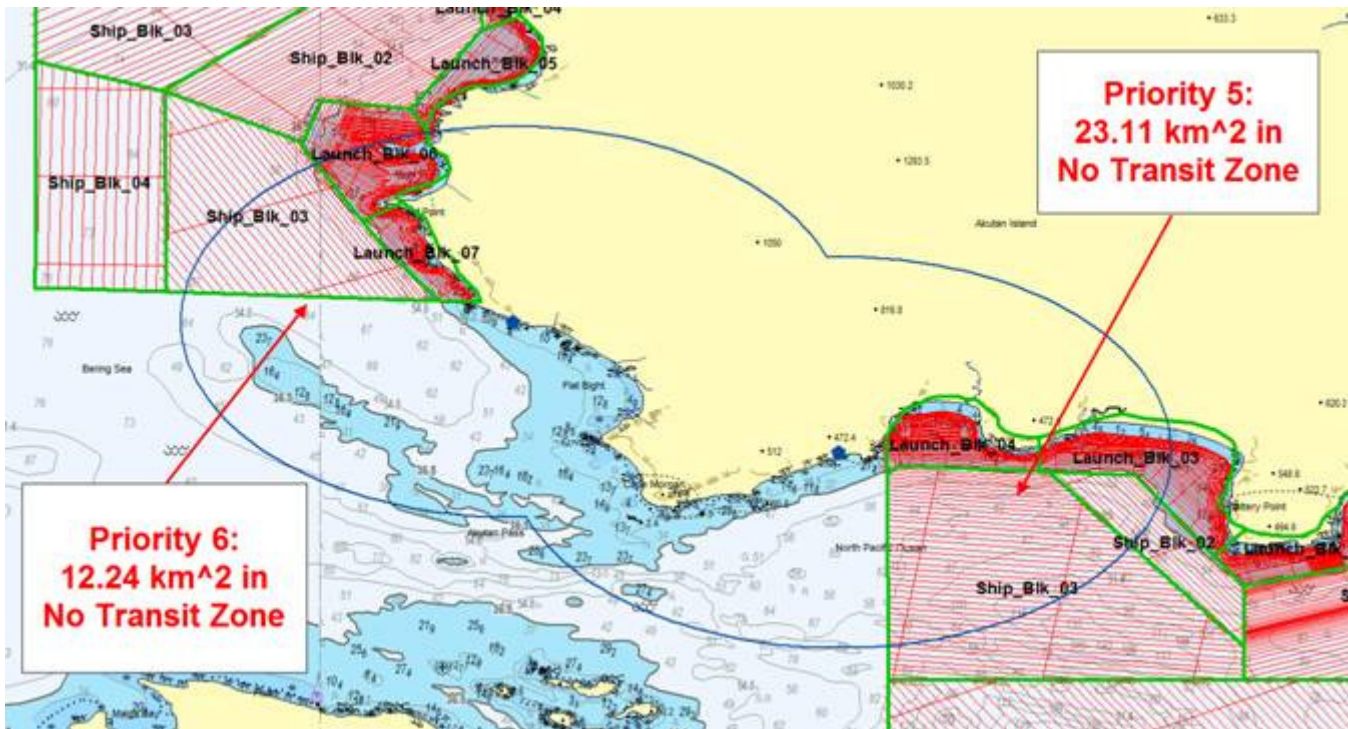
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## Moyles, Dean

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**From:** David Scharff - NOAA Federal [david.scharff@noaa.gov]  
**Sent:** Tuesday, July 16, 2013 8:02 AM  
**To:** Dean Moyles  
**Subject:** Re: Question

I would say too much - as per the project instructions you are not required to address any feature that falls inshore of the 4 fathom contour regardless of whether it was assigned or not. However, that being said those assigned features you believe to be a navigational hazard close to the limit (e.g. features marked with green ellipse) and can be addressed in some way safely I personally might at the very least make a note in the DR. Let me know if that makes sense to you. I will discuss this with Crescent later today.

On Mon, Jul 15, 2013 at 8:55 PM, Dean Moyles <[dmoyles@fugro.com](mailto:dmoyles@fugro.com)> wrote:

I need some guidance on our shoreline feature methodology, I was hoping to be further along here so we could review during your trip, but that was not the case. In the attached graphic I have outlined the features with either a red, orange or green ellipse. The red represents features that we will not be address, orange we will make an attempt and green which will be verified. The green/magenta interface on the DTM represents the 4 fathom contour, so they most all lie outside our survey limit.

Does this look like a good approach, too much or too little?

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## Moyles, Dean

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**From:** Gerald Hovis - NOAA Federal [gerald.hovis@noaa.gov]  
**Sent:** Wednesday, September 25, 2013 4:11 AM  
**To:** Mike Zieserl  
**Cc:** David.Scharff; Moyles, Dean; Nathan Wardwell; \_NOS CO-OPS OET Team; psb  
**Subject:** Fwd: Hydro Project OPR-Q191-KR-13 Removal Documentation Evaluations  
**Attachments:** 9462676 Broad Bight, AK FY13 Hydro Removal Evaluation.doc; 9462705 Green Bight, AK FY13 Hydro Removal Evaluation.doc; 9462786 SE Tigalda Island, AK FY13 Hydro Removal Evaluation.doc

Mike,

The removal documentation for the three tertiary stations (9462676 Broad Bight, AK, 9462705 Green Bight, AK, and 9462786 SE Tigalda Island, AK) installed for project OPR-Q191-KR-2013 have been accepted as FINAL. Attached are the final records evaluations for the water level stations' metadata.

The stations have been configured in WALI and we have added them to your processing group. This group has permissions to load, edit, and complete the processing of six minute, hourly heights, highs / lows, and monthly means (if applicable) water level data for these stations. To expedite final deliverables to OCS please notify me ([gerald.hovis@noaa.gov](mailto:gerald.hovis@noaa.gov)) and OET ([nos.coops.oetteam@noaa.gov](mailto:nos.coops.oetteam@noaa.gov)) and PSB ([nos.co-ops.psb@noaa.gov](mailto:nos.co-ops.psb@noaa.gov)) as soon as you have completed this work so CO-OPS may verify the products. Once the data have been verified we will notify JOA so the products may be utilized for final tide reduction.

**NOTE:** Several steps in the flow of using WALI to process data by external contractors are still being worked out so please do not hesitate to contact me or the hydro planning team if you need clarification. Notable here are: First, to the extent that it is practicable please include information about the station parameters below in the read me file that is submitted with the initial station package to OET. These parameters are required to process a station. Second, currently WALI does not process harmonic constituents once datums have been computed and we have been notified to verify the data CO-OPS will have to use this data to compute harmonics and notify JOA should that information be needed for contractor tide reduction analysis. WALI version 2 (currently under production) will include this function. The HSSD will be updated to reflect any needed changes as soon as the process is documented and finalized.

Required Station Parameters: (Note: Control station parameters may be substituted if values are not available from subordinate station. Please note proposed Control station in read me file.)

1. WL\_MAX - Maximum historical observed water level for a station with date.
2. WL\_MIN - Minimum historical observed water level for a station with date.
3. WL\_ROFC - Rate of Change or Third Difference for a station. Use the value from the control or reference station.
4. TIDE\_TYPE - 1 Semidiurnal, 2 Mixed Semidiurnal, 3 Mixed Diurnal, 4 Diurnal and 5 Great Lakes.
5. MAX\_RANGE - Maximum range between two tides at a station. WL\_MAX minus WL\_MIN or use the value from the control or reference station.
6. MAX\_TIME - Maximum time between two tides at a station. May use the value from the control or reference station.
7. MIN\_RANGE - Minimum range between two tides at a station. Value should always be 0.030 m.
8. MIN\_TIME - Minimum time between two tides at a station. Value should always be 2.0 hours.
9. DEPLOYMENT\_DESIGNATION - For Contract Hydro deployment designation should always be 4.

Please do not hesitate to contact us if you have any issues.

And as always.....Have a great day!

Jerry

--

Jerry Hovis  
Products and Services Branch  
Oceanographic Division  
Center for Operational Oceanographic Products & Services  
National Ocean Service  
National Oceanographic Atmospheric Administration  
<http://www.tidesandcurrents.noaa.gov/>

[gerald.hovis@noaa.gov](mailto:gerald.hovis@noaa.gov)

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APPROVAL PAGE

H12545

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NGDC for archive

- H12545\_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12545\_GeoImage.pdf

The survey evaluation and verification has been conducted according current OCS Specifications.

Approved: \_\_\_\_\_

**Peter Holmberg**

Cartographic Team Lead, Pacific Hydrographic Branch

The survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved: \_\_\_\_\_

**CDR Benjamin K. Evans, NOAA**

Chief, Pacific Hydrographic Branch