

H11688

NOAA FORM 76-35A

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

## DESCRIPTIVE REPORT

*Type of Survey* . . . . . HYDROGRAPHIC

*Field No.* . . . . .

*Registry No.* . . . . . H11688

### LOCALITY

*State* . . . . . ALASKA

*General Locality* . . . . . West of Prince of Wales Island

*Sublocality* Tonowek Bay

2007

### CHIEF OF PARTY

Commander Guy T. Noll, NOAA

### LIBRARY & ARCHIVES

DATE . . . . .

**HYDROGRAPHIC TITLE SHEET**

H11688

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.  
RA-10-05-07

State Alaska

General Locality West of Prince of Wales Island

Sublocality Tonowek Bay

Scale 1:10,000 Dates of Survey 5/6/2007 to 7/25/2007

Instructions Date 4/30/2007 Project No. OPR-O190-RA-07

Vessel Launch 1101, Launch 1103, Launch 1021, Launch 1016, Launch 1015

Chief of Party CDR Guy T. Noll, NOAA

Surveyed by Jacobson, Riley, Yoos

Soundings taken by echo sounders: Reson 8101, Reson 8125

Graphic record scaled by N/A

Graphic record checked by N/A

Evaluation by K. Reser Automated plot by N/A

Verification by K. Brown

Soundings in Fathoms at MLLW

REMARKS: Time in UTC. UTM Projection Zone 8

Revisions and annotations appearing as endnotes were

generated during office processing.

As a result, page numbering may be interrupted or non-sequential

All separates are filed with the hydrographic data.



# Descriptive Report to Accompany Hydrographic Survey H11688

Project OPR-O190-RA-07  
West Prince of Wales Island, Alaska  
Tonowek Bay  
Scale 1:10,000  
May – July, 2007  
**NOAA Ship RAINIER (s221)**  
Chief of Party: Commander Guy T. Noll, NOAA

## A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-O190-RA-07 dated April, 30, 2007 and all other applicable direction<sup>1</sup>, with the exception of deviations noted in this report. The survey area is west of Prince of Wales Island, encompassing Tonowek Bay and Warm Chuck Inlet off Hecta Island. This survey corresponds to sheet “F” in the sheet layout provided with the Letter Instructions. OPR-O190-RA-07 responds to a request from the National Ocean Service (NOS) for the purpose of updating nautical charts. This project lies in the critical survey area of the NOAA Hydrographic Survey Priorities (NHSP).

Except as noted below, complete multibeam echosounder (MBES) coverage was obtained in the survey area in waters 4 meters and deeper. Vertical beam echo sounder (VBES) data was acquired in depths from approximately 4 to 20 meters to define the navigable area limit, aid in the planning of SWMB data acquisition, and provide inshore bathymetry in navigationally significant areas. Side scan sonar was used to for object detection and feature identification purposes in select near shore areas as well. Time constraints and a reduction in functional MBES launch systems during this project lead to the expanded use of VBES and Side Scan acquisition where complete multibeam coverage could not be achieved near shore.

Limited Shoreline Verification was performed for the survey area.

Data Acquisition Type	Hull Number with Mileage (nm)							Total
	1101 RA 1	1103 RA 2	1021 RA 3	1016 RA 4	1006 RA 5	1015 RA 6	dive	
VBES (mainscheme)	88.72	23.31	--	--	--	--	--	112.03
MBES (mainscheme)	--	--	6.01	202.78	99.45	74.25	--	382.49
SSS (mainscheme) *	--	--	--	--	--	72.18	--	72.18
Crosslines	4.97	3.69	--	--	--	25.56	--	34.22
Holidays & Developments	15.78	4.18	9.41	40.29	11.13	--	--	80.79
Shoreline	20.79	33.92	--	--	--	--	--	54.71
Bottom Samples	--	--	24	--	--	--	--	24
Total Number of Items Investigated	45	28	--	--	--	--	2	74
Total Area Surveyed (sq. nm)	--	--	--	--	--	--	--	19.66

Table 1: Statistics for survey H11688

\* SSS was collected with the C3D Interferometric sonar; it is being submitted as SSS only with no processed bathymetry.

Data acquisition was conducted from May 6th to July 25th, 2007 (DN 126 to 206).

<sup>1</sup> Standing Instructions for Hydrographic Surveys (January 2006), NOS Hydrographic Surveys Specifications and Deliverables (April 2007), OCS Field Procedures Manual for Hydrographic Surveying (March 2007), and all Hydrographic Surveys Technical Directives issued through the dates of data acquisition.

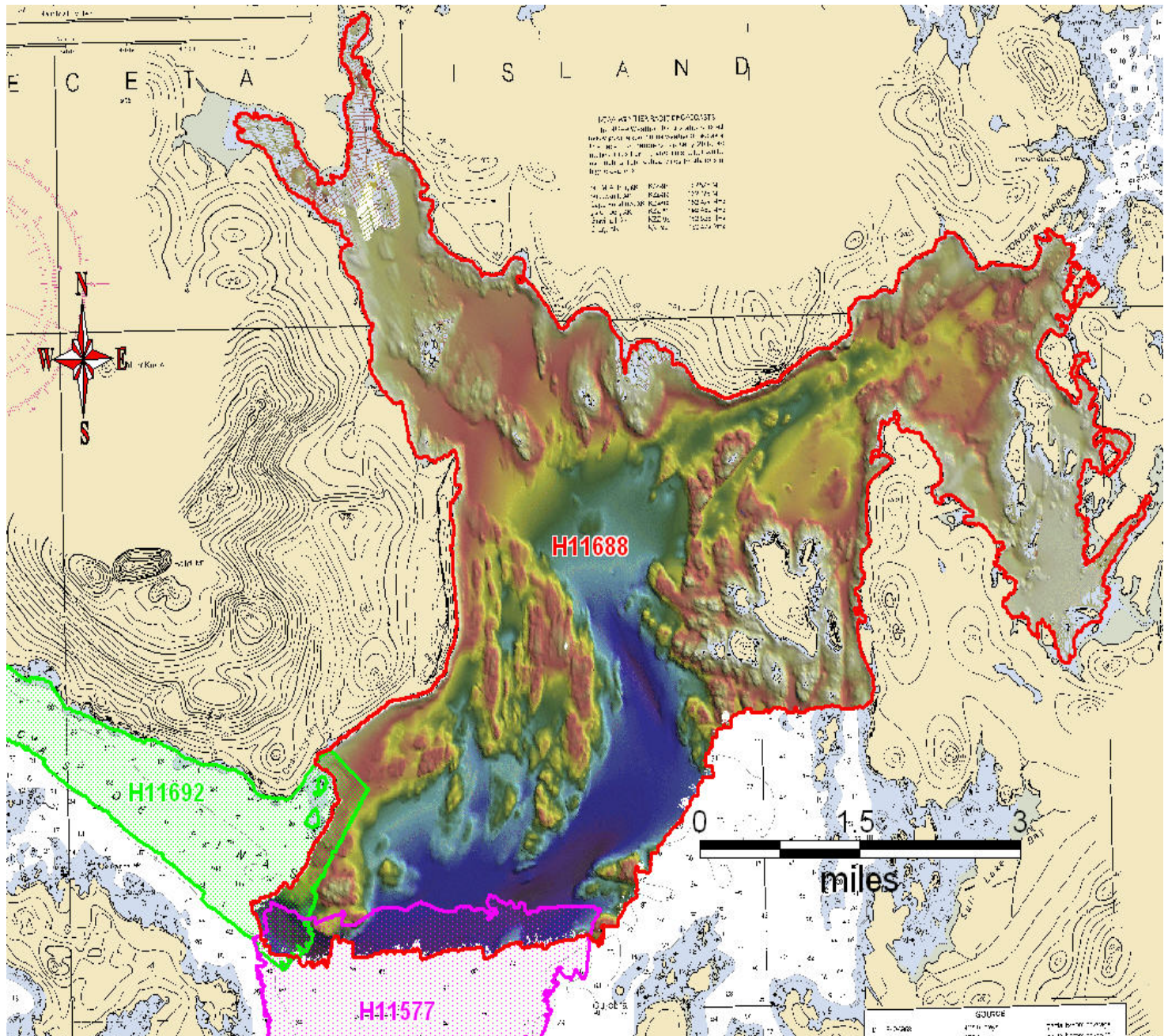


Figure 1: H11688 Survey Limits and Junctions (Chart 17404\_1).

**DATA ACQUISITION AND PROCESSING**

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *OPR-O190-RA-07 Data Acquisition and Processing Report (DAPR)*<sup>1</sup>, submitted under separate cover. Items specific to this survey, and any deviations from the DAPR are discussed in the following sections.

**Final Approved Water Levels have been applied to this survey.**<sup>2</sup> See Section C. for additional information.

**B1. Equipment and Vessels**

Data for this survey were acquired by the following vessels:

Hull Number	Name	Acquisition Type
1101	RA-1	Vertical Beam Echosounder Detached Positions
1103	RA-2	Vertical Beam Echosounder Detached Positions
1021	RA-3	Multibeam Echosounder Bottom Samples
1016	RA-4	Multibeam Echosounder
1006	RA-5	Multibeam Echosounder
1015	RA-6	Multibeam Echosounder Interferometric Echosounder

*Table 2: Data Acquisition Vessels for H11688.*

Sound speed profiles were measured with SEACAT SBE-19 and 19+ profilers in accordance with the Specifications and Deliverables.

**B2. Quality Control**

**Crosslines**

Vertical Beam Echo Sounder (VBES) crosslines totaled 8.66 nautical miles, comprising 7.7% of mainscheme VBES hydrography. The shoreline buffer line was also used to determine agreement of VBES soundings. Crossline and Main Scheme bathymetry were manually compared in CARIS HIPS Subset Mode. Crosslines generally agreed within 1 meter of mainscheme hydrography.<sup>3</sup>



Multi-Beam Echosounder (MBES) crosslines totaled 25.56 nautical miles, comprising 6.6% of main scheme MBES hydrography. The mainscheme bathymetry agreed well. A comparison was performed using the surface differencing tool in Fledermaus. A surface statistics report was generated and showed the average to be -0.143m, with a median of -0.087m and a standard deviation of 1.370m (see figure 2). The high standard deviation may be attributed to the large number of steep slopes and features in the area.<sup>4</sup>

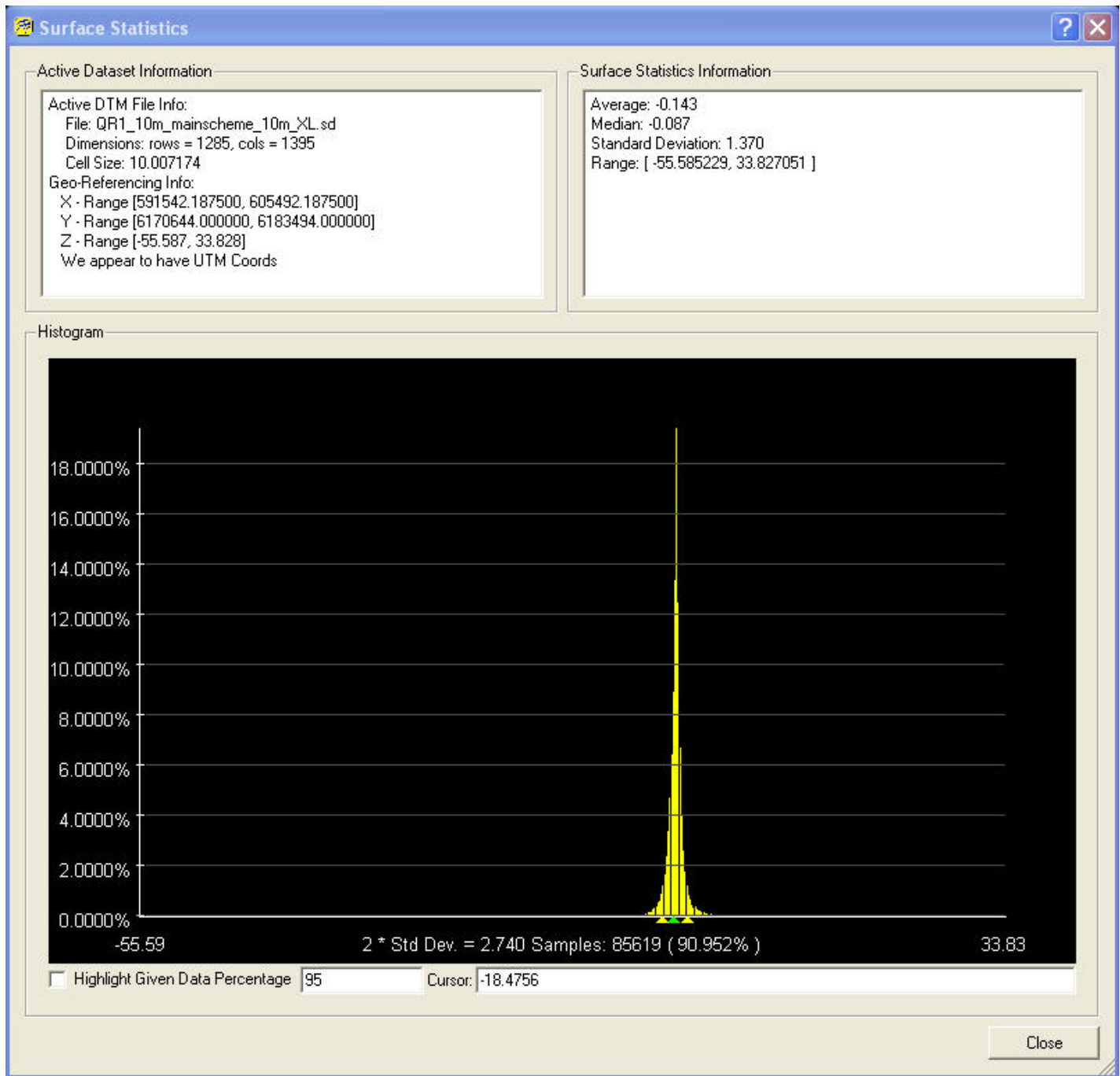


Figure 2: Surface statistic report for XL comparison with mainscheme hydrography

A statistical Quality Control Report has been conducted on representative data acquired with each system used on this survey. Results of these tests are included in the updated 2007 RAINIER Hydrographic System Readiness Review package submitted with this survey.

## Junctions

The following contemporary surveys junctions with H11688 (See Figure 1):

<u>Registry #</u>	<u>Scale</u>	<u>Date</u>	<u>Junction side</u>
H11577	1:20,000	2006	South
H11692	1:10,000	2007	West

CARIS Field Sheets and BASE surfaces for H11577 were provided by Pacific Hydrographic Branch for junction comparison. H11577 BASE surfaces were compared to the final combined surface for H11688 in CARIS field sheet editor. Surveys agreed well with differences not exceeding 1 fathom.<sup>5</sup>

Survey H11692 was run concurrently during project OPR-O190-RA-07. It junctions with the west side of survey H11688 were Tonowek Bay meets Bocas de Finas, near the Desconocida Reef. Surveys were compared in CARIS field sheet editor and agreed well with differences not exceeding 1 fathom.<sup>6</sup>

## Data Quality Factors

### Time Offset

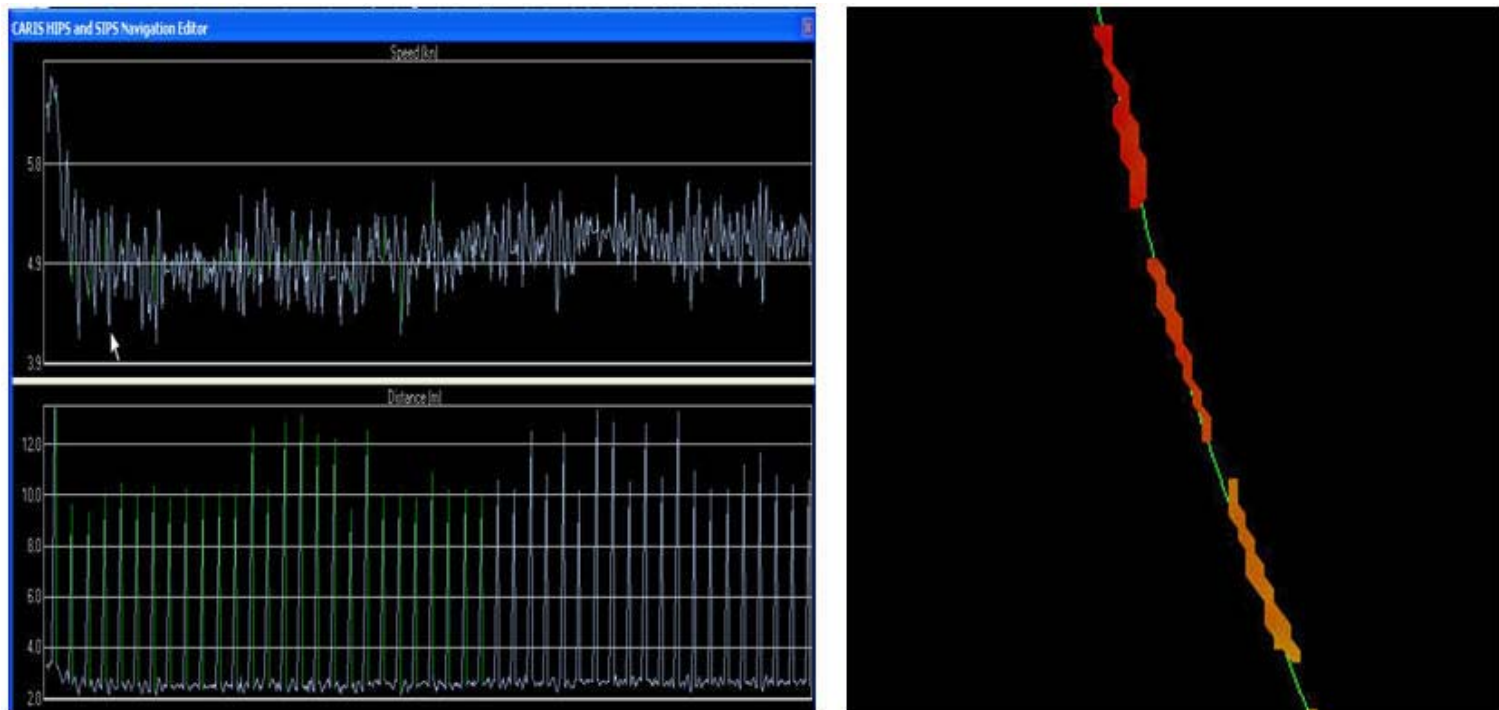
All data acquired with RA 1 (1101) on DNs 126, 127, 128, and 129 were logged with the incorrect time. The problem occurred after the time zone on the acquisition computer on Launch 1101 (RA-1) was mistakenly set to London Greenwich Zone Time, which was set to observe daylight savings time, rather than Monrovia/Casablanca GMT, which does not. In addition, a new version of Hypack (version 6.2A) had been loaded, which did not default to synchronizing the clock with GPS. As a result, all data logged on these days received a time stamp that was one ahead of UTC GMT time. The clock was corrected after DN129, and all subsequent data was logged with the correct time. Affected data was corrected with the “Linear Adjustment” utility in the HSTP Post Acquisition Tools suite and shifted back 3600 seconds (1 hour). Detached Positions (DPs) acquired with RA1 (1101) on these days were manually fixed with Pydro’s DP editor.

After the hour offset was corrected, the affected data were re-tide corrected, re-svp corrected and re-merged. The affected lines files and DP’s still bear the incorrect time in the file name. For example, the Caris data from line 124\_2309 begins at time 2209. No original data was altered such that the paper acquisition logs and paper DP forms still contain the incorrect times, and all raw data contain the incorrect time. If data from RA 1 (1101) from DNs 126, 127, 128, and 129 are reconverted or re-imported the time error will return.

Additionally, data acquired with RA 1 (1101) on DN129 was time stamped with year 2019 rather than 2007. The cause of this error is unknown. The year in “TND” line of the Hypack file headers was manually corrected. These Hypack files were then re-converted to Caris. This data still had a one hour offset that was corrected with the method previously discussed. Time offsets for two DPs acquired with RA1 (1101) on DN 129 were manually corrected with Pydro’s DP editor.

### Vertical Beam Data Gaps

Vertical beam data acquired with Launch 1101 (RA-1) on DNs 179 and 180 were found during processing to have time lapses in the navigation data, causing gaps in the acquired depth information (see figure 3.) The error was determined to be the output. The update rate was set too high and the older processors on the launch essentially could not keep up. The computer would go through cycles of trying to catch up, leaving jumps/gaps in the distance. This resulted in areas between pings with no data. The navigation jumps were rejected with interpolation, and the hydrographer feels the resulting data is adequate to supersede charted depths.<sup>7</sup>



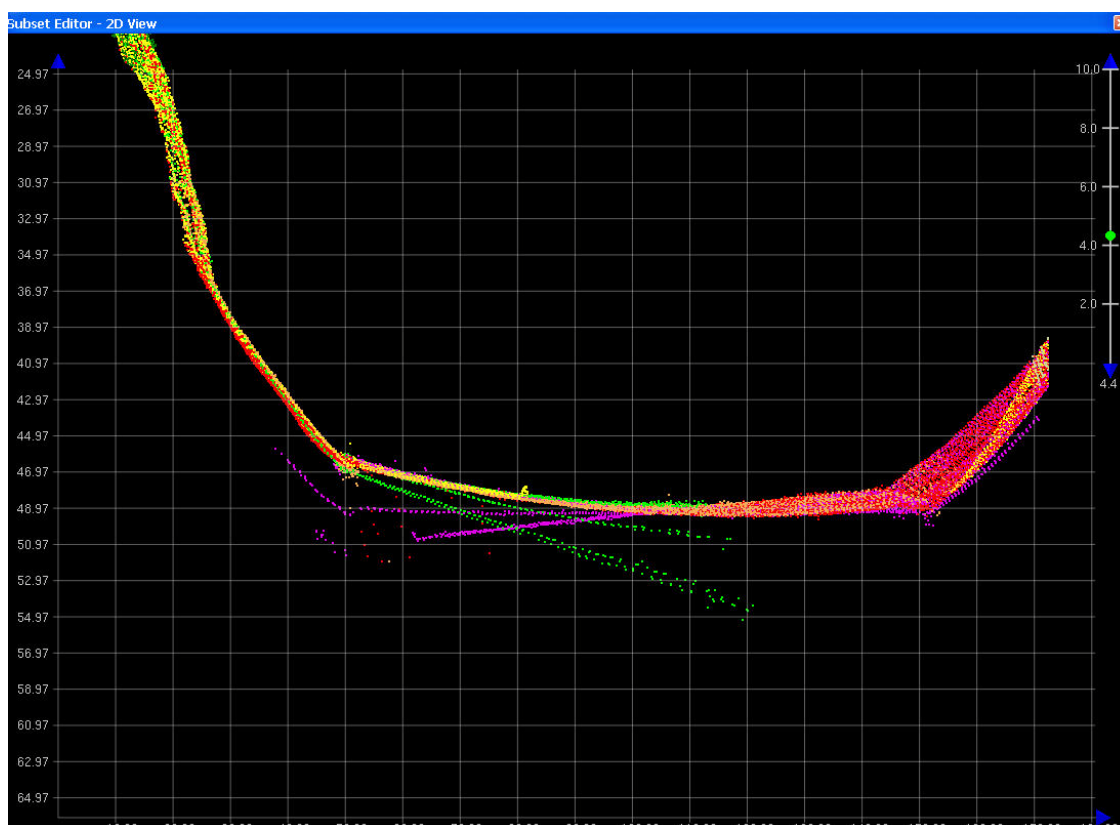
*Figure 3: Navigation spikes and resulting data gaps in single beam from launch 1101 (RA-1)*

### True Heave

No apparent heave artifacts are visible in the data<sup>8</sup>; however, some vessels did not have true heave data loaded on certain days. On DN 206, launch 1016 (RA-4) has no true heave applied. There appeared to be no true heave file recorded during acquisition on this day. Additionally, select lines acquired with launch 1016 (RA-4) on DN 177, and one line acquired on DN165 with Launch 1006 (RA-5) have no true heave corrections. The data for these vessels/days were processed using real-time heave only.

### Dynamic Time Offset between POS MV and Reson 8125

A number of lines acquired with Launch 1016 (RA-4) have a dynamic roll error. This error was caused by a drift in the Reson clock. Although Launch 1016 is configured for precise timing, a setup whereby data is time-stamped on creation vice arrival to the data logging software, the Reson clock drifted ahead of the POS M/V clock by up to 0.07 s. (For more information on precise timing, please see the vessel wiring diagrams submitted with the Hydrographic Systems Readiness Review, 2007 and the Field Procedures Manual dated March 2007). During these times, the clock drifted away from synchronization and after drifting 0.06 to 0.07 seconds from the POS clock, reset itself. The cause of this clock drift was determined to be incorrect wiring and has since been corrected. The small timing difference between the multibeam and the attitude sensor distorts the beams and appears as a roll error (see figure 4.) There were only a small number of such errors observed. The nature of the error was such that the affected areas could be rejected effectively without any lasting effects on the BASE surface. The hydrographer feels that data representation was not sacrificed and should be accepted to supersede charted depths.<sup>9</sup>



*Figure 4: Dynamic roll error as viewed in subset prior to rejection of effected data*

### Horizontal Offsets in Slope Areas

The Southwest corner of the sheet exhibits a small number of areas in the surface which appear to be vertical offsets between MBES data (see figures 5 and 6.) The problem areas are inconsistent within the same lines and appear only on the inshore areas of the survey. Upon further investigation, it appears that the errors are more likely a horizontal offset, but are enhanced by the fact that they occur in down slope areas. The errors appear to be approximately 0.3 to 0.4 meters. Although this exceeds IHO standards, they do not obscure the slope areas in any cartographically significant way. The hydrographer feels that the data is adequate to appropriately represent the area and should supersede charted depths.<sup>10</sup>

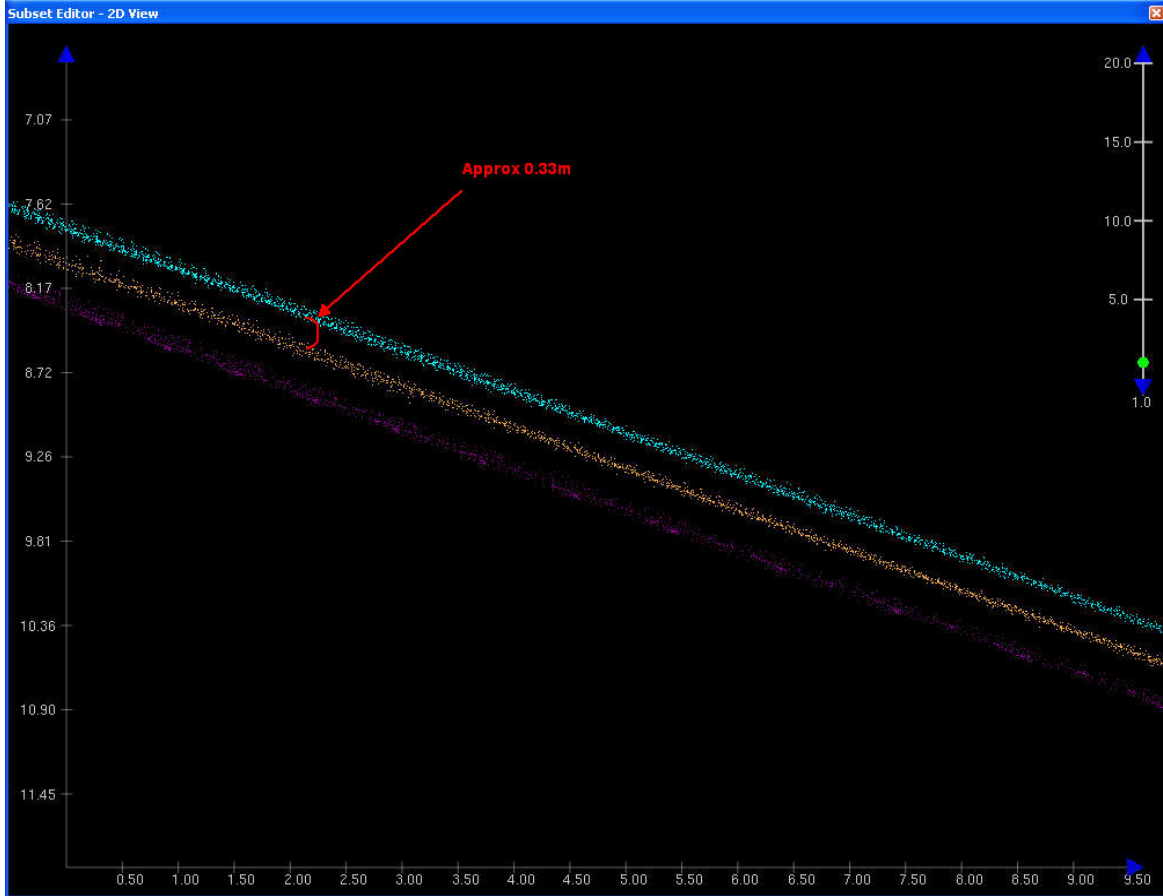


Figure 5: Offset between MBES survey lines measuring approx. 0.33m

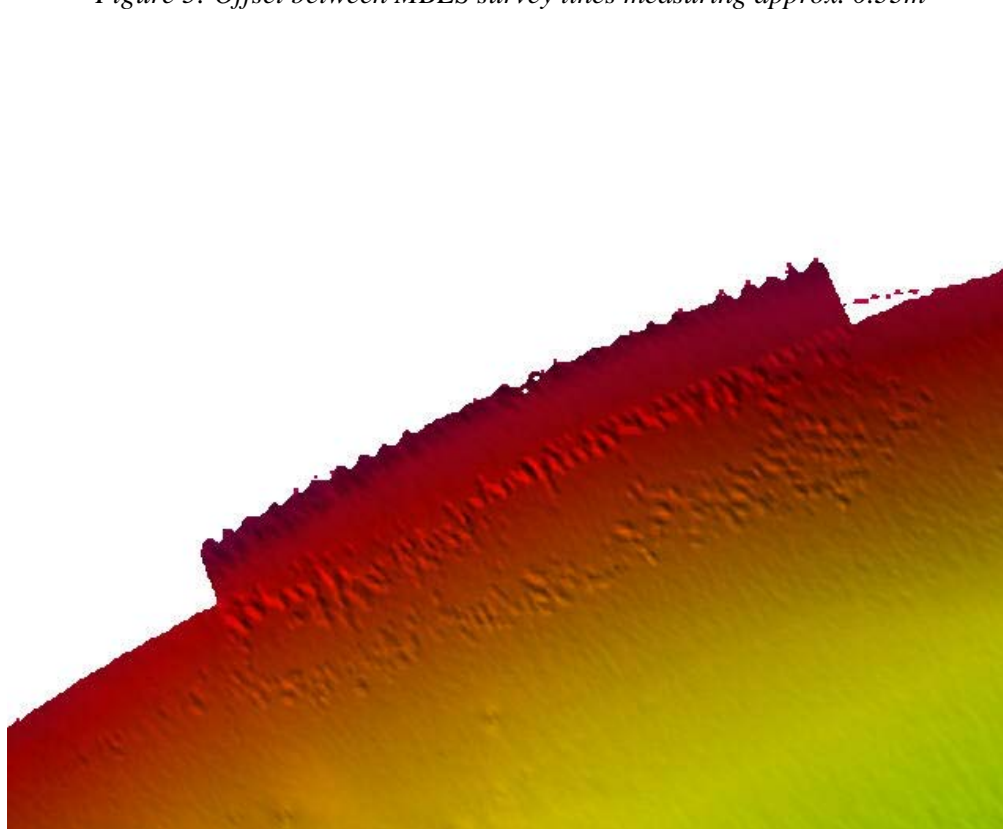


Figure 6: BASE surface effects of horizontal offset



### Reson 8125 Digibar Blowout: Holidays

On rare occasions during data acquisition for H11688, launch 1016 (RA-4) experienced Digibar blowouts that could generally be attributed to kelp on the Digibar. While this problem was usually noticed during acquisition and immediately addressed by re-running the survey line, a small number of lines were not addressed and not re-run. This resulted in the sound speed falling outside of the range that CARIS will convert, leaving gaps in the surface. In the few areas where this effect is seen, there is one significant feature (see figure 7, rock in SE corner of image), however, the shoal point of the feature is inshore of the NALL line run with the VBES during shoreline acquisition. The remaining gaps in MBES coverage have VBES data and no additional features were detected within these small holidays. The hydrographer feels the acquired data is sufficient to supersede charted depths and provide safe navigation information for mariners.<sup>11</sup>

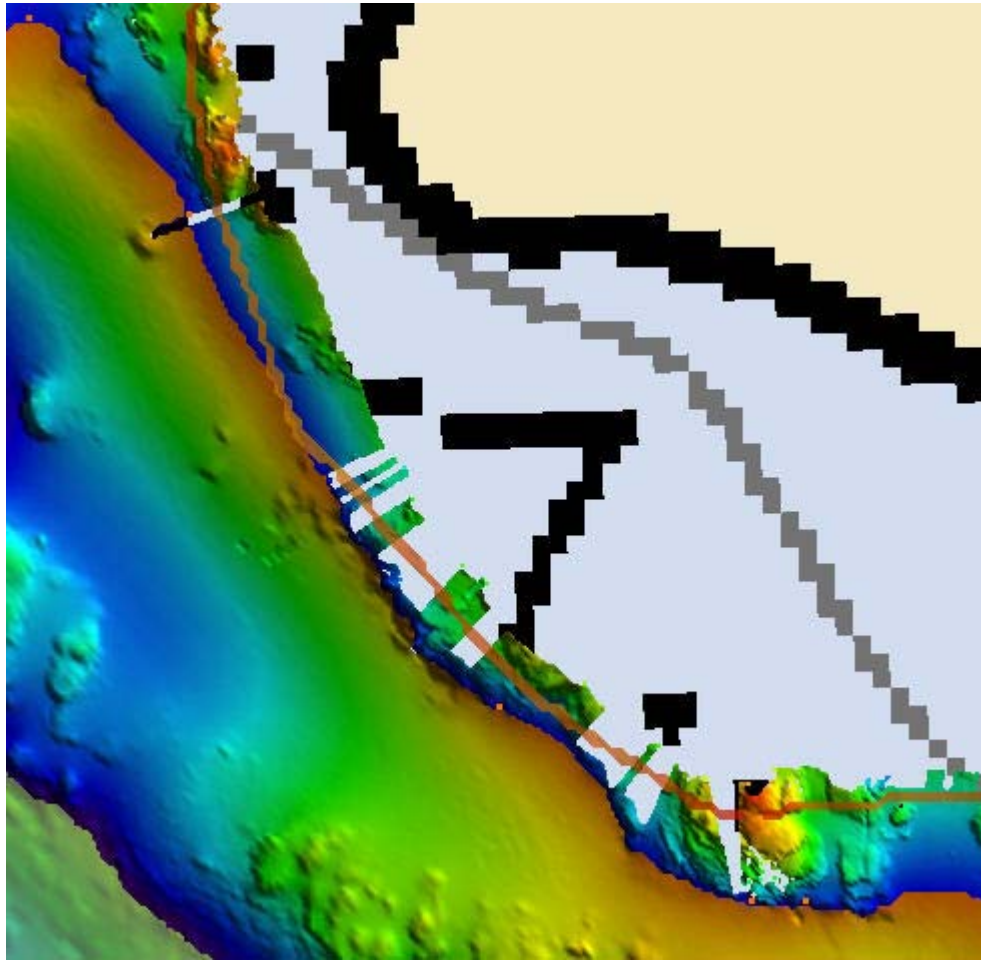


Figure 7: Holidays in H11688 resulting from 1016 (RA-4) Digibar blowouts and overlaid VBES buffer line.

MBES Holidays

A number of inshore areas have holidays where complete multibeam coverage was not obtained. These are primarily due to insufficient line spacing for complete coverage, as well as time constraints during survey operations that did not allow us to return to address all areas. There were also a number of areas where the inshore limit of hydrography was not reached. This was a result of many of the inshore areas being fouled with kelp<sup>12</sup> and the MBES launches not being able to maneuver into said areas as effectively as the VBES launches. Ultimately, there are areas near shore where we were able to run a vertical beam buffer line but not be able to survey to that limit later in the project with the multibeam. Outside of these there are a number of more significant holidays that should be mentioned.

A holiday was found over what may be the least depth on a large feature West of Harmony Island (see figure 8.) It is located in position 55°42'57.913"N, 133°25'06.160"W. The least depth acquired was approximately 0.4 fathom; a sounding has been designated to represent this depth. The hydrographer recommends that this feature be charted as a dangerous rock of unknown depth. The sounding has been imported into the Pydro PSS, H11688\_PSS as well as the H11688\_Pydro\_Updates.hob file in the submitted shoreline session.<sup>13</sup>

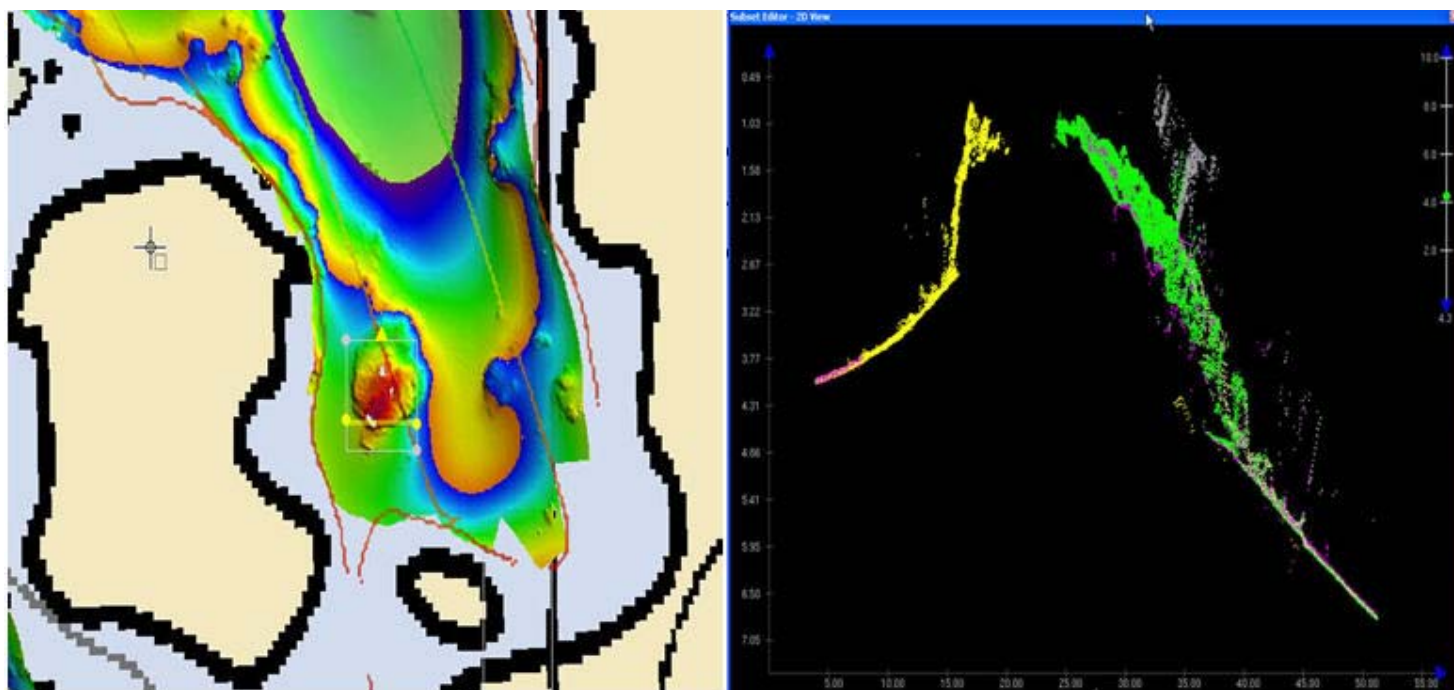


Figure 8: Holiday on possible high point of dangerous rock.

Two additional holidays are located off the northwest tip of Harmony Island. To the west is a significant holiday (holiday 1 as seen in Figure 9) located at position 55°43'20.461"N, 133°25'09.246"W. The least depth on this feature was found to be approximately 1 fathom. Although there is a holiday the hydrographer believes the least depth was captured in this case and recommends that the designated sounding be used for charting purposes. The second holiday, on the northern side of the island, appears to be purely a coverage gap resulting from incorrect line spacing. The least depth seen in this area was approximately 6 fathoms. It is located in a charted 6 fathom area and shows no indication of shoaling (see figure 9.) The Hydrographer recommends that coverage in both areas be used to supersede charted depths.<sup>14</sup>

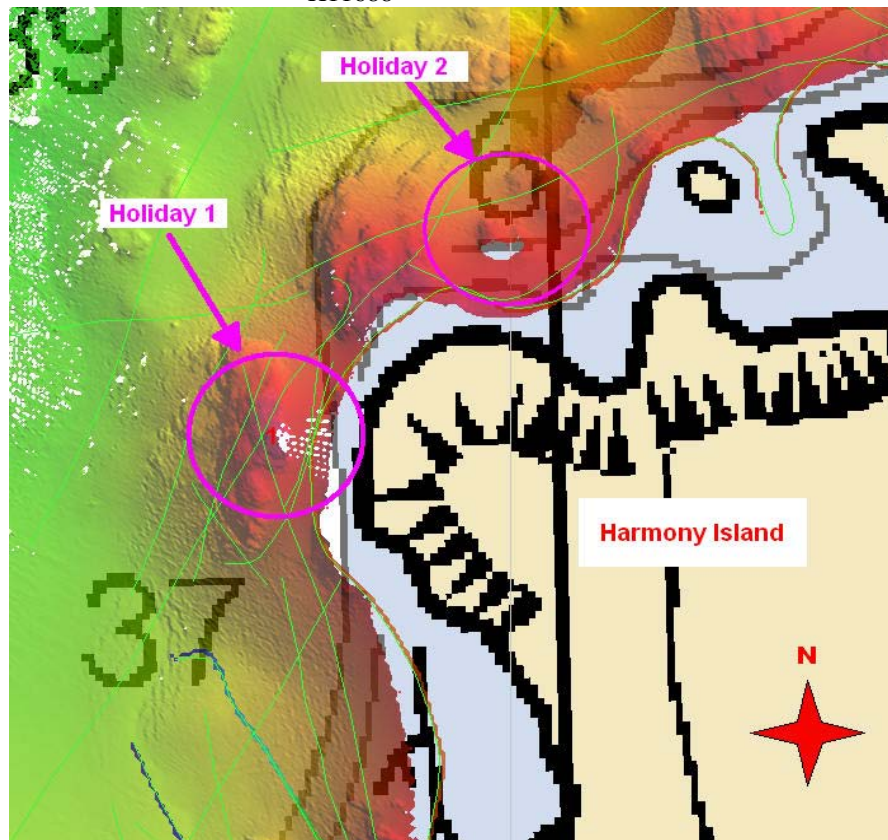


Figure 9: Near shore holidays at the NW tip of Harmony Island

North of Harmony Island on a submerged ledge that extends to Kabanof Rock, a holiday exists on an uncharted feature located at 55°43'40.683"N, 133°25'44.697"W. This feature has been submitted as a DTON and further information can be found in sections D.1.a and D.1.b. The holiday appears to be a result of insufficient coverage on the steep down slope of this feature (see figure 10). Although the CUBE surface does not have adequate data to represent the edge of the rock in the 1m surface, there is sparse data available and the hydrographer feels that the least depth of this feature had been represented.<sup>15</sup>

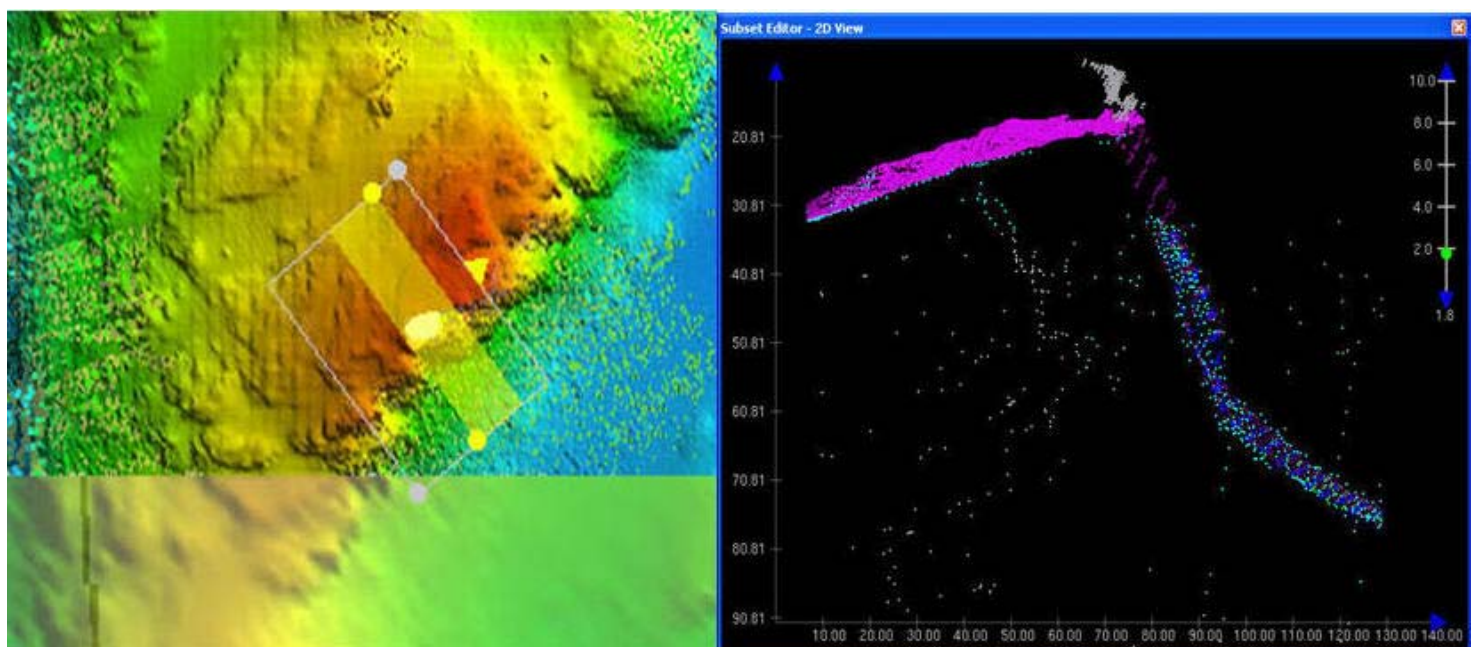


Figure 10: Holiday on uncharted feature as viewed in the BASE surface and in subset editor.

### B3. Data Reduction

Data reduction procedures for survey H11688 conform to those detailed in the *OPR-O190-RA-07 DAPR*.

### B4. Data Representation

Many BASE surfaces were used in processing H11688. Final BASE surface resolutions and depth ranges were set in accordance with RAINIER's standard in the table below. The submission Field Sheet and BASE Surface structure are shown in Figures 11 through 15.

<b>Depth Range (m)</b>	<b>Resolution (m)</b>
0-16	0.5
14-31.5	1
28.5-63	2
57-158	5
143 +	10

*Table 3: Depth ranges and resolutions for submitted BASE surfaces*

Soundings and contours were generated in CARIS HIPS from the final combined BASE surface for field unit review purposes. They are included for reference only and are not intended as a deliverable.

A side scan mosaic was created from data collected with the C3D system. This was used for object detection and feature identification. Features requiring further examination were investigated with VBES, MBES data, or dive investigations to acquire least depths.

Many areas within survey H11688 were surveyed with VBES only, or a combination of VBES and SSS. VBES data was processed in its own field sheet using an Uncertainty surface with 2m resolution. This data was finalized and added to the final combined surface used for chart comparison purposes.



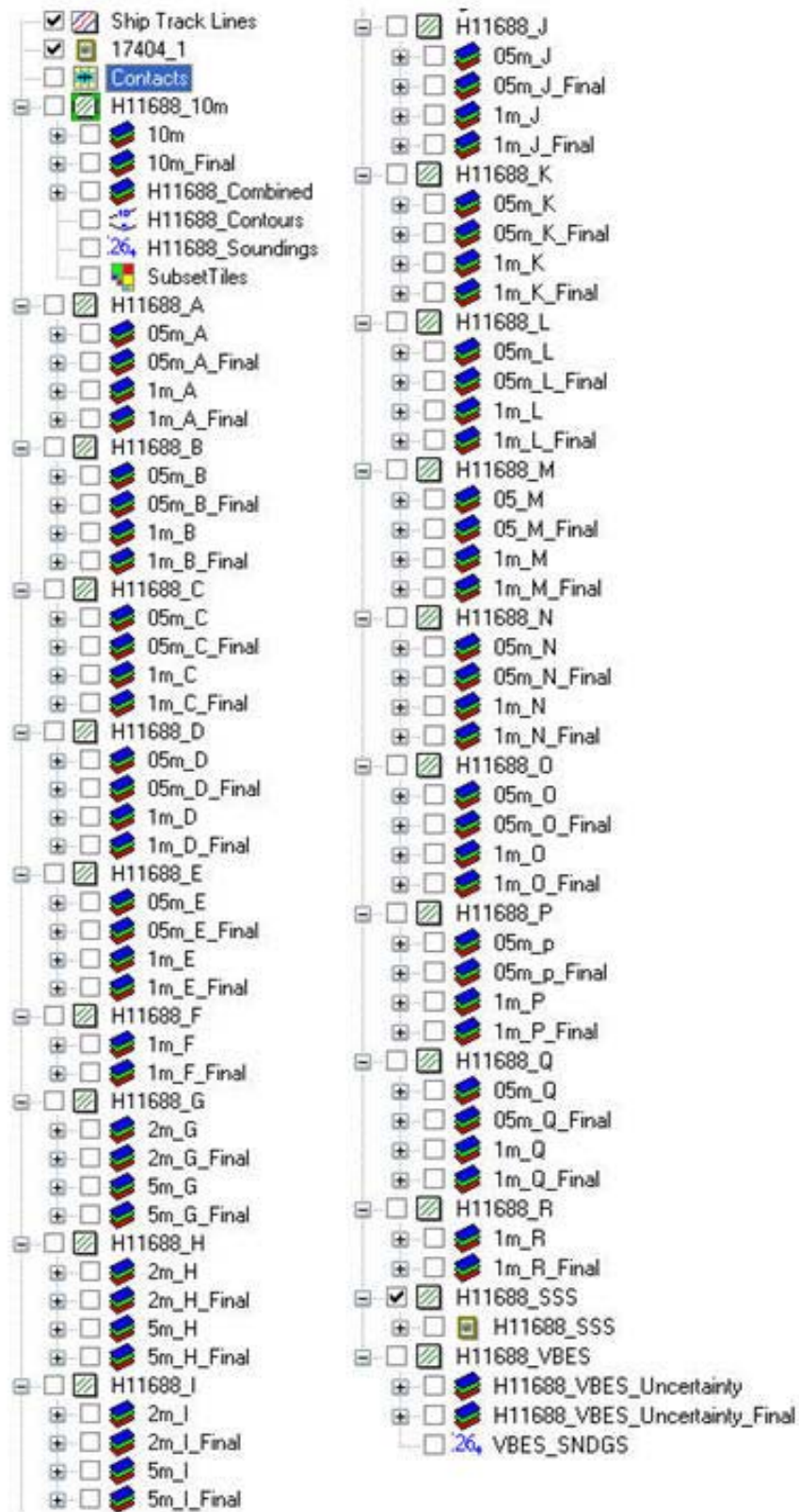


Figure 11: Field sheets and BASE surfaces submitted with H11688.



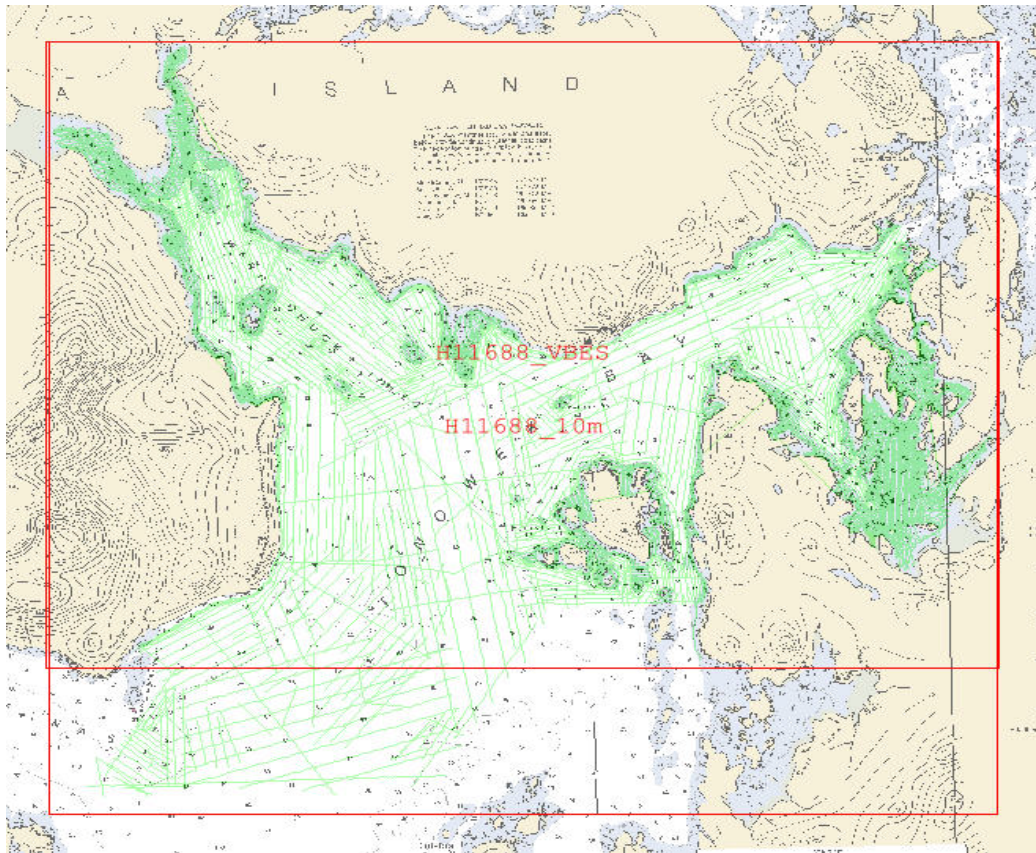


Figure 12: Field sheets for 10m and VBES surfaces.

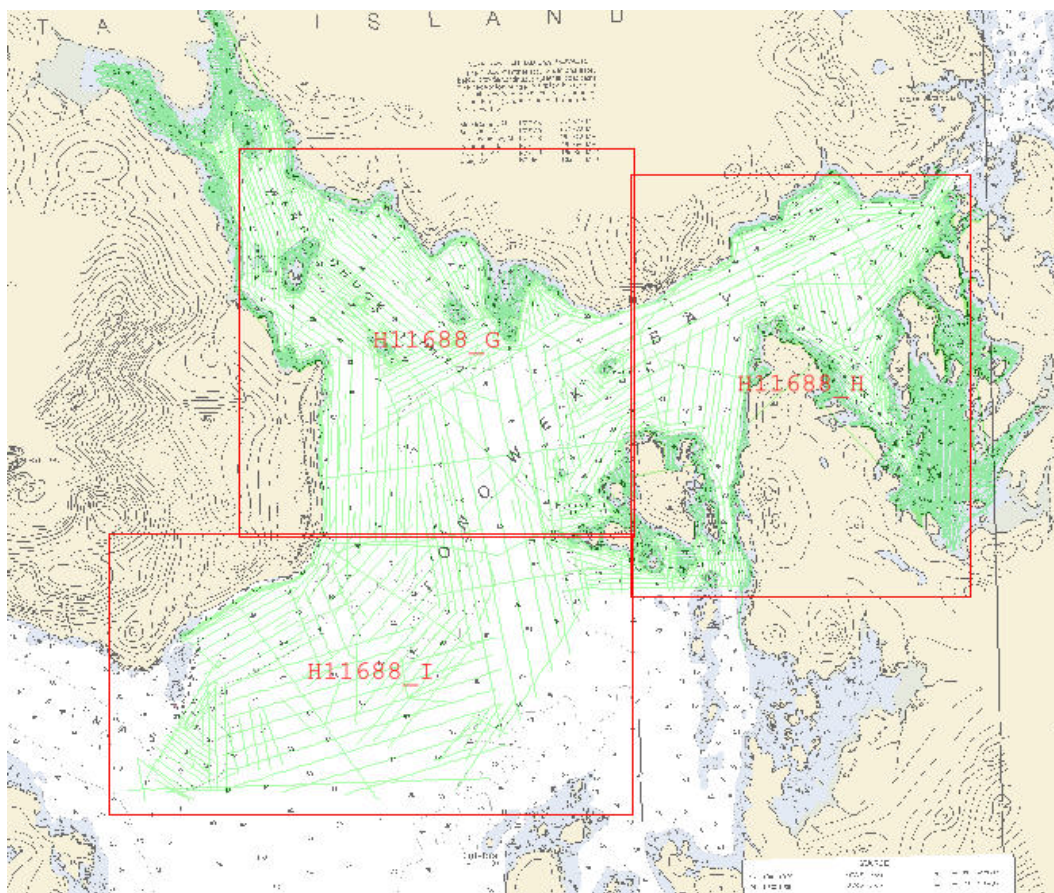


Figure 13: Field sheets for 2m and 5m surfaces



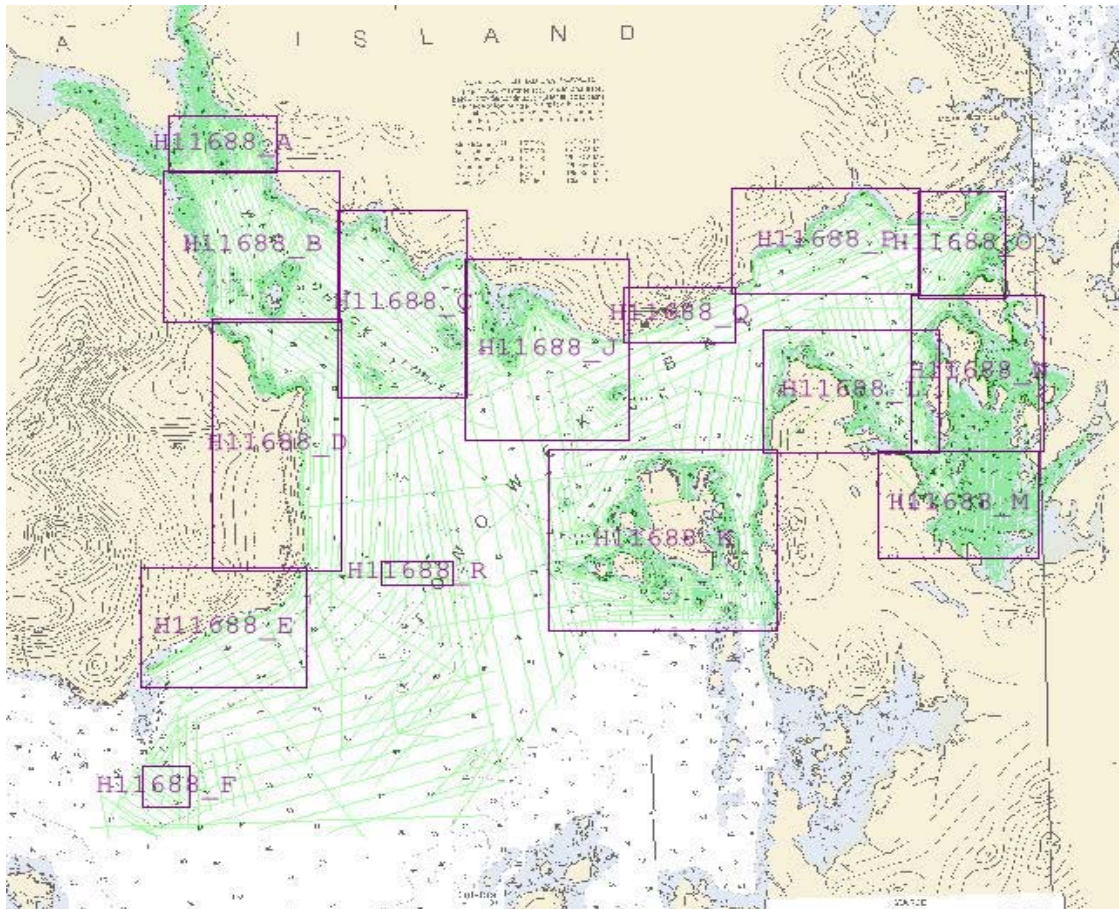


Figure 14: Field sheets for 05m and 1m surfaces

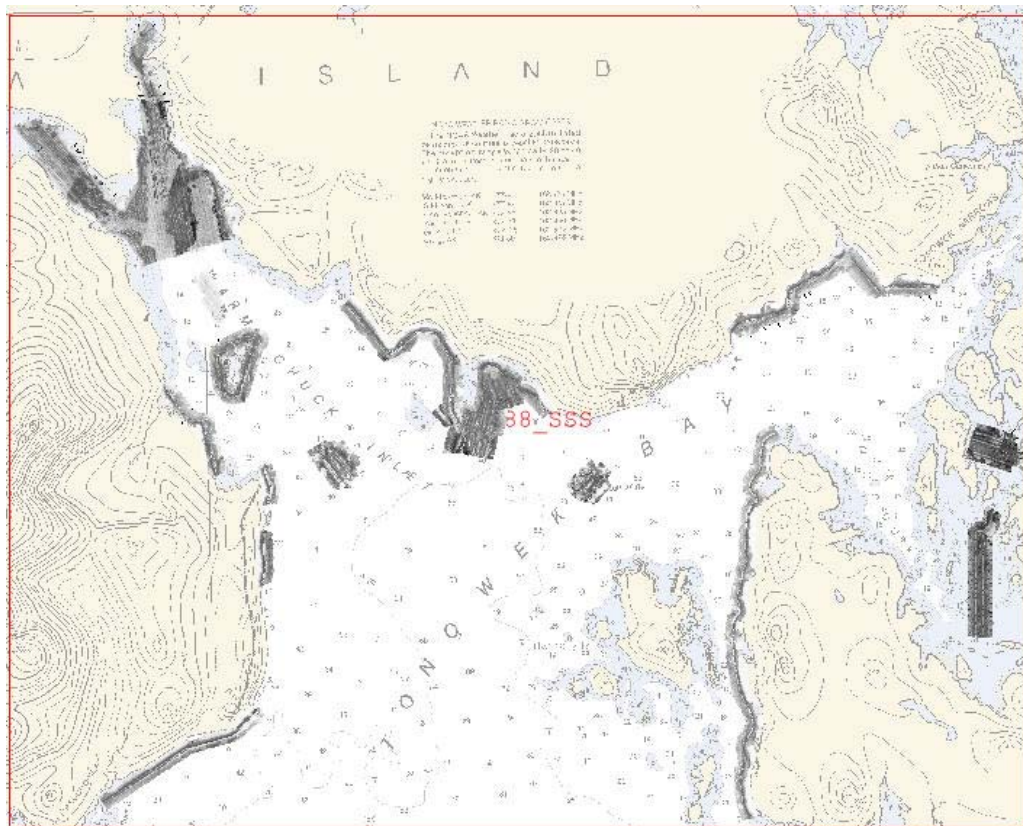


Figure 15: Side Scan Sonar field sheet and mosaic overlaid on chart 17404

### C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11688 can be found in the *OPR-O190-RA-07 Horizontal and Vertical Control Report*,<sup>16</sup> submitted under separate cover. A summary of horizontal and vertical control for this survey follows.

#### Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The differential corrector beacons utilized for this survey are given in Table 4. Changes in the corrector source were noted in the data acquisition logs.

Location	Frequency	Operator	Distance	Priority
Level Island	295 kHz	USCG	46 nm	Primary
Biorka Island	305 kHz	USCG	97 nm	Backup

Table 4: Differential Corrector Sources for H11688.

#### Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Sitka, AK (945-1600) served as control for datum determination and as the primary source for water level reducers for survey H11688.

RAINIER personnel installed Sutron 8210 “bubbler” tide gauge at the following subordinate station in accordance with the Letter Instructions. This station is described in detail in the *OPR-O190-RA-07 Horizontal and Vertical Control Report*.

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Nossuk Bay	945-0711	30-day	May 5, 2007	July 28, 2007

Table 5: Tide Stations installed by RAINIER personnel for H11688

All data were reduced to MLLW using **final approved water levels** from station Nossuk Bay, AK (945-0711) using the tide file 9450711.tid and **final** time and height correctors using the zone corrector file H11688.zdf.<sup>17</sup>

The request for Final Approved Water Levels for H11688 was submitted to CO-OPS on September 6, 2007 and the Final Tide Note was received on October 10, 2007. This documentation is included in Appendix IV.<sup>18</sup>



**D. RESULTS AND RECOMMENDATIONS****D.1. Chart Comparison****D.1.a. Survey Agreement with Chart**

Survey H11688 was compared with the following charts:

Chart	Scale	Edition and Date	Local Notice to Mariners Applied Through
17404	1:40,000	13 <sup>th</sup> Ed, May 2006	07/28/2007

*Table 6: Charts compared with H11688*

The majority of the survey area agreed well with charted depths, with differences ranging between 0.5 and 2 fathoms.<sup>19</sup> In many instances, this survey found shoaler soundings than charted depths even though agreement at the majority of charted depths was good. This can be attributed to increased bottom coverage using SWMB methods. Throughout the survey area there were a number of soundings that were up to 10 fathoms difference from charted depths. Near Tonowek Narrows (55°45'10.93" N 133°21'11.99" W) a 21 fathom charted depth has a survey sounding of 29 fathoms. In the vicinity of Harmony Island many new features and shoal depths were discovered between charted depths in addition to a number of survey soundings that were up to 7 to 10 fathoms shoaler than charted depths.<sup>20</sup>

One area of particular interest reveals a ledge that extends from the West side of Harmony Island and extends to Kabanof Rock, which appears to be the endpoint of the ledge (see figure 16). It runs parallel with the 50 fathom contour and has a number of features that are not currently charted. Two significant features have been identified in this area. A high point of the ledge at mid-channel of Tonowek Bay is approximately 8 fathoms, 5 ft; additionally, a 2 fathom 5 ft outcropping exists on the west side of Harmony Island. Both features have been submitted as DTONs.<sup>21</sup>

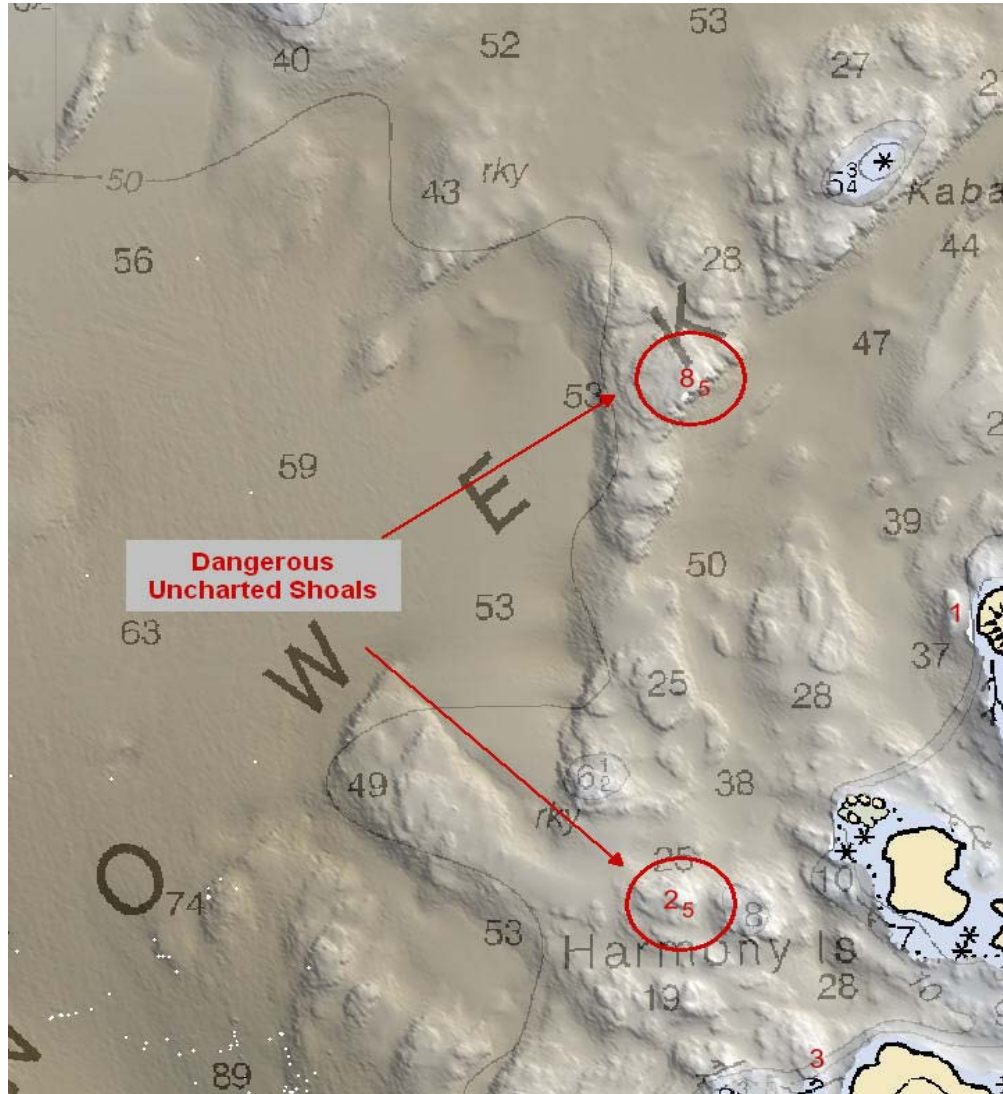


Figure 16: 5m CUBE surface and designated soundings overlaid on Chart 17404. Soundings are in Fathoms.

Another area of interest is in Nossuk Bay. The area of the bay to the southwest of Nossuk anchorage has a number of dangerous uncharted features between charted depths (see figure 17), some of which have been submitted as DTONs. This is of particular interest as it is necessary to cross these uncharted features to use the southern entrance to Nossuk Anchorage. The north entrance to Nossuk Anchorage is also problematic since H11688 also discovered a mid-channel 2 ¼ fm sounding that was submitted as a DTON. The coast pilot has been updated to give mariners additional information about both routes into the designated anchorage area. The hydrographer recommends that current survey data be used to update charted depths and adjust contours to more accurately represent the south channel leading into the anchorage.<sup>22</sup>

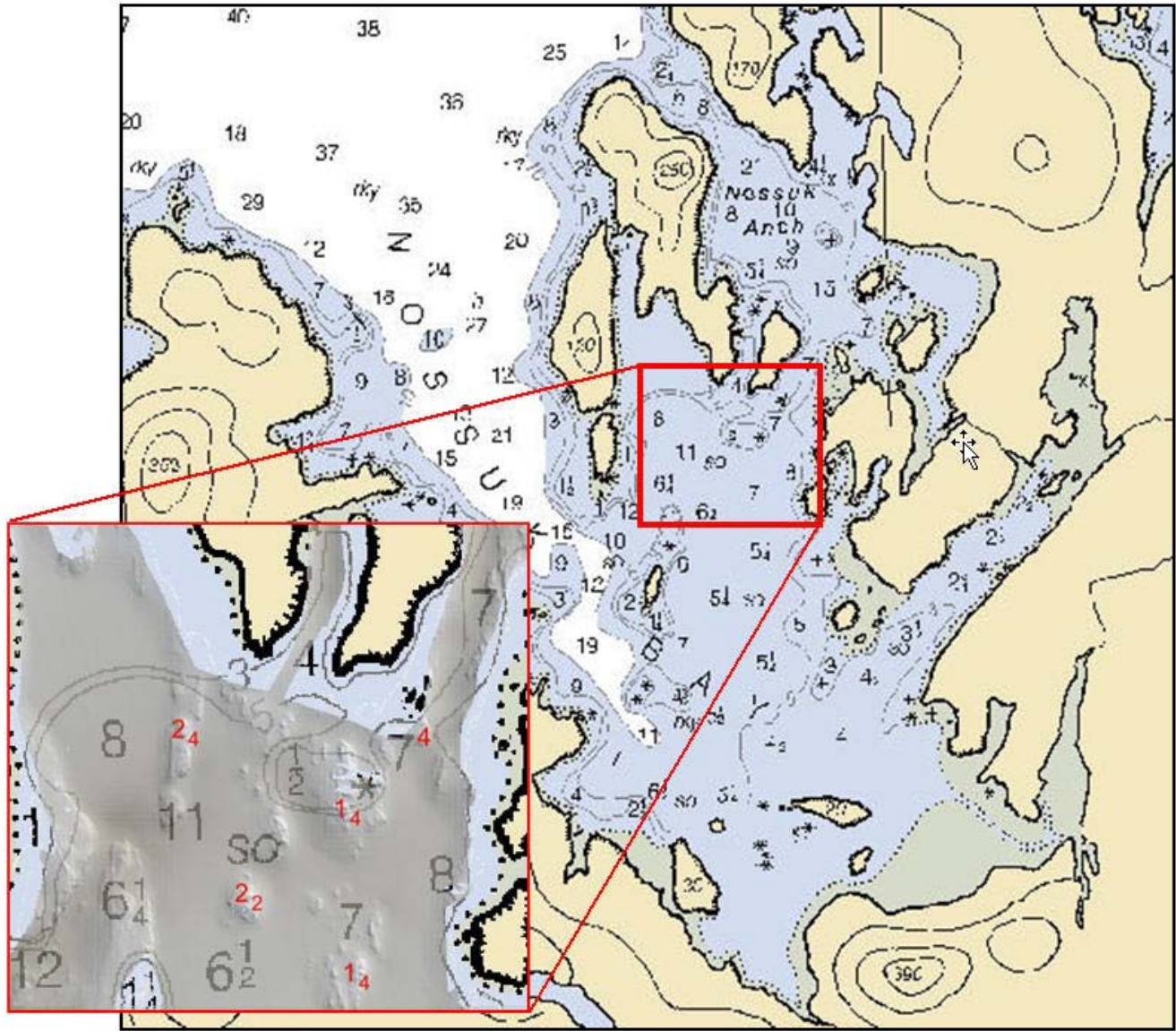


Figure 17: Inset of uncharted Nossuk Bay shoals overlaid on Chart 17404. Soundings are in fathoms.

There is a discrepancy between the current raster chart 17404 and the ENC US5AK4AM.000 provided for survey H11688. When comparing shoreline verification to the raster chart it was noticed that the acquired shoreline buffer line ran directly through three charted (17404) islets off the Northwest corner of Harmony Island (see figure 18). These were not included in the original compsource file or the provided ENC for survey H11688. No notes were recorded during shoreline acquisition mentioning any additional islets in the area.



The hydrographer recommends that the raster chart be updated to reflect the current ENC and appropriate submitted shoreline files.<sup>23</sup>

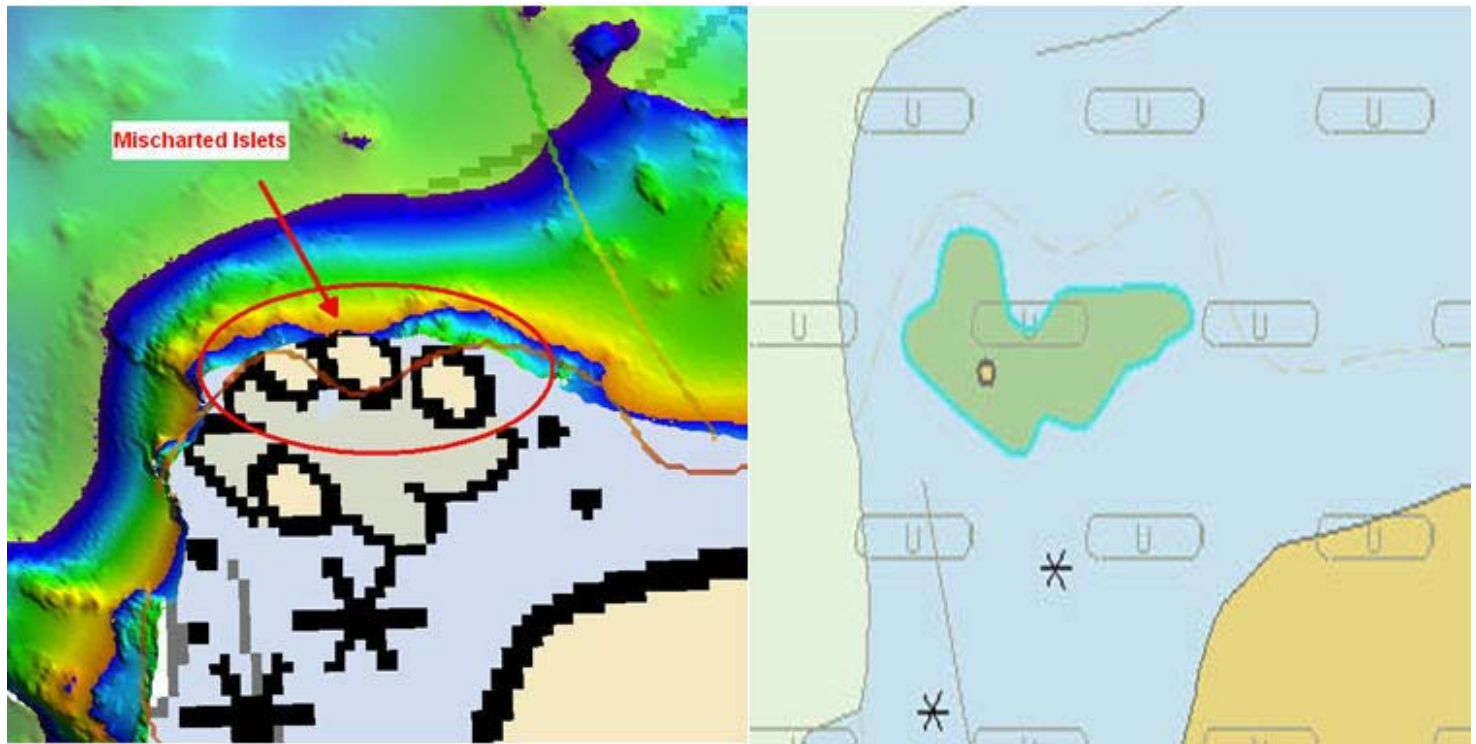


Figure 18: Raster chart 17404 and ENC US5AK4AM.000 showing difference in charted islets.

Lastly, there appears to be an offset within chart 17404. Although offsets appear throughout the survey area, they are most noticeable in the island areas near Nossuk Bay. It appears as though the chart may be shifted approximately 40 to 50 meters in the North East direction (see figure 19).<sup>24</sup>

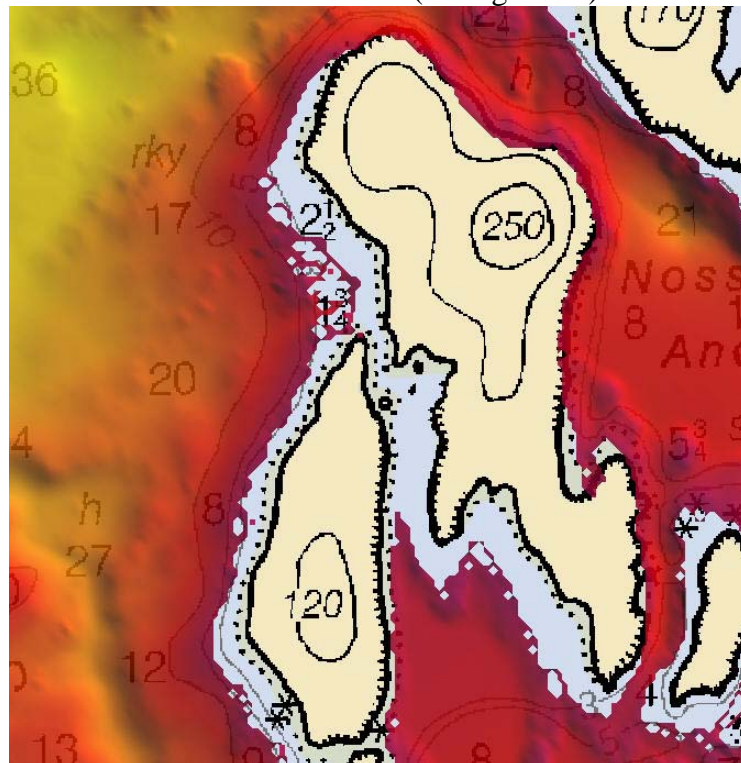


Figure 19: Combined surface overlaid on chart 17404, chart appears to be slightly offset in the NE direction

The Hydrographer recommends that survey soundings supersede all prior survey and charted depths in the common area.<sup>25</sup>

### **D.1.b. Dangers to Navigation**

Nine (9) Dangers to Navigation (DTONs) were found on survey H11688, and reported to the Marine Chart Division via email. Two were initially reported on May 30, 2007 while the remaining seven were found later in post processing and submitted via email on March 22, 2008. The original DTON submission packages are included in Appendix IV. Descriptions of each DTON are included in the Survey Feature Report<sup>26</sup> as well in Appendix I.

### **D.1.c. Other Features**

#### Automated Wreck and Obstruction Information System (AWOIS) Investigations

No AWOIS items fall the within the survey limits of H11688.<sup>27</sup>

#### Additional Items

Additional features investigated within the limits of H11688 are described in the Survey Feature Report in Appendix II.

## **D.2. Additional Results**

### **D.2.a. Prior Survey Comparison**

Prior survey comparison was not performed.

### **D.2.b. Shoreline Verification**

#### Shoreline Source

The composite source (US4COMPS) was printed on paper “boat sheets” and displayed in Hypack for field verification. There are no additional shoreline sources such as LIDAR or FAIRWEATHER data for sheet H11688.

#### Shoreline Verification

Limited shoreline verification was conducted near predicted low water in accordance with the Specifications and Deliverables and FPM sections 6.1 and 6.2. Detached positions (DPs) acquired during shoreline verification were recorded in HYPACK, on DP forms, and processed in Pydro. These indicate revisions to features and features not found on the verified shoreline. In addition, annotations describing shoreline were recorded on hard copy plots of digital shoreline. DP forms are included in the *Separates to be Included with Survey Data*.

All shoreline data is submitted in Caris Notebook .hob files. The session H11688\_NTBK contains the following:

<b>HOB File</b>	<b>Purpose and Contents</b>
H11688_Comp_Source.hob	Original Source Data as filtered from ENC cell US5AK4AM.000
H11688_Reference.hob	Survey outline and limit lines.
H11688_Field_Verified.hob	Field verified source features and shoreline, including edits and updates not requiring DPs.
H11688_Pydro_Updates.hob	New or modified items processed through Pydro.
H11688_Pydro_Disprovals.hob	Items disproved and processed through Pydro.
H11688_Delete.hob	Items removed from the Field_Verified HOB file that should be removed from the chart.

Table 7: List and Description of Notebook HOB files.

The combination of *Field\_Verified* and *Pydro\_Updates* layers depict the shoreline as surveyed. The *Pydro\_Disprovals* and *Delete* layers contain all disproved features that should be removed from the chart. The *Comp\_Source* file was not altered other than to remove extraneous features not included within the survey limits of sheet H11688. The *Reference* layer contains only the survey outline and limit lines.<sup>28</sup>

### Source Shoreline Changes and New Features

Items for survey H11688 that require further discussion and are associated with a detached position, have been flagged “Report” in Pydro in H11688.pss. Investigation methods and recommendations are listed in the Remarks and Recommendation tabs. These features are included in the Survey Feature Report in Appendix I. Two noteworthy features are further discussed below.

On the southeast coast of Heceta Island, east of Warm Chuck Inlet, there is a pair of white cliffs that are navigationally significant. The cliffs are approximately 1.2 nautical miles northwest of Nossuk Bay, located at 55 44.72 N, 133 24.15 W and 55 44.77 N, 133 23.84 W. These cliffs have DP numbers of 1101\_127\_49 and 1101\_127\_39 respectively. Both cliffs have bases at mean high water and rise approximately 20 m. In particular when transiting into Tonowek Bay from the south or southwest the western cliff is visible from a distance and can take the appearance of a large white ship on the water. The hydrographer recommends charting these as conspicuous white cliffs.<sup>29</sup>

### Recommendations

The Hydrographer recommends that the shoreline as depicted in the Notebook .HOB files supersede and complement shoreline information compiled on the CFF and charts as described above.<sup>30</sup>

### **D.2.c. Aids to Navigation**

Survey H11688 included one aid to navigation (ATON), Tonowek Narrows Daybeacon (Light List # 24680). The ATON’s position was visually verified in the field against the digital raster chart and was found to be correctly charted and serving its intended purpose.<sup>31</sup>

**D.2.d. Overhead Features**

There are no overhead features within the limits of survey H11688.<sup>32</sup>

**D.2.e. Submarine Cables and Pipelines**

There are no submarine cables or pipelines charted within the limits of H11688, and none were detected by the survey.<sup>33</sup>

**D.2.f. Ferry Routes**

There are no ferry routes charted within the limits of survey H11688, and none were observed to be operating in the area.<sup>34</sup>

**D.2.g. Bottom Samples**

Twenty-four bottom samples were collected in water less than 100 meters deep and no more than 2000 meters away from another bottom sample. In potential anchorage areas bottom sample spacing did not exceed 1200 meters. Of these samples 6 agreed with charted bottom type, but could be modified to more accurately describe the bottom type. 14 bottom samples disagreed with the charted bottom type, and 4 samples were collected at positions without a charted bottom type. Refer to the Survey Feature Report in Appendix II for details and recommendations for each bottom sample.<sup>35</sup>

**D.2.h. Other Findings**


There were no other findings within the survey limits of H11688.

As Chief of Party, Field operations for hydrographic survey H11688 were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports. The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual (April 2007 edition), Field Procedures Manual (March 2007 edition), Standing and Letter Instructions, and all HSD Technical Directives issued through July 2007. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required. All data and reports are respectfully submitted to N/CS34, Pacific Hydrographic Branch.

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Data Acquisition and Processing Report for OPR-0190-RA-07	4/1/08	N/CS34


Approved and Forwarded:

  
Digitally signed by Guy T. Noll, CN=NOAA, OU=Commanding Officer, C=US, email=guy.noll@noaa.gov, DN=cn=Guy T. Noll, ou=NOAA Ship RAINIER, email=guy.noll@noaa.gov, o=NOAA, ou=NOAA Ship RAINIER, email=guy.noll@noaa.gov  
Date: 2008.03.27 16:16:08 -0700

Guy T. Noll  
Commander, NOAA  
Commanding Officer


In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

Survey Sheet Manager:

  
Amy Riley  
I am the author of this document  
2008.03.27 17:07:14 Z


Amy Riley  
Survey Technician, NOAA Ship RAINIER

Chief Survey Technician:

  
James B. Jacobson  
I have reviewed this document  
2008.03.27 20:33:16 Z

James B. Jacobson  
Chief Survey Technician, NOAA Ship RAINIER

Field Operations Officer:

  
Charles Yoos  
I have reviewed this document  
2008.03.27 15:35:21 -0700

Charles J. Yoos  
Lieutenant, NOAA



---

<sup>1</sup> Filed with project records.

<sup>2</sup> Concur

<sup>3</sup> Concur

<sup>4</sup> Concur

<sup>5</sup> Concur

<sup>6</sup> Concur

<sup>7</sup> After reviewing all VBES lines from Launch 1101 (RA-1) on DN 179 in subset mode the reviewer closed the lines showing vertical offsets outside specifications and recomputed the surfaces without this data.

<sup>8</sup> Concur

<sup>9</sup> Concur

<sup>10</sup> Concur with clarification. Reviewer found errors to be within vertical specifications for all depths where the error was observed and well within horizontal positioning error limits (at the 95 percent confidence level, will not exceed 5 meters + 5 percent of the depth).

<sup>11</sup> Concur

<sup>12</sup> Retain all charted kelp symbols and areas and note two new kelp areas in HCell.

<sup>13</sup> Concur. Charted in HCell as dangerous submerged rock of unknown depth.

<sup>14</sup> Concur

<sup>15</sup> Concur.

<sup>16</sup> Filed with Project records.

<sup>17</sup> Concur

<sup>18</sup> See Tide Note attached to this report.

<sup>19</sup> Concur

<sup>20</sup> Concur with clarification. In the area of the 29 fathom surveyed sounding over the charted 21 fathom sounding, the compiler chose shoaler soundings nearby (15 and 20 fathoms) to best represent the area.

<sup>21</sup> Concur. Both DTONs have been charted.

<sup>22</sup> Concur

<sup>23</sup> Concur

<sup>24</sup> Concur.

<sup>25</sup> Concur

<sup>26</sup> See attached Feature Report.

<sup>27</sup> Concur

<sup>28</sup> RAINIER resubmitted shoreline files after making requested corrections to H11688\_Field\_Verified (see note 12) in the new 2008 deliverable structure. The following shoreline files were resubmitted and were used for compilation:

H11688\_Comp\_Source.hob: Original Source Data

H11688\_Reference.hob: Survey outline and limit lines.

H11688\_Field\_Verified.hob: Field verified source features and shoreline, including edits and updates, new features, and unmodified features.

H11688\_Delete.hob: Items removed from the Field\_Verified HOB file that should be removed from the chart.

<sup>29</sup> Concur. Chart as landmarks.

<sup>30</sup> Concur

<sup>31</sup> Concur

<sup>32</sup> Concur

<sup>33</sup> Concur

<sup>34</sup> Concur

<sup>35</sup> Charted bottom samples were imported and deconflicted with survey bottom samples. Charted bottom samples were retained if no survey bottom sample superseded it and it did not conflict with a new rocky seabed area.

# H11688 DTON Report

**Registry Number:** H11688  
**State:** Alaska  
**Locality:** West of Prince of Wales Island  
**Sub-locality:** Tonowek Bay  
**Project Number:** OPR-O190-RA-07  
**Survey Dates:** May 6, 2007 - July 25, 2007

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
17404	13th	05/01/2006	1:40,000 (17404_1)	[L]NTM: ?
17400	16th	06/02/2001	1:229,376 (17400_1)	[L]NTM: ?
16016	20th	11/01/2003	1:969,756 (16016_1)	[L]NTM: ?
531	23rd	01/01/2006	1:2,100,000 (531_1)	[L]NTM: ?
500	8th	06/01/2003	1:3,500,000 (500_1)	[L]NTM: ?
530	31st	06/01/2005	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

\* Correction(s) - source: last correction applied (last correction reviewed--"cleared date")

## Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Shoal	4.06 m	55° 44' 32.7" N	133° 20' 55.2" W	---
1.2	Shoal	4.73 m	55° 44' 50.2" N	133° 30' 03.7" W	---
1.3	Shoal	2.04 m	55° 43' 20.5" N	133° 25' 09.2" W	---
1.4	Shoal	4.21 m	55° 43' 34.7" N	133° 20' 44.2" W	---
1.5	Shoal	3.00 m	55° 43' 30.0" N	133° 20' 33.5" W	---
1.6	Shoal	6.00 m	55° 42' 59.5" N	133° 21' 07.2" W	---
1.7	Shoal	16.27 m	55° 43' 40.7" N	133° 25' 44.7" W	---
1.8	Shoal	3.55 m	55° 43' 02.8" N	133° 20' 49.5" W	---
1.9	Shoal	5.25 m	55° 42' 56.0" N	133° 25' 48.7" W	---

## **1 - Danger To Navigation**

## 1.1) Profile/Beam - 981/101 from h11688 / 1006\_reson8101\_hvf / 2007-126 / 772\_2150

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 55° 44' 32.7" N, 133° 20' 55.2" W  
**Least Depth:** 4.06 m (= 13.32 ft = 2.219 fm = 2 fm 1.32 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.968$  m ; TVU (TPEv)  $\pm 0.175$  m  
**Timestamp:** 2007-126.21:52:05.259 (05/06/2007)  
**Survey Line:** h11688 / 1006\_reson8101\_hvf / 2007-126 / 772\_2150  
**Profile/Beam:** 981/101  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

MBES least depth on high point of submerged outcropping. Sounding has been corrected with final tides and final zoning. Outcropping is shoaler and extends further into Nossuk Anchorage entrance channel than currently charted.

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1006_reson8101_hvf/2007-126/772_2150	981/101	0.00	000.0	Primary

#### Hydrographer Recommendations

chart shoal sounding.

#### Cartographically-Rounded Depth (Affected Charts):

2 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

2fm 1ft (531\_1)

4.1m (500\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725

SORIND - US, US, graph, H11688

TECSOU - 3:found by multi-beam

## Office Notes

Chart updated.

### Feature Images

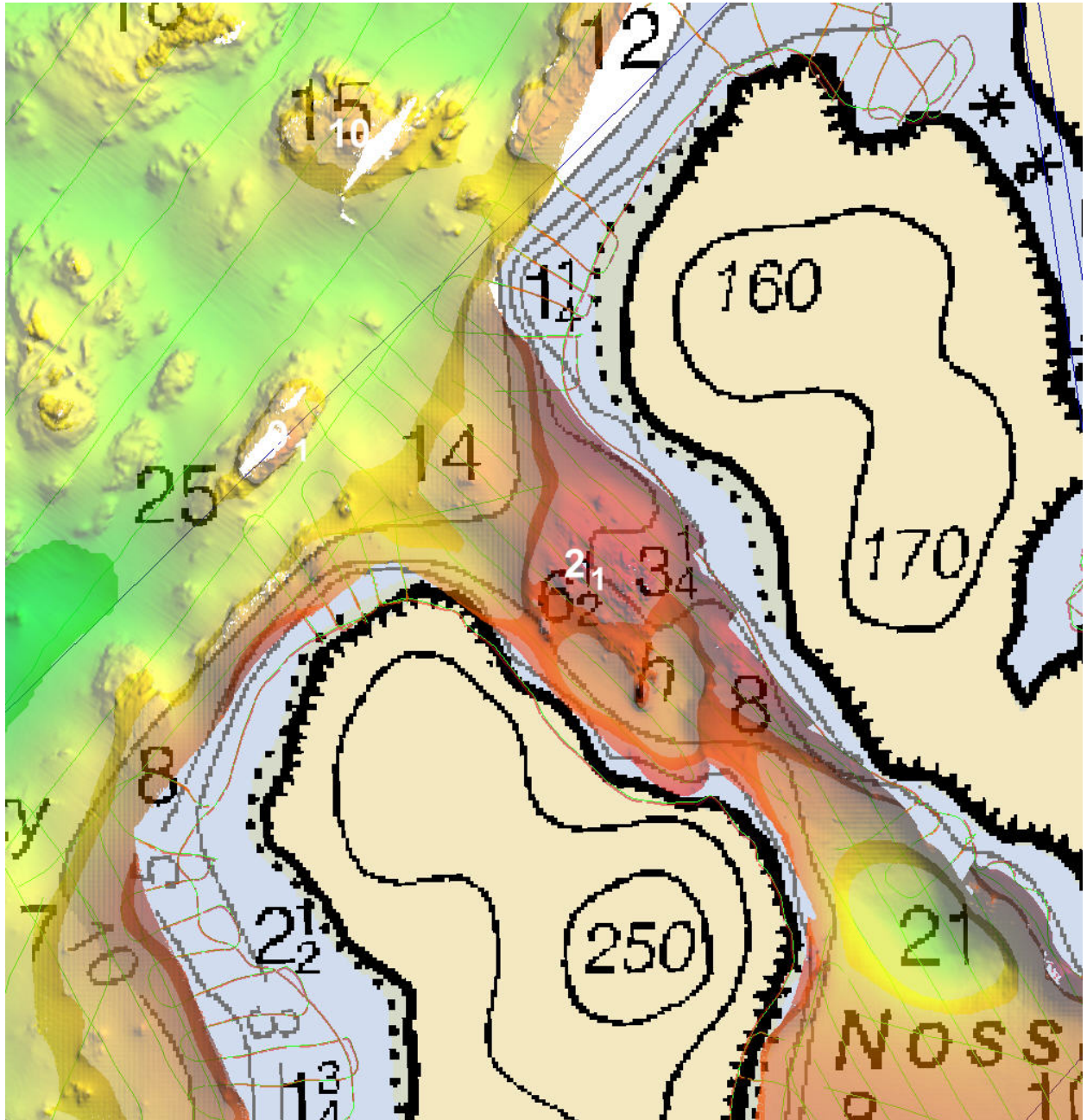


Figure 1.1.1

**1.2) Profile/Beam - 370/44 from h11688 / 1016\_reson8125\_hvf / 2007-127 / 432\_2202**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 55° 44' 50.2" N, 133° 30' 03.7" W  
**Least Depth:** 4.73 m (= 15.53 ft = 2.589 fm = 2 fm 3.53 ft)  
**TPU (±1.96σ):** **THU (TPEh)** ±1.963 m ; **TVU (TPEv)** ±0.247 m  
**Timestamp:** 2007-127.22:03:40.545 (05/07/2007)  
**Survey Line:** h11688 / 1016\_reson8125\_hvf / 2007-127 / 432\_2202  
**Profile/Beam:** 370/44  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**

MBES least depth on high point of submerged outcropping. Sounding has been corrected with final tides and final zoning.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11688/1016_reson8125_hvf/2007-127/432_2202	370/44	0.00	000.0	Primary

**Hydrographer Recommendations**

chart shoal sounding.

**Cartographically-Rounded Depth (Affected Charts):**

2 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 2fm 3ft (531\_1)  
 4.7m (500\_1, 50\_1)

**S-57 Data**

[None]

## Office Notes

HCell updated with shoal sounding on feature.



### Feature Images

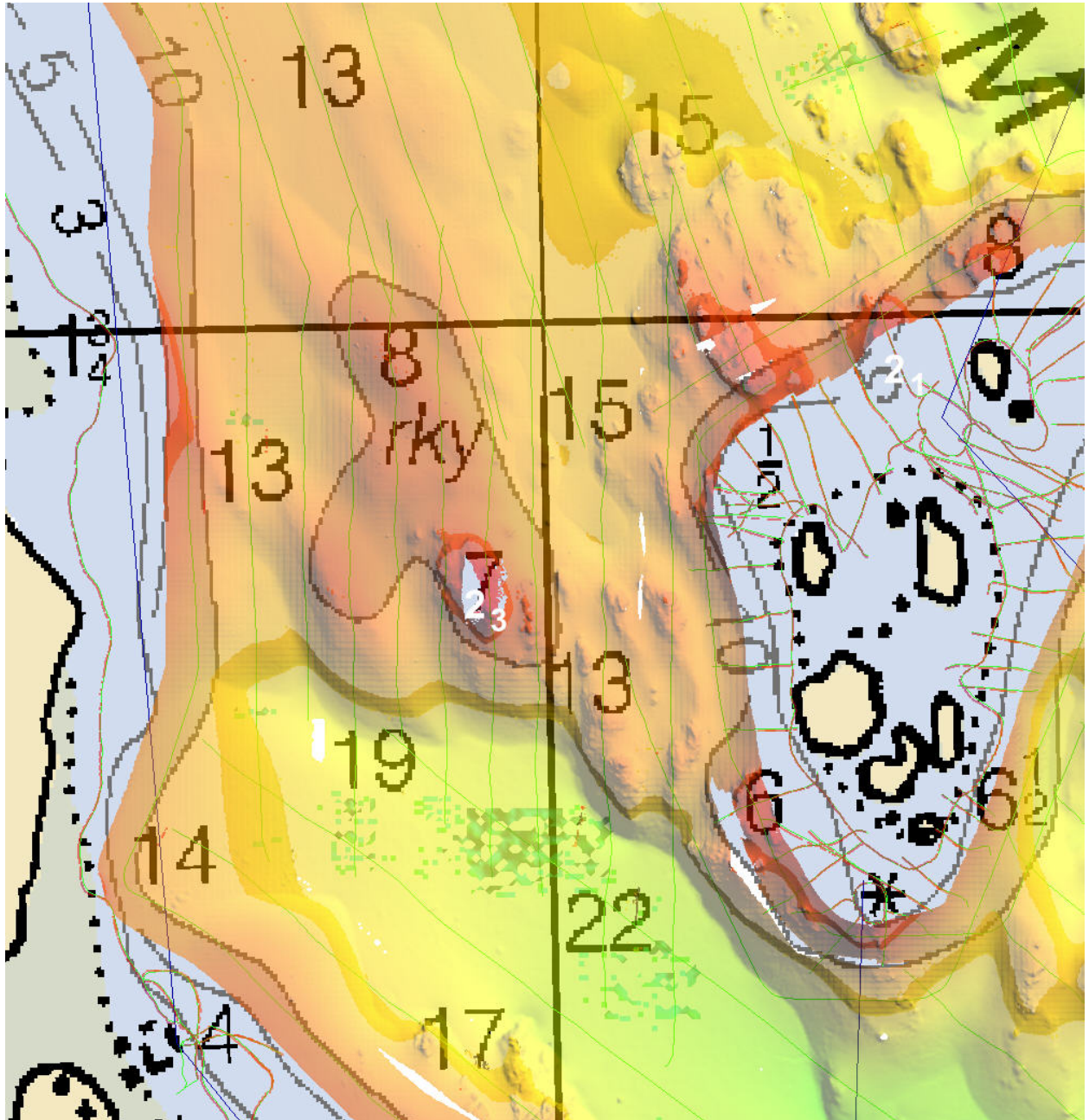


Figure 1.2.1

### 1.3) Profile/Beam - 79/11 from h11688 / 1016\_reson8125\_hvf / 2007-165 / 427\_2222

## DANGER TO NAVIGATION

### Survey Summary

**Survey Position:** 55° 43' 20.5" N, 133° 25' 09.2" W  
**Least Depth:** 2.04 m (= 6.69 ft = 1.114 fm = 1 fm 0.69 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.963$  m ; **TVU (TPEv)**  $\pm 0.247$  m  
**Timestamp:** 2007-165.22:22:26.370 (06/14/2007)  
**Survey Line:** h11688 / 1016\_reson8125\_hvf / 2007-165 / 427\_2222  
**Profile/Beam:** 79/11  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Least depth on high point of ledge extending from Northwestern tip of Harmony Island.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1016_reson8125_hvf/2007-165/427_2222	79/11	0.00	000.0	Primary

### Hydrographer Recommendations

Update contours and chart least depth

#### Cartographically-Rounded Depth (Affected Charts):

1fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

1fm 0ft (531\_1)

2.0m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

TECSOU - 3:found by multi-beam

## Office Notes

Chart updated

**1.4) Profile/Beam - 5825/83 from h11688 / 1016\_reson8125\_hvf / 2007-177 / 403\_2334**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 55° 43' 34.7" N, 133° 20' 44.2" W  
**Least Depth:** 4.21 m (= 13.81 ft = 2.302 fm = 2 fm 1.81 ft)  
**TPU (±1.96σ):** **THU (TPEh)** ±1.962 m ; **TVU (TPEv)** ±0.246 m  
**Timestamp:** 2007-177.23:41:03.005 (06/26/2007)  
**Survey Line:** h11688 / 1016\_reson8125\_hvf / 2007-177 / 403\_2334  
**Profile/Beam:** 5825/83  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**

least depth on submerged outcropping

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11688/1016_reson8125_hvf/2007-177/403_2334	5825/83	0.00	000.0	Primary

**Hydrographer Recommendations**

update chart with least depth

**Cartographically-Rounded Depth (Affected Charts):**

2 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 2fm 2ft (531\_1)  
 4.2m (500\_1, 50\_1)

**S-57 Data**

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US, US, Graph, H11688



TECSOU - 3:found by multi-beam

## Office Notes

Chart updated.

**1.5) Profile/Beam - 495/218 from h11688 / 1016\_reson8125\_hvf / 2007-177 / 576\_1924**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 55° 43' 30.0" N, 133° 20' 33.5" W  
**Least Depth:** 3.00 m (= 9.84 ft = 1.640 fm = 1 fm 3.84 ft)  
**TPU (±1.96σ):** **THU (TPEh)** ±1.962 m ; **TVU (TPEv)** ±0.247 m  
**Timestamp:** 2007-177.19:25:14.617 (06/26/2007)  
**Survey Line:** h11688 / 1016\_reson8125\_hvf / 2007-177 / 576\_1924  
**Profile/Beam:** 495/218  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**

High point of submerged outcropping

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11688/1016_reson8125_hvf/2007-177/576_1924	495/218	0.00	000.0	Primary

**Hydrographer Recommendations**

Update chart with least depth

**Cartographically-Rounded Depth (Affected Charts):**

- 1 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)
- 1fm 4ft (531\_1)
- 3.0m (500\_1, 50\_1)

**S-57 Data**

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

TECSOU - 3:found by multi-beam

## Office Notes

Chart updated.

## 1.6) Profile/Beam - 1150/32 from h11688 / 1016\_reson8125\_hvf / 2007-178 / 510\_1806

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 55° 42' 59.5" N, 133° 21' 07.2" W  
**Least Depth:** 6.00 m (= 19.69 ft = 3.282 fm = 3 fm 1.69 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.963$  m ; **TVU (TPEv)**  $\pm 0.247$  m  
**Timestamp:** 2007-178.18:08:22.139 (06/27/2007)  
**Survey Line:** h11688 / 1016\_reson8125\_hvf / 2007-178 / 510\_1806  
**Profile/Beam:** 1150/32  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

High point on submerged outcropping

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1016_reson8125_hvf/2007-178/510_1806	1150/32	0.00	000.0	Primary

#### Hydrographer Recommendations

Update chart with least depth

#### Cartographically-Rounded Depth (Affected Charts):

3 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

3fm 1ft (531\_1)

6.0m (500\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US, US, Graph, H11688



TECSOU - 3:found by multi-beam

## Office Notes

Chart updated.

## 1.7) Profile/Beam - 59/55 from h11688 / 1016\_reson8125\_hvf / 2007-180 / 261\_2339

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 55° 43' 40.7" N, 133° 25' 44.7" W  
**Least Depth:** 16.27 m (= 53.40 ft = 8.899 fm = 8 fm 5.40 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.965$  m ; **TVU (TPEv)**  $\pm 0.249$  m  
**Timestamp:** 2007-180.23:40:16.687 (06/29/2007)  
**Survey Line:** h11688 / 1016\_reson8125\_hvf / 2007-180 / 261\_2339  
**Profile/Beam:** 59/55  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Least depth on submerged outcropping

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1016_reson8125_hvf/2007-180/261_2339	59/55	0.00	000.0	Primary

#### Hydrographer Recommendations

Update chart with least depth

#### Cartographically-Rounded Depth (Affected Charts):

8  $\frac{3}{4}$ fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

8fm 5ft (531\_1)

16.3m (500\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

TECSOU - 3:found by multi-beam

## Office Notes

Chart updated.

**1.8) Profile/Beam - 279/185 from h11688 / 1016\_reson8125\_hvf / 2007-206 / 396\_1721**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 55° 43' 02.8" N, 133° 20' 49.5" W  
**Least Depth:** 3.55 m (= 11.65 ft = 1.942 fm = 1 fm 5.65 ft)  
**TPU (±1.96σ):** **THU (TPEh)** ±1.962 m ; **TVU (TPEv)** ±0.246 m  
**Timestamp:** 2007-206.17:22:19.601 (07/25/2007)  
**Survey Line:** h11688 / 1016\_reson8125\_hvf / 2007-206 / 396\_1721  
**Profile/Beam:** 279/185  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**

Least depth on submerged outcropping

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11688/1016_reson8125_hvf/2007-206/396_1721	279/185	0.00	000.0	Primary

**Hydrographer Recommendations**

Update chart with least depth

**Cartographically-Rounded Depth (Affected Charts):**

2fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 1fm 5ft (531\_1)  
 3.6m (500\_1, 50\_1)

**S-57 Data**

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US, US, Graph, H11688



TECSOU - 3:found by multi-beam

## Office Notes

Chart updated.

**1.9) Profile/Beam - 71/10 from h11688 / 1021\_reson8101\_hvf / 2007-206 / 465\_1718**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 55° 42' 56.0" N, 133° 25' 48.7" W  
**Least Depth:** 5.25 m (= 17.21 ft = 2.869 fm = 2 fm 5.21 ft)  
**TPU (±1.96σ):** **THU (TPEh)** ±1.377 m ; **TVU (TPEv)** ±0.267 m  
**Timestamp:** 2007-206.17:18:13.123 (07/25/2007)  
**Survey Line:** h11688 / 1021\_reson8101\_hvf / 2007-206 / 465\_1718  
**Profile/Beam:** 71/10  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**

Designated sounding on least depth of submerged outcropping

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11688/1021_reson8101_hvf/2007-206/465_1718	71/10	0.00	000.0	Primary

**Hydrographer Recommendations**

Update chart with least depth

**Cartographically-Rounded Depth (Affected Charts):**

2 ¾fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 2fm 5ft (531\_1)  
 5.2m (500\_1, 50\_1)

**S-57 Data**

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

TECSOU - 3:found by multi-beam

## Office Notes

Chart updated.

# H11688\_Features

**Registry Number:** H11688  
**State:** Alaska  
**Locality:** West of Prince of Wales Island  
**Sub-locality:** Tonowek Bay  
**Project Number:** OPR-O190-RA-07  
**Survey Dates:** 05/06/2007 - 07/25/2007

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
17403	14th	02/01/2006	1:40,000 (17403_1)	[L]NTM: ?
17404	13th	05/01/2006	1:40,000 (17404_1)	[L]NTM: ?
17360	34th	03/01/2006	1:217,828 (17360_1)	[L]NTM: ?
17400	16th	06/02/2001	1:229,376 (17400_1)	[L]NTM: ?
16016	20th	11/01/2003	1:969,756 (16016_1)	[L]NTM: ?
531	23rd	01/01/2006	1:2,100,000 (531_1)	[L]NTM: ?
500	8th	06/01/2003	1:3,500,000 (500_1)	[L]NTM: ?
530	31st	06/01/2005	1:4,860,700 (530_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

\* Correction(s) - source: last correction applied (last correction reviewed--"cleared date")

## Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Shoal	2.33 m	55° 44' 35.1" N	133° 30' 23.6" W	---
1.2	Rock	-0.55 m	55° 43' 35.0" N	133° 19' 22.7" W	---
1.3	Shoal	-1.18 m	55° 42' 44.9" N	133° 20' 25.0" W	---
1.4	Shoal	-2.68 m	55° 42' 42.2" N	133° 20' 33.6" W	---
1.5	Rock	-1.50 m	55° 43' 59.8" N	133° 20' 32.2" W	---
1.6	Rock	-2.78 m	55° 43' 58.4" N	133° 25' 19.7" W	---
1.7	Rock	-0.67 m	55° 44' 33.2" N	133° 26' 57.4" W	---
1.8	Rock	-3.98 m	55° 44' 25.6" N	133° 26' 53.4" W	---
1.9	Shoal	-4.66 m	55° 44' 23.4" N	133° 27' 20.9" W	---

1.10	Shoal	-4.63 m	55° 44' 26.2" N	133° 27' 23.7" W	---
1.11	Shoal	-9.94 m	55° 45' 17.5" N	133° 28' 20.7" W	---
1.12	Rock	-1.97 m	55° 45' 27.2" N	133° 29' 11.3" W	---
1.13	Shoal	-3.80 m	55° 42' 34.9" N	133° 25' 48.2" W	---
1.14	Shoal	-0.79 m	55° 43' 59.1" N	133° 25' 19.5" W	---
1.15	Shoal	-1.27 m	55° 43' 57.9" N	133° 25' 21.0" W	---
1.16	Shoal	-0.79 m	55° 44' 26.8" N	133° 26' 52.4" W	---
1.17	Shoal	-0.48 m	55° 44' 25.0" N	133° 26' 53.0" W	---
1.18	Shoal	-0.76 m	55° 44' 22.9" N	133° 27' 20.8" W	---
1.19	Shoal	-0.06 m	55° 44' 24.6" N	133° 27' 20.0" W	---
1.20	Shoal	0.06 m	55° 44' 24.4" N	133° 27' 22.9" W	---
1.21	Shoal	-0.42 m	55° 44' 27.8" N	133° 27' 24.3" W	---
1.22	Rock	-0.43 m	55° 43' 10.9" N	133° 24' 05.6" W	---
1.23	Shoal	-3.05 m	55° 42' 15.8" N	133° 23' 59.4" W	---
1.24	Rock	[None]	55° 42' 37.7" N	133° 25' 28.5" W	---
1.25	Shoal	1.90 m	55° 45' 52.8" N	133° 30' 14.6" W	---
1.26	Shoal	1.35 m	55° 44' 09.5" N	133° 28' 24.2" W	---
2.1	Rock	-0.06 m	55° 45' 57.0" N	133° 29' 44.4" W	---
2.2	Rock	0.99 m	55° 47' 00.3" N	133° 30' 40.0" W	---
2.3	Rock	0.39 m	55° 44' 01.1" N	133° 29' 36.9" W	---
2.4	Rock	-1.05 m	55° 44' 02.5" N	133° 29' 44.6" W	---
2.5	Rock	-0.43 m	55° 43' 41.1" N	133° 22' 24.9" W	---
2.6	Rock	-0.34 m	55° 42' 48.5" N	133° 21' 07.9" W	---
2.7	Rock	0.30 m	55° 43' 40.5" N	133° 22' 23.9" W	---
2.8	Rock	-0.31 m	55° 42' 44.9" N	133° 21' 06.9" W	---
2.9	Rock	-0.51 m	55° 43' 17.5" N	133° 21' 06.3" W	---
2.10	Rock	-0.45 m	55° 43' 08.7" N	133° 20' 14.0" W	---
2.11	Rock	0.53 m	55° 43' 41.8" N	133° 20' 34.1" W	---
2.12	Rock	-0.59 m	55° 44' 04.8" N	133° 19' 46.5" W	---
2.13	Shoal	0.08 m	55° 43' 58.4" N	133° 20' 26.7" W	---
2.14	Shoal	-3.95 m	55° 44' 04.4" N	133° 20' 41.6" W	---
2.15	Shoal	-3.96 m	55° 44' 03.1" N	133° 20' 42.4" W	---
2.16	Shoal	-0.67 m	55° 45' 05.8" N	133° 20' 17.4" W	---
2.17	Shoal	-1.18 m	55° 45' 07.0" N	133° 20' 18.8" W	---
2.18	Shoal	-0.59 m	55° 43' 28.4" N	133° 23' 25.3" W	---
2.19	Shoal	-0.60 m	55° 43' 29.7" N	133° 23' 26.0" W	---



2.20	Rock	-0.30 m	55° 44' 56.6" N	133° 29' 34.9" W	---
2.21	Shoal	-6.55 m	55° 43' 02.9" N	133° 25' 26.4" W	---
2.22	Rock	-0.59 m	55° 43' 00.9" N	133° 20' 01.8" W	---
2.23	Rock	-2.14 m	55° 45' 16.0" N	133° 20' 31.1" W	---
2.24	SSS	[None]	55° 44' 13.2" N	133° 20' 14.1" W	---
3.1	Shoal	4.06 m	55° 44' 32.7" N	133° 20' 55.2" W	---
3.2	Shoal	4.12 m	55° 44' 51.0" N	133° 30' 04.5" W	---
3.3	Shoal	2.04 m	55° 43' 20.5" N	133° 25' 09.2" W	---
3.4	Shoal	4.21 m	55° 43' 34.7" N	133° 20' 44.2" W	---
3.5	Shoal	3.00 m	55° 43' 30.0" N	133° 20' 33.5" W	---
3.6	Shoal	6.00 m	55° 42' 59.5" N	133° 21' 07.2" W	---
3.7	Shoal	16.27 m	55° 43' 40.7" N	133° 25' 44.7" W	---
3.8	Shoal	3.55 m	55° 43' 02.8" N	133° 20' 49.5" W	---
3.9	Shoal	5.25 m	55° 42' 56.0" N	133° 25' 48.7" W	---

# **1 - Charted Features**

## 1.1) Profile/Beam - 3/1 from h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp

### Survey Summary

**Survey Position:** 55° 44' 35.1" N, 133° 30' 23.6" W  
**Least Depth:** 2.33 m (= 7.64 ft = 1.274 fm = 1 fm 1.64 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.19:15:09.000 (05/06/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp  
**Profile/Beam:** 3/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

pier ruins disproved by VBES and visual search

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-126/1103_126_dp	3/1	0.00	000.0	Primary

### Hydrographer Recommendations

remove peir ruins from chart (17404)

#### Cartographically-Rounded Depth (Affected Charts):

1 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

1fm 1ft (531\_1)

2.3m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Do not concur. SB data does not cover charted ruins. Retain pier ruins.

## Feature Images



*Figure 1.1.1*





*Figure 1.1.2 Facing NW*



*Figure 1.1.3 Facing SW*





*Figure 1.1.4 Facing W*

## 1.2) Profile/Beam - 18/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 43' 35.0" N, 133° 19' 22.7" W  
**Least Depth:** -0.55 m (= -1.82 ft = -0.303 fm = 0 fm 4.18 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.19:30:11.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 18/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new position on CHD(17404) RK

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	18/1	0.00	000.0	Primary

### Hydrographer Recommendations

Update position of CHD(17404) RK to this DP position. ~25 m NW of charted rock.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.6m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, graph, H11688  
 VALSOU - -0.554 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Do not concur. Adequately charted.



### 1.3) Profile/Beam - 12/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

#### Survey Summary

**Survey Position:** 55° 42' 44.9" N, 133° 20' 25.0" W  
**Least Depth:** -1.18 m (= -3.85 ft = -0.642 fm = 0 fm 2.15 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.18:59:25.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 12/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP for height, chart as reef use buffer as extent

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	12/1	0.00	000.0	Primary

#### Hydrographer Recommendations

Remove two rocks and chart reef using buffer. Use height from DP 1101\_126\_415 for height.

#### Cartographically-Rounded Depth (Affected Charts):

0 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 4ft (531\_1)

-1.2m (500\_1, 50\_1)

#### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Concur

## 1.4) Profile/Beam - 13/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 42' 42.2" N, 133° 20' 33.6" W  
**Least Depth:** -2.68 m (= -8.79 ft = -1.465 fm = -1 fm 2.79 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.19:00:28.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 13/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

dp for height, chart islet and southern rock as one reef.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	13/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove islet and southern rock. Chart as reef. Use DP 1101\_126\_420 for height.

#### Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-1fm 3ft (531\_1)

-2.7m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Concur

## Feature Images



*Figure 1.4.1*



## 1.5) Profile/Beam - 7/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 59.8" N, 133° 20' 32.2" W  
**Least Depth:** -1.50 m (= -4.93 ft = -0.822 fm = 0 fm 1.07 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:58:19.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 7/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP on CHD(17404) RK, picture 1103\_127\_1497.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	7/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify position of CHD(17404) RK to DP position.

#### Cartographically-Rounded Depth (Affected Charts):

0  $\frac{3}{4}$ fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 5ft (531\_1)

-1.5m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US,Graph,H11688  
 VALSOU - -1.503 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Do not concur. Adequately charted.

## Feature Images



*Figure 1.5.1*

## 1.6) Profile/Beam - 4/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 58.4" N, 133° 25' 19.7" W  
**Least Depth:** -2.78 m (= -9.12 ft = -1.520 fm = -1 fm 3.12 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:03:17.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 4/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

CHD(17404) RK is reef. DP on high point of reef

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	4/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove rock and chart as reef. Use DP 1101\_127\_96 and DP 1101\_127\_98 for extents. Use DP 1101\_127\_97 for height.

#### Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 -1fm 3ft (531\_1)  
 -2.8m (500\_1, 50\_1)

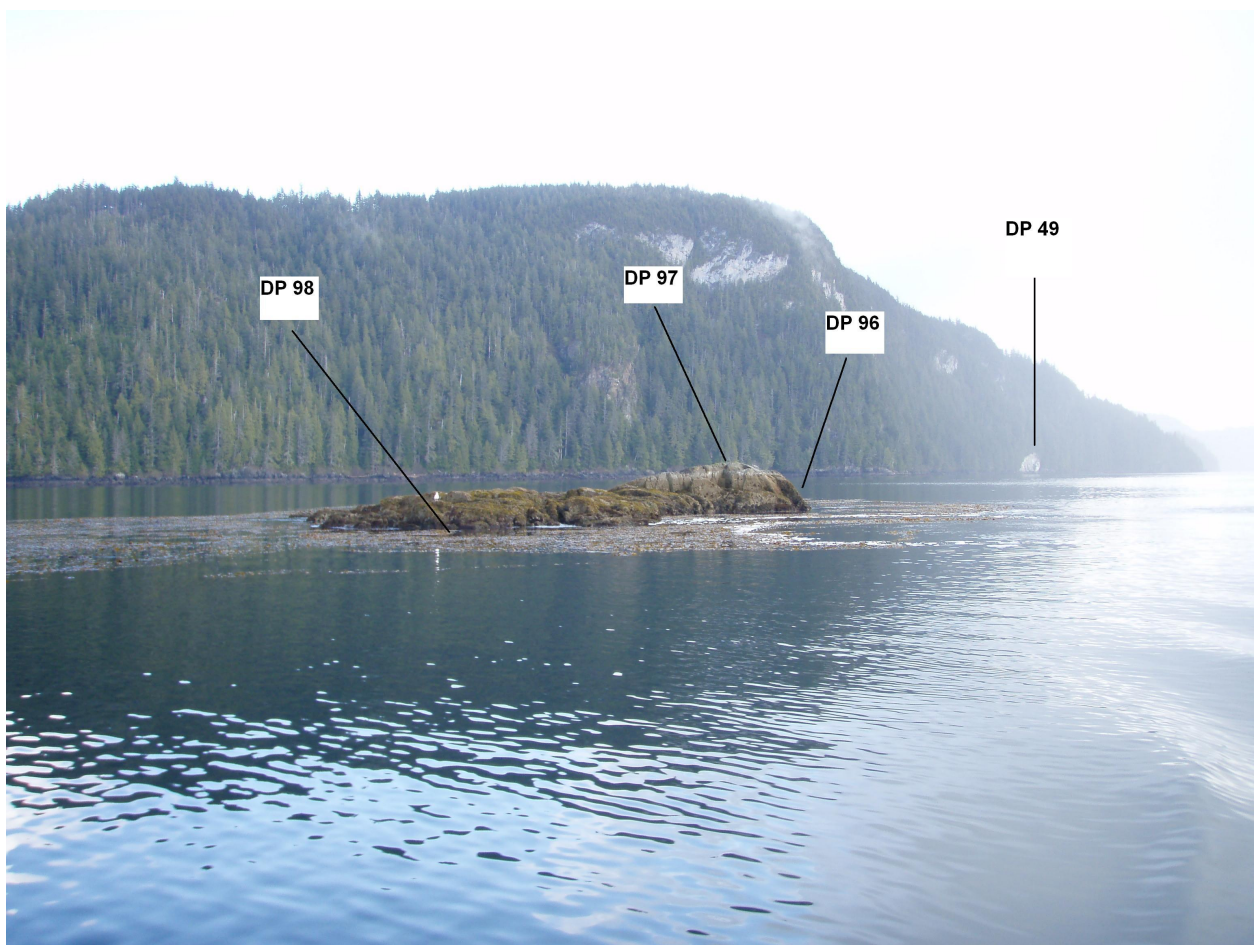
### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - -2.779 m  
 WATLEV - 2:always dry

## Office Notes

Concur with clarification. Chart rock at position of DP97 as high point of new reef.

## Feature Images



*Figure 1.6.1*



## 1.7) Profile/Beam - 6/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 33.2" N, 133° 26' 57.4" W  
**Least Depth:** -0.67 m (= -2.20 ft = -0.367 fm = 0 fm 3.80 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:40:23.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 6/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new position on CHD (17404) rk.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	6/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove CHD(17404) Rk. Chart RK at this position (approx. 25m SSe of CHD(17404) position).

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-.7m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 STATUS - 1:permanent  
 TECSOU - 7:found by laser

VALSOU - -0.672 m

WATLEV - 4:covers and uncovers

## Office Notes

Do not concur. Adequately charted.

## Feature Images



*Figure 1.7.1*

## 1.8) Profile/Beam - 8/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 25.6" N, 133° 26' 53.4" W  
**Least Depth:** -3.98 m (= -13.06 ft = -2.177 fm = -2 fm 1.06 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:01:38.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 8/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

CHD(17404) Islet is Reef. DP 1101\_127\_232 on high point of Reef, HP Reef is always dry and is bold. Use RK (1103\_127\_232) for HP. Use DP 1101\_127\_231 and 1101\_127\_233 for extents.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	8/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove CHD(17404) Islet. Chart Reef, use DP233, 232 for extents. Chart RK at this position. RK is HP reef.

#### Cartographically-Rounded Depth (Affected Charts):

-2fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 -2fm 1ft (531\_1)  
 -4.0m (500\_1, 50\_1)

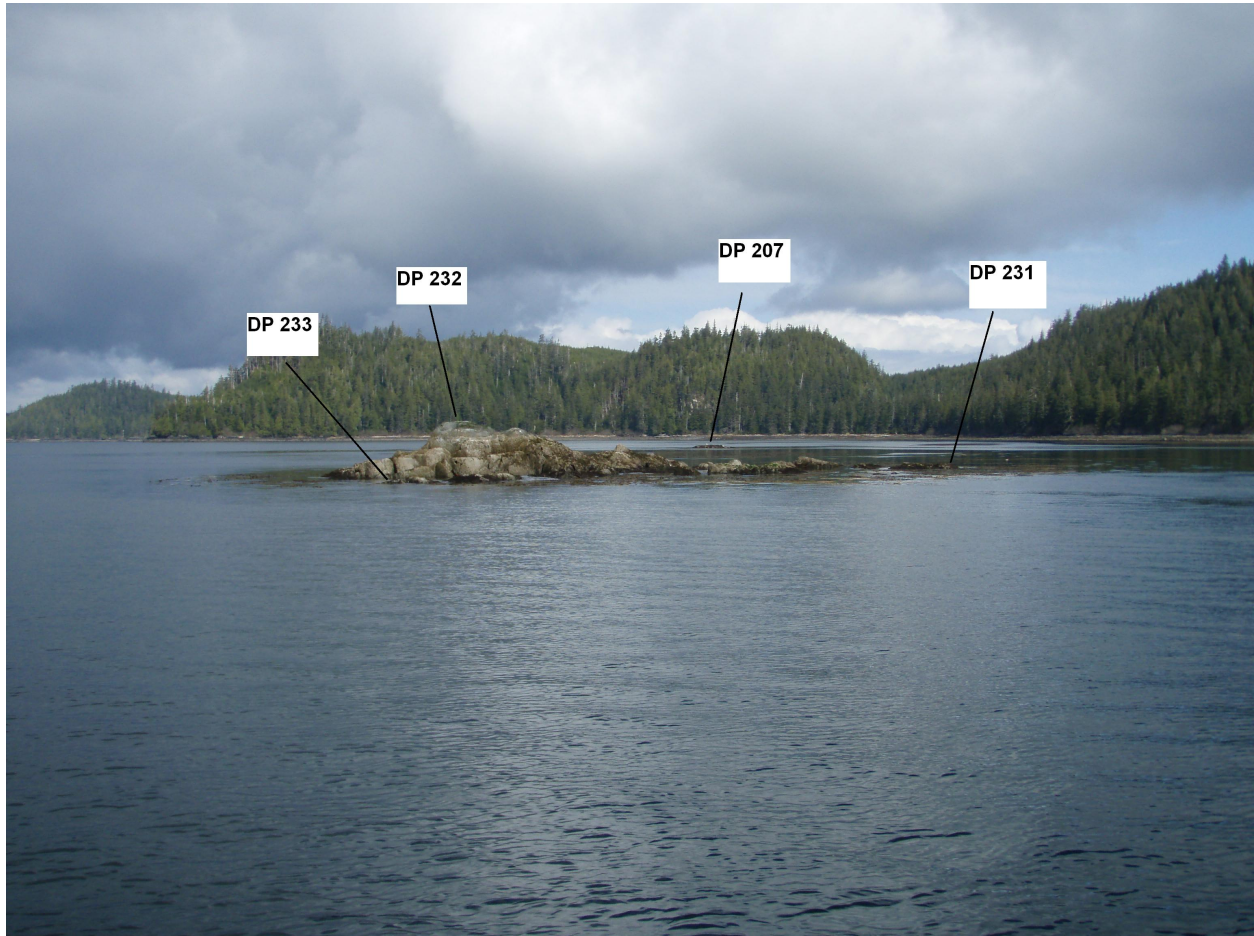
### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - -3.982 m  
 WATLEV - 2:always dry

## Office Notes

Do not concur. Reef is islet according to height. Retain as charted.

## Feature Images



*Figure 1.8.1*



## 1.9) Profile/Beam - 11/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 23.4" N, 133° 27' 20.9" W  
**Least Depth:** -4.66 m (= -15.29 ft = -2.548 fm = -2 fm 3.29 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None]; TVU (TPEv) [None]  
**Timestamp:** 2007-127.18:16:29.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 11/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

CHD(17404) Islet is Reef. DP is on HP on reef, HP is always dry, but is not prominent. Do not use RK to hold HP.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	11/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove CHD(17404) Islet. Chart Reef using DP 1101\_127\_247, 1101\_127\_249 for extents. Use DP 1101\_127\_248 for height.

#### Cartographically-Rounded Depth (Affected Charts):

-2 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 -2fm 3ft (531\_1)  
 -4.7m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Do not concur. Height cooresponds to islet. Retain islet and add surrounding reef.

## 1.10) Profile/Beam - 14/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 26.2" N, 133° 27' 23.7" W  
**Least Depth:** -4.63 m (= -15.20 ft = -2.533 fm = -2 fm 3.20 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:28:00.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 14/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

CHD(17404) Islet is Reef. DP is on HP on reef, HP is always dry, but is not prominent. Do not use RK to hold HP.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	15/1	0.00	000.0	Primary
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	14/1	49.13	346.9	Secondary (grouped)

### Hydrographer Recommendations

Remove CHD(17404) Islet. Chart Reef using DP 1101\_127\_271, 1101\_127\_273 for extents. Use DP 1101\_127\_272 for height.

#### Cartographically-Rounded Depth (Affected Charts):

-2 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)  
 -2fm 3ft (531\_1)  
 -4.6m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Do not concur. Height cooresponds to islet. Retain islet and add surrounding reef.

## 1.11) Profile/Beam - 17/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 45' 17.5" N, 133° 28' 20.7" W  
**Least Depth:** -9.94 m (= -32.61 ft = -5.435 fm = -5 fm 2.61 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:52:58.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 17/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP for height on CHD(17404) Islet. Islet is covered with trees.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	17/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify Height of CHD(17404) Islet

#### Cartographically-Rounded Depth (Affected Charts):

-5 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-5fm 2ft (531\_1)

-9.9m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Concur



## Feature Images



*Figure 1.11.1*

## 1.12) Profile/Beam - 19/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 45' 27.2" N, 133° 29' 11.3" W  
**Least Depth:** -1.97 m (= -6.46 ft = -1.077 fm = -1 fm 0.46 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.19:09:04.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 19/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

CHD(17404) Islet is Rk, DP for height on RK. covers/uncovers

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	19/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove CHD(17404) Islet, Chart RK (cover/ uncovers) at Islet position.

#### Cartographically-Rounded Depth (Affected Charts):

-1fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-1fm 0ft (531\_1)

-2.0m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, graph, H11688  
 VALSOU - -1.970 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Do not concur. Insufficient multibeam coverage. Retain as charted.

## 1.13) Profile/Beam - 22/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 42' 34.9" N, 133° 25' 48.2" W  
**Least Depth:** -3.80 m (= -12.48 ft = -2.080 fm = -2 fm 0.48 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.20:18:03.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 22/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP for height on CHD(17404) Islet

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	22/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify Height of CHD(17404) Islet

#### Cartographically-Rounded Depth (Affected Charts):

-2fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-2fm 0ft (531\_1)

-3.8m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Concur

## 1.14) Profile/Beam - 3/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 59.1" N, 133° 25' 19.5" W  
**Least Depth:** -0.79 m (= -2.60 ft = -0.433 fm = 0 fm 3.40 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:01:52.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 3/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

CHD(17404) RK is reef. DP is Northern Extent of Reef

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	3/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove rock and chart as reef. Use DP 1101\_127\_96 and DP 1101\_127\_98 for extents. Use DP 1101\_127\_97 for height.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.8m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688



## Office Notes

Do not concur. Replace charted rock with survey rock.

## 1.15) Profile/Beam - 5/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 57.9" N, 133° 25' 21.0" W  
**Least Depth:** -1.27 m (= -4.16 ft = -0.694 fm = 0 fm 1.84 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:04:20.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 5/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP on Southern Extent of Reef

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	5/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove rock and chart as reef. Use DP 1101\_127\_96 and DP 1101\_127\_98 for extents. Use DP 1101\_127\_97 for height.

#### Cartographically-Rounded Depth (Affected Charts):

0  $\frac{3}{4}$ fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 4ft (531\_1)

-1.3m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Do not concur. Replace charted rock with survey rock.

## 1.16) Profile/Beam - 7/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 26.8" N, 133° 26' 52.4" W  
**Least Depth:** -0.79 m (= -2.60 ft = -0.433 fm = 0 fm 3.40 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:00:14.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 7/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Northern Extent of Reef. CHD(17404) Islet is Reef. DP 1101\_127\_232 on high point of Reef, HP Reef is always dry and is bold. Use DP 1101\_127\_231 and 1101\_127\_233 for extents.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	5/1	0.00	000.0	Primary

### Hydrographer Recommendations

CHD(17404) Islet is Reef. DP 1101\_127\_232 on high point of Reef, HP of Reef is always dry and is bold. Use DP 1101\_127\_231 and 1101\_127\_233 for extents. (Should have secondary status.)

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.8m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688

## Office Notes

Do not concur. "Dry and bold" does not agree with height. Retain charted islet.

## 1.17) Profile/Beam - 9/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 25.0" N, 133° 26' 53.0" W  
**Least Depth:** -0.48 m (= -1.56 ft = -0.260 fm = 0 fm 4.44 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:03:03.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 9/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Southern Extent of reef. CHD(17404) Islet is Reef. DP 1101\_127\_232 on high point of Reef, HP Reef is always dry and is bold. Use RK for HP. Use DP 1101\_127\_231 and 1101\_127\_233 for extents.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	9/1	0.00	000.0	Primary

### Hydrographer Recommendations

CHD(17404) Islet is Reef. DP 1101\_127\_232 on high point of Reef, HP Reef is always dry and is bold. Use RK for HP. Use DP 1101\_127\_231 and 1101\_127\_233 for extents. (Should have secondary status.)

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.5m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)



## Office Notes

Do not concur. "Dry and bold" does not agree with height. Retain charted islet.

## 1.18) Profile/Beam - 10/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 22.9" N, 133° 27' 20.8" W  
**Least Depth:** -0.76 m (= -2.49 ft = -0.415 fm = 0 fm 3.51 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:15:43.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 10/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Southern extent of reef

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	8/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove CHD(17404) Islet. Chart Reef using DP 1101\_127\_247, 1101\_127\_249 for extents. Use DP 1101\_127\_248 for height.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.8m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

### Office Notes

Do not concur. Height corresponds to islet. Retain islet and add surrounding reef.

## 1.19) Profile/Beam - 12/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 24.6" N, 133° 27' 20.0" W  
**Least Depth:** -0.06 m (= -0.19 ft = -0.032 fm = 0 fm 5.81 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:18:16.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 12/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

RK is Northern EXT of reef

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	12/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove CHD(17404) Islet. Chart Reef using DP 1101\_127\_247, 1101\_127\_249 for extents. Use DP 1101\_127\_248 for height. (Should have secondary status.)

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 0ft (531\_1)

-.1m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

### Office Notes

Do not concur. Height corresponds to islet. Retain islet and add surrounding reef.

## 1.20) Profile/Beam - 13/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 24.4" N, 133° 27' 22.9" W  
**Least Depth:** 0.06 m (= 0.20 ft = 0.034 fm = 0 fm 0.20 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:26:15.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 13/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Awash RK is Southern EXT of reef.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	13/1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove CHD(17404) Islet. Chart Reef using DP 1101\_127\_271, 1101\_127\_273 for extents. Use DP 1101\_127\_272 for height. (Should have secondary status.)

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 0ft (531\_1)

.1m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

### Office Notes

Do not concur. Height corresponds to islet. Retain islet and add surrounding reef.

## 1.21) Profile/Beam - 15/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 27.8" N, 133° 27' 24.3" W  
**Least Depth:** -0.42 m (= -1.39 ft = -0.232 fm = 0 fm 4.61 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.18:30:00.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 15/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

RK is Northern extent of reef, use buffer for surrounding foul

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	15/1	0.00	000.0	Primary
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	14/1	49.13	346.9	Secondary (grouped)

### Hydrographer Recommendations

Remove CHD(17404) Islet. Chart Reef using DP 1101\_127\_271, 1101\_127\_273 for extents. Use DP 1101\_127\_272 for height. (Should have secondary status.)

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.4m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

## Office Notes

Do not concur. Height on DP on islet cooresponds to islet. Retain islet and add surrounding reef.

## 1.22) Profile/Beam - 1/1 from h11688 / 1103\_nonechosounder\_dp / 2007-128 / 1103\_128\_dp

### Survey Summary

**Survey Position:** 55° 43' 10.9" N, 133° 24' 05.6" W  
**Least Depth:** -0.43 m (= -1.42 ft = -0.237 fm = 0 fm 4.58 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-128.18:25:07.000 (05/08/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-128 / 1103\_128\_dp  
**Profile/Beam:** 1/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP on RK is eastern extent of Island, pictures 1103\_128\_2293a and 1103\_128\_2293b, use VBES buffer and DP position for extent of ledge.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-128/1103_128_dp	1/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify position of CHD(17404) Island to extend to DP position.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.4m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORIND - US,US\_graph,H11688

VALSOU - -0.434 m



## Office Notes

Concur

## Feature Images



*Figure 1.22.1*





*Figure 1.22.2*

## 1.23) Profile/Beam - 4/1 from h11688 / 1103\_nonechosounder\_dp / 2007-128 / 1103\_128\_dp

### Survey Summary

**Survey Position:** 55° 42' 15.8" N, 133° 23' 59.4" W  
**Least Depth:** -3.05 m (= -10.01 ft = -1.668 fm = -1 fm 4.01 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-128.19:41:27.000 (05/08/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-128 / 1103\_128\_dp  
**Profile/Beam:** 4/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP for HT on RK, picture 1103\_128\_2500

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-128/1103_128_dp	4/1	0.00	000.0	Primary

### Hydrographer Recommendations

Update height from DP for CHD(17404) RK

#### Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-1fm 4ft (531\_1)

-3.1m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

### Office Notes

Concur



## Feature Images



*Figure 1.23.1*

## 1.24) GP No. - Danger 1 from ChartGPs - ENC rock

### Survey Summary

**Survey Position:** 55° 42' 37.7" N, 133° 25' 28.5" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None] ; **TVU (TPEv)** [None]  
**Timestamp:** [None]  
**GP Dataset:** ChartGPs - ENC rock  
**GP No.:** Danger 1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Rock not observed at this location. Disproved with MBES. In picture, green represents depth 8-15 m, yellow depths 4-8 m, and red represents depths shoaler than 4 m.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - ENC rock	Danger 1	0.00	000.0	Primary

### Hydrographer Recommendations

Remove charted rock.

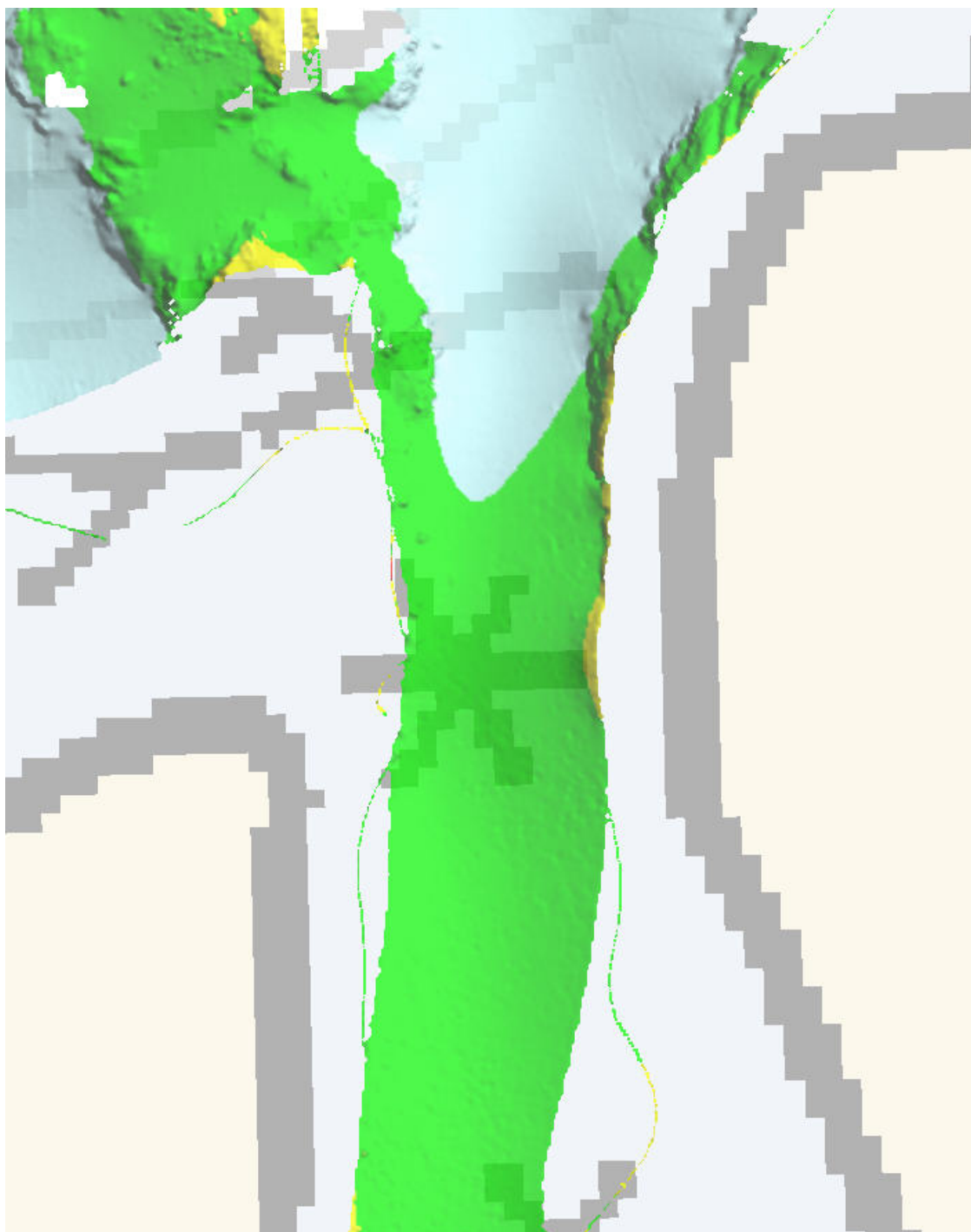
### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 2:depth unknown  
 SORDAT - 20060100  
 SORIND - US,US,graph,chart 17404  
 WATLEV - 4:covers and uncovers

### Office Notes

Concur

### Feature Images



*Figure 1.24.1*



## 1.25) Profile/Beam - 1/1 from h11688 / dive / 2007-166 / h11688\_dive2\_dn166\_dp

### Survey Summary

**Survey Position:** 55° 45' 52.8" N, 133° 30' 14.6" W  
**Least Depth:** 1.90 m (= 6.22 ft = 1.036 fm = 1 fm 0.22 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-166.23:05:00.000 (06/15/2007)  
**DP Dataset:** h11688 / dive / 2007-166 / h11688\_dive2\_dn166\_dp  
**Profile/Beam:** 1/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Diver's least depth over boulder on shoal

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/dive/2007-166/h11688_dive2_dn166_dp	1/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart as shoal sounding

#### Cartographically-Rounded Depth (Affected Charts):

1fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

1fm 0ft (531\_1)

1.9m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 6:least depth known  
 STATUS - 1:permanent  
 TECSOU - 4:found by diver

## Office Notes

Concur

## 1.26) Profile/Beam - 1/1 from h11688 / dive / 2007-166 / h11688\_dive1\_dn166\_dp

### Survey Summary

**Survey Position:** 55° 44' 09.5" N, 133° 28' 24.2" W  
**Least Depth:** 1.35 m (= 4.43 ft = 0.738 fm = 0 fm 4.43 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-166.22:05:00.000 (06/15/2007)  
**DP Dataset:** h11688 / dive / 2007-166 / h11688\_dive1\_dn166\_dp  
**Profile/Beam:** 1/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Diver's least depth over shoal rock

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/dive/2007-166/h11688_dive1_dn166_dp	1/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart as shoal sounding

#### Cartographically-Rounded Depth (Affected Charts):

0  $\frac{3}{4}$ fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 4ft (531\_1)

1.4m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 6:least depth known  
 STATUS - 1:permanent  
 TECSOU - 4:found by diver

## Office Notes

Do not concur. Shoaler sounding found with single beam.

## **2 - New Features**

## 2.1) Profile/Beam - 1/1 from h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp

### Survey Summary

**Survey Position:** 55° 45' 57.0" N, 133° 29' 44.4" W  
**Least Depth:** -0.06 m (= -0.20 ft = -0.033 fm = 0 fm 5.80 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.17:26:48.000 (05/06/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp  
**Profile/Beam:** 1/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

New rock awash

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-126/1103_126_dp	1/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 0ft (531\_1)

-.1m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - -0.061 m  
 WATLEV - 5:awash

## Office Notes

Concur



## Feature Images



*Figure 2.1.1*

## 2.2) Profile/Beam - 2/1 from h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp

### Survey Summary

**Survey Position:** 55° 47' 00.3" N, 133° 30' 40.0" W  
**Least Depth:** 0.99 m (= 3.24 ft = 0.540 fm = 0 fm 3.24 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.17:43:14.000 (05/06/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp  
**Profile/Beam:** 2/1  
**Charts Affected:** 17403\_1, 17404\_1, 17360\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

New submerged RK

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-126/1103_126_dp	2/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0 ½fm (17404\_1, 17360\_1, 17400\_1, 16016\_1, 530\_1)

0fm 3ft (17403\_1, 531\_1)

1.0m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - 0.987 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur

## Feature Images



*Figure 2.2.1*



## 2.3) Profile/Beam - 4/1 from h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp

### Survey Summary

**Survey Position:** 55° 44' 01.1" N, 133° 29' 36.9" W  
**Least Depth:** 0.39 m (= 1.29 ft = 0.215 fm = 0 fm 1.29 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.19:30:35.000 (05/06/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp  
**Profile/Beam:** 4/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

New submerged rk, use shoreline buffer for extents of rock

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-126/1103_126_dp	4/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart submerged rock

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

.4m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - 0.393 m  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur

## Feature Images



*Figure 2.3.1*





*Figure 2.3.2 Facing S*

## 2.4) Profile/Beam - 5/1 from h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp

### Survey Summary

**Survey Position:** 55° 44' 02.5" N, 133° 29' 44.6" W  
**Least Depth:** -1.05 m (= -3.43 ft = -0.572 fm = 0 fm 2.57 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.19:34:16.000 (05/06/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-126 / 1103\_126\_dp  
**Profile/Beam:** 5/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

New Rk, covers/uncovers

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-126/1103_126_dp	5/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 3ft (531\_1)

-1.0m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - -1.046 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur

## Feature Images



*Figure 2.4.1*



## 2.5) Profile/Beam - 1/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 43' 41.1" N, 133° 22' 24.9" W  
**Least Depth:** -0.43 m (= -1.41 ft = -0.235 fm = 0 fm 4.59 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.16:45:14.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 1/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new rock

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	1/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.4m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688  
 VALSOU - -0.429 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur

## Feature Images



*Figure 2.5.1*



## 2.6) Profile/Beam - 6/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 42' 48.5" N, 133° 21' 07.9" W  
**Least Depth:** -0.34 m (= -1.11 ft = -0.185 fm = 0 fm 4.89 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.17:33:29.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 6/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new rk

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	6/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.3m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688  
 VALSOU - -0.338 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur

## Feature Images



*Figure 2.6.1*

## 2.7) Profile/Beam - 2/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 43' 40.5" N, 133° 22' 23.9" W  
**Least Depth:** 0.30 m (= 0.97 ft = 0.162 fm = 0 fm 0.97 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None]; TVU (TPEv) [None]  
**Timestamp:** 2007-126.16:51:09.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 2/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new rk

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	2/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

.3m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688  
 VALSOU - 0.296 m  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur

## 2.8) Profile/Beam - 7/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 42' 44.9" N, 133° 21' 06.9" W  
**Least Depth:** -0.31 m (= -1.02 ft = -0.170 fm = 0 fm 4.98 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.17:49:04.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 7/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new rk, marks extent of foul rocky area

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	7/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.3m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688  
 VALSOU - -0.310 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur



## 2.9) Profile/Beam - 10/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 43' 17.5" N, 133° 21' 06.3" W  
**Least Depth:** -0.51 m (= -1.66 ft = -0.276 fm = 0 fm 4.34 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.18:00:37.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 10/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new rock

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	10/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.5m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688  
 VALSOU - -0.505 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur

## Feature Images



*Figure 2.9.1*

## 2.10) Profile/Beam - 19/1 from h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126

### Survey Summary

**Survey Position:** 55° 43' 08.7" N, 133° 20' 14.0" W  
**Least Depth:** -0.45 m (= -1.49 ft = -0.248 fm = 0 fm 4.51 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-126.19:41:45.000 (05/06/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-126 / dp\_1101\_126  
**Profile/Beam:** 19/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new rk awash

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-126/dp_1101_126	19/1	0.00	000.0	Primary

### Hydrographer Recommendations

chart new rock

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.5m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688  
 VALSOU - -0.453 m  
 WATLEV - 5:awash

## Office Notes

Concur

## 2.11) Profile/Beam - 3/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 41.8" N, 133° 20' 34.1" W  
**Least Depth:** 0.53 m (= 1.75 ft = 0.292 fm = 0 fm 1.75 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:04:42.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 3/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP on CHD(17404) rock, picture 1103\_127\_1297.

RK is approximately 45m NW of CHD(17404) position, use current position. Bathymetry agrees with new position.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	3/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify position of CHD(17404) RK to this DP position.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

.5m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - 0.534 m  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur



## Feature Images



*Figure 2.11.1*

## 2.12) Profile/Beam - 5/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 04.8" N, 133° 19' 46.5" W  
**Least Depth:** -0.59 m (= -1.93 ft = -0.322 fm = 0 fm 4.07 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:35:03.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 5/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

New rock, picture 1103\_127\_1409.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	5/1	0.00	000.0	Primary

### Hydrographer Recommendations

Chart new RK.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.6m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US, US, Graph, H11688  
 VALSOU - -0.588 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur

## Feature Images



*Figure 2.12.1*

## 2.13) Profile/Beam - 6/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 58.4" N, 133° 20' 26.7" W  
**Least Depth:** 0.08 m (= 0.26 ft = 0.043 fm = 0 fm 0.26 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.17:55:05.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 6/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP is N extent of ledge, use VBES buffer and DP position for extent of ledge.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	6/1	0.00	000.0	Primary

### Hydrographer Recommendations

Chart ledge using VBES buffer line

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 0ft (531\_1)

.1m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Attributes:** SORDAT - 20070725

SORIND - US,US\_graph,H11688

## Office Notes

Do not concur. Not included in Notebook files.

## 2.14) Profile/Beam - 8/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 04.4" N, 133° 20' 41.6" W  
**Least Depth:** -3.95 m (= -12.95 ft = -2.158 fm = -2 fm 0.95 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.19:02:04.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 8/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

N. extent of new Islet, pictures 1103\_127\_1696a and 1103\_127\_1696b looking south.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	8/1	0.00	000.0	Primary

### Hydrographer Recommendations

Chart new islet using DP 1103\_127\_1696 and 1103\_127\_1697 for extents.

#### Cartographically-Rounded Depth (Affected Charts):

-2fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-2fm 1ft (531\_1)

-3.9m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US,Graph,H11688



## Office Notes

Concur.

## Feature Images



*Figure 2.14.1*

## 2.15) Profile/Beam - 9/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 03.1" N, 133° 20' 42.4" W  
**Least Depth:** -3.96 m (= -12.98 ft = -2.164 fm = -2 fm 0.98 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.19:04:58.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 9/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

South extent of new islet, picture 1103\_127\_1697 looking north.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	9/1	0.00	000.0	Primary

### Hydrographer Recommendations

Chart new islet using DP 1103\_127\_1696 and 1103\_127\_1697 for extents.

#### Cartographically-Rounded Depth (Affected Charts):

-2fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-2fm 1ft (531\_1)

-4.0m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US,Graph,H11688

## Office Notes

Concur

## Feature Images



*Figure 2.15.1*

## 2.16) Profile/Beam - 13/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 45' 05.8" N, 133° 20' 17.4" W  
**Least Depth:** -0.67 m (= -2.19 ft = -0.365 fm = 0 fm 3.81 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.19:56:44.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 13/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP on extent of ledge, pictures 1103\_127\_1863a and 1103\_127\_1863b looking west.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	13/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify ledge to DP position.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-.7m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20070725  
 SORIND - US,US,Graph,H11688

## Office Notes

Concur



## Feature Images



*Figure 2.16.1*



*Figure 2.16.2*

## 2.17) Profile/Beam - 14/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 45' 07.0" N, 133° 20' 18.8" W  
**Least Depth:** -1.18 m (= -3.86 ft = -0.643 fm = 0 fm 2.14 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.19:57:48.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 14/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP is extent of ledge, pictures 1103\_127\_1864a and 1103\_127\_1864b looking west.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	14/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify ledge to DP position.

#### Cartographically-Rounded Depth (Affected Charts):

0 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 4ft (531\_1)

-1.2m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Attributes:** SORDAT - 20070725

SORIND - US,US\_graph,H11688

## Office Notes

Concur



## Feature Images



*Figure 2.17.1*



*Figure 2.17.2*



## 2.18) Profile/Beam - 15/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 28.4" N, 133° 23' 25.3" W  
**Least Depth:** -0.59 m (= -1.93 ft = -0.322 fm = 0 fm 4.07 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.20:56:14.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 15/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

South extent of foul with kelp area, picture 1103\_127\_1992.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	15/1	0.00	000.0	Primary

### Hydrographer Recommendations

Add new foul with kelp area, use DP limits.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.6m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Attributes:** SORDAT - 20070725

SORIND - US,US\_graph,H11688



## Office Notes

Concur with clarification. Add new kelp area and foul area.

## Feature Images



*Figure 2.18.1*

## 2.19) Profile/Beam - 16/1 from h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp

### Survey Summary

**Survey Position:** 55° 43' 29.7" N, 133° 23' 26.0" W  
**Least Depth:** -0.60 m (= -1.96 ft = -0.327 fm = 0 fm 4.04 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.20:57:24.000 (05/07/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-127 / 1103\_127\_dp  
**Profile/Beam:** 16/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

North extent of foul with kelp area, picture 1103\_127\_1993.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-127/1103_127_dp	16/1	0.00	000.0	Primary

### Hydrographer Recommendations

Add new foul with kelp area, Use DP limits.

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.6m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Attributes:** SORDAT - 20070725

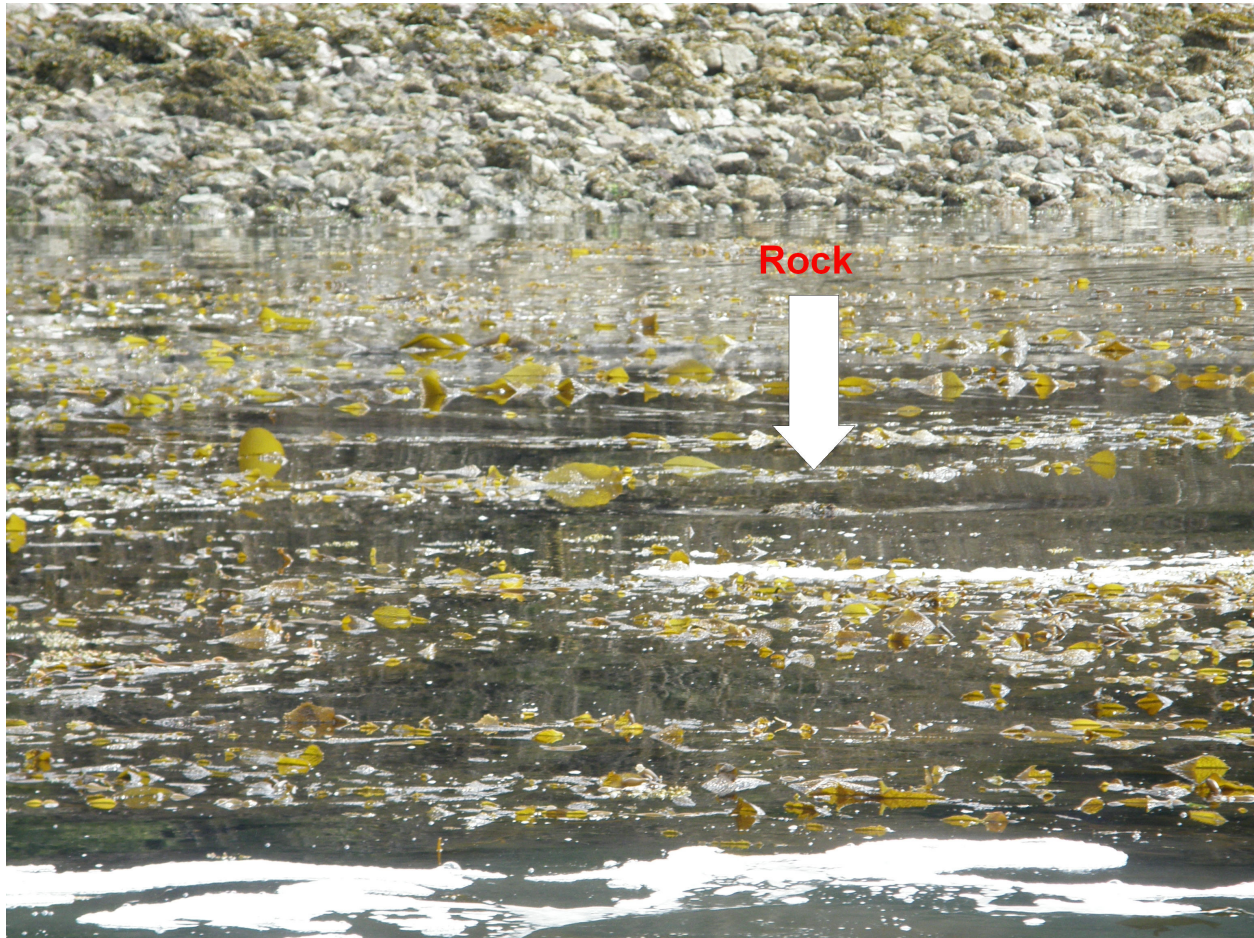
SORIND - US,US\_graph,H11688

## Office Notes

Concur with clarification. Add new kelp area and foul area.



## Feature Images



*Figure 2.19.1*

## 2.20) Profile/Beam - 20/1 from h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp

### Survey Summary

**Survey Position:** 55° 44' 56.6" N, 133° 29' 34.9" W  
**Least Depth:** -0.30 m (= -0.99 ft = -0.166 fm = 0 fm 5.01 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-127.19:19:08.000 (05/07/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-127 / 1101\_127\_dp  
**Profile/Beam:** 20/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

New RK. Buffer is around surrounding shoal area.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-127/1101_127_dp	20/1	0.00	000.0	Primary

### Hydrographer Recommendations

Chart new RK.

#### Cartographically-Rounded Depth (Affected Charts):

0fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 1ft (531\_1)

-.3m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORDAT - 20070725  
 SORIND - US,US\_graph,H11688  
 VALSOU - -0.303 m  
 WATLEV - 4:covers and uncovers

## Office Notes

Concur



## Feature Images



*Figure 2.20.1*

## 2.21) Profile/Beam - 2/1 from h11688 / 1103\_nonechosounder\_dp / 2007-128 / 1103\_128\_dp

### Survey Summary

**Survey Position:** 55° 43' 02.9" N, 133° 25' 26.4" W  
**Least Depth:** -6.55 m (= -21.50 ft = -3.584 fm = -3 fm 3.50 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-128.19:09:30.000 (05/08/2007)  
**DP Dataset:** h11688 / 1103\_nonechosounder\_dp / 2007-128 / 1103\_128\_dp  
**Profile/Beam:** 2/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

DP on the seaward EXT of Ledge, -6.5m is the HP of the islet, pictures 1103\_128\_2428a and 1103\_128\_2428b.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1103_nonechosounder_dp/2007-128/1103_128_dp	2/1	0.00	000.0	Primary

### Hydrographer Recommendations

Modify the seaward extent of the ledge using the VBES and DP position.

#### Cartographically-Rounded Depth (Affected Charts):

-3 ½fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-3fm 3ft (531\_1)

-6.6m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Attributes:** SORIND - US,US,Graph,H11688

## Office Notes

Do not concur. Adequately charted.

## Feature Images



*Figure 2.21.1*





*Figure 2.21.2*

## 2.22) Profile/Beam - 2/1 from h11688 / 1101\_nonechosounder\_dp / 2007-129 / 1101\_129\_dp

### Survey Summary

**Survey Position:** 55° 43' 00.9" N, 133° 20' 01.8" W  
**Least Depth:** -0.59 m (= -1.95 ft = -0.325 fm = 0 fm 4.05 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-129.22:39:33.000 (05/09/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-129 / 1101\_129\_dp  
**Profile/Beam:** 2/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

new rock offshore of charted foul

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-129/1101_129_dp	2/1	0.00	000.0	Primary

### Hydrographer Recommendations

Chart New RK

#### Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

0fm 2ft (531\_1)

-0.6m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORIND - US,US,Graph,H11688

VALSOU - -0.594 m



## Office Notes

Concur

## Feature Images



*Figure 2.22.1*

## 2.23) Profile/Beam - 1/1 from h11688 / 1101\_nonechosounder\_dp / 2007-129 / 1101\_129\_dp

### Survey Summary

**Survey Position:** 55° 45' 16.0" N, 133° 20' 31.1" W  
**Least Depth:** -2.14 m (= -7.02 ft = -1.170 fm = -1 fm 1.02 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None]; **TVU (TPEv)** [None]  
**Timestamp:** 2007-129.16:51:08.000 (05/09/2007)  
**DP Dataset:** h11688 / 1101\_nonechosounder\_dp / 2007-129 / 1101\_129\_dp  
**Profile/Beam:** 1/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

New RK S of beacon

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1101_nonechosounder_dp/2007-129/1101_129_dp	1/1	0.00	000.0	Primary

### Hydrographer Recommendations

Chart new RK.

#### Cartographically-Rounded Depth (Affected Charts):

-1fm (17404\_1, 17400\_1, 16016\_1, 530\_1)

-1fm 1ft (531\_1)

-2.1m (500\_1, 50\_1)

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)

**Attributes:** SORIND - US,US,Graph,H11688

VALSOU - -2.139 m

## Office Notes

Concur

## 2.24) Contact/Point - 0001/1 from h11688 / 1015\_c3d\_hvf / 2007-129 / 318\_1724

### Survey Summary

**Survey Position:** 55° 44' 13.2" N, 133° 20' 14.1" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)** [None] ; **TVU (TPEv)** [None]  
**Timestamp:** 2007-178.06:10:05 (06/27/2007)  
**Survey Line:** h11688 / 1015\_c3d\_hvf / 2007-129 / 318\_1724  
**Contact/Point:** 0001/1  
**Charts Affected:** 17404\_1, 17400\_1, 16016\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

large rk, complete SWMB coverage not obtained, holiday remains over possible high point, least depth found is 3.37 m.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11688/1015_c3d_hvf/2007-129/318_1724	0001	0.00	000.0	Primary

### Hydrographer Recommendations

modify 5 fathom contour to reflect shoal

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)

### Office Notes

Chart Dangerous underwater rock of unknown depth.



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Ocean Service  
Silver Spring, Maryland 20910

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** October 3, 2007

**HYDROGRAPHIC BRANCH:** Pacific  
**HYDROGRAPHIC PROJECT:** OPR-0190-RA-2007  
**HYDROGRAPHIC SHEET:** H11688

**LOCALITY:** Tonowek Bay, AK  
**TIME PERIOD:** May 6 - July 26, 2007

**TIDE STATION USED:** 945-0711 Nossuk Bay, AK  
Lat. 55° 43.3'N Long. 133° 21.0' W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 2.922 meters

**REMARKS:** RECOMMENDED ZONING  
Use zone(s) identified as: SA216 & SA227

Refer to attachments for zoning information.

**Note 1:** Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

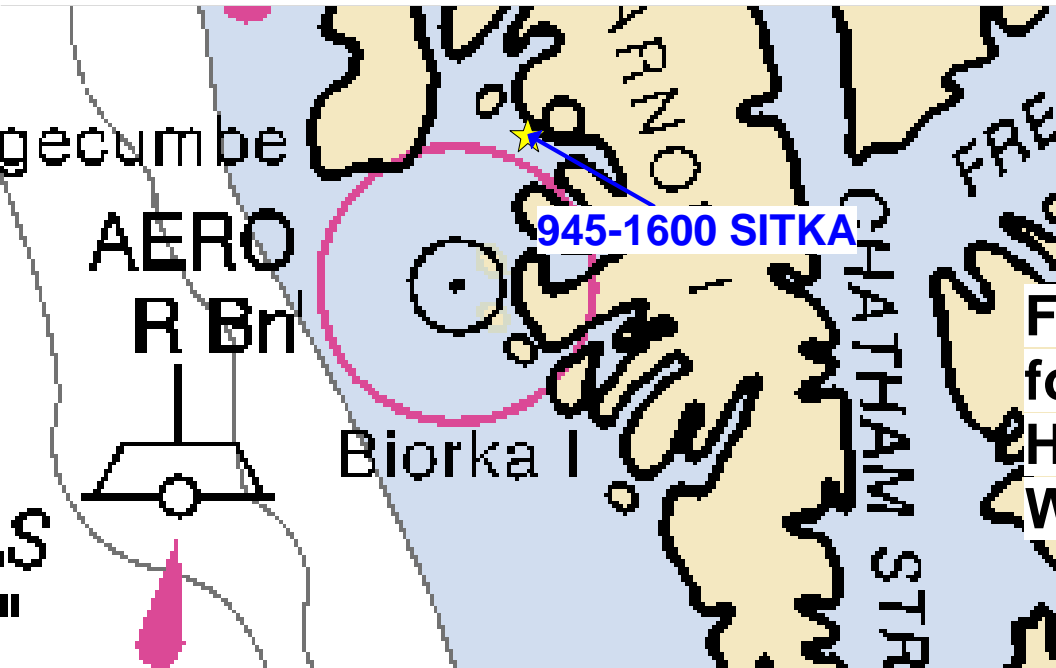
Peter J. Stone

Digitally signed by Peter J. Stone  
DN: cn=Peter J. Stone, o=US, ou=CO-OPS,  
ou=NOAA/NOS, email=peter.stone@noaa.  
gov  
Reason: I am approving this document  
Date: 2007.10.09 11:12:28 -0400

CHIEF, PRODUCTS AND SERVICES DIVISION

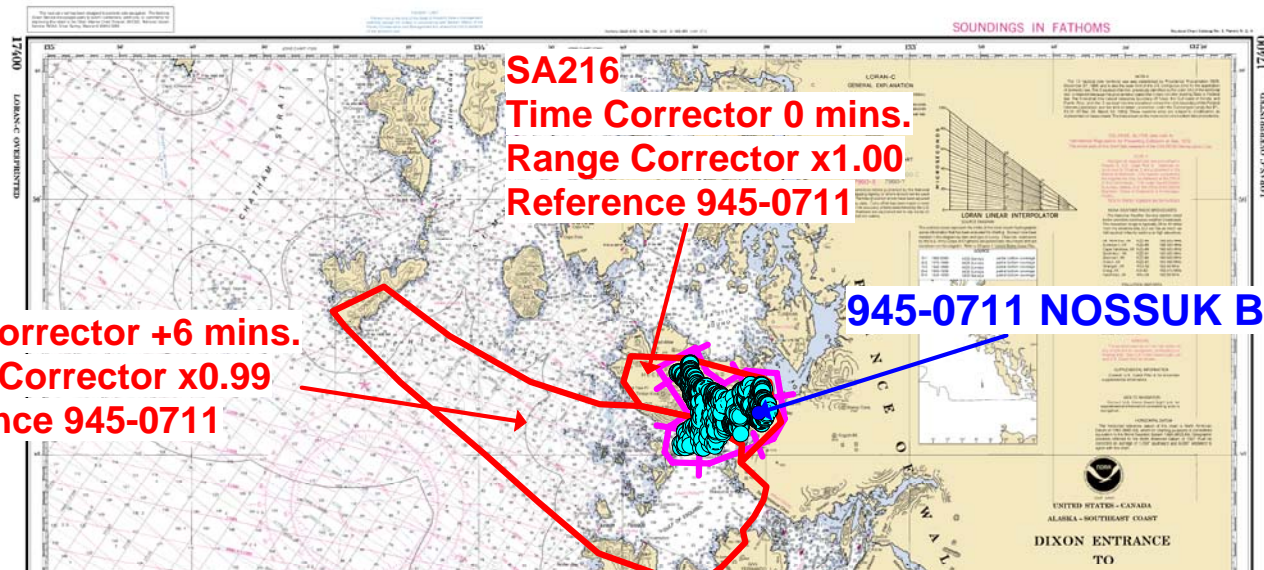






**Final Tidal Zoning  
for OPR-O190-FA-2007  
H11688**

**West of Prince of Wales Island, AK**



**SA216  
Time Corrector 0 mins.  
Range Corrector x1.00  
Reference 945-0711**

**SA227  
Time Corrector +6 mins.  
Range Corrector x0.99  
Reference 945-0711**

**945-0711 NOSSUK BAY**

UNITED STATES - CANADA  
ALABAMA - SOUTHEAST COAST  
DIXON ENTRANCE  
TO

**H11688 HCell Report**  
Kurt Brown, Physical Scientist  
Pacific Hydrographic Branch

**Introduction**

The primary purpose of the HCell is to provide new survey information in International Hydrographic Organization (IHO) format S-57 to update the largest scale ENC's and RNC's in the region: NOAA ENC US5AK4AM and NOAA RNCs 17403 (1:40,000), 17404 (1:40,000).

HCell compilation of survey H11688 used Office of Coast Survey HCell Specifications Version 3.0 and HCell Reference Guide Version 1.0.

**1. Compilation Scale**

The compilation scale for HCell H11688 is 1:40,000 based on the largest scale chart in the region, 17404. Chart 17403, also 1:40,000 encompasses only the northernmost point of the survey and does not contain any charted soundings in the common area. Non-bathymetric features have been generalized to chart scale.

**2. Soundings**

A survey-scale sounding (SOUNDG) feature object layer was built from the 12-meter combined surface, **H11688\_Office\_10m\_Combined**, in CARIS BASE Editor. A shoal-biased selection was made at 1:7,500. The resultant sounding layer contains depths ranging from 0.1 to 219 meters.

In CARIS BASE Editor soundings were manually selected from the high density sounding layers and imported into a new layer created to accommodate chart density depths. Manual selection was used to accomplish a density and distribution that closely represents the seafloor morphology.

**3. Depth Areas and Depth Contours**

**3.1 Depth Areas**

The extents of the highest resolution BASE Surface together with the extents of the soundings layer were used to digitize the hydrographic extents, which were then used to create the single, all encompassing depth area (DEPARE). A depth range of 0 to 219 meters was used for the depth area object. Upon conversion to NOAA charting units, the depth range is 0 to 119 fathoms.

**3.2 Depth Contours**

Depth contours at the intervals on the largest scale chart are included in the H11688\_SS HCell for MCD raster charting division to use for guidance in creating chart contours. The generalized metric and feet equivalent contour values are shown in the table below.

Chart Contours in Fathoms	Metric Equivalent of Chart Contours	Metric Equivalent of Chart Contours NOAA Rounded	Actual Value of Chart Contours
3	5.4864	5.715	3.75
5	9.144	9.3726	5.75
10	18.288	18.5166	10.75
50	91.44	92.8116	50.75

Contours delivered in the H11688\_SS file have not been deconflicted against shoreline features, soundings and hydrography as all other features in the H11688\_CS file and soundings in the H11688\_SS have been. This results in conflicts between the H11688\_SS file contours and HCell features at or near the survey limits. Conflicts with M\_COVR, M\_QUAL, DEPARE, COALNE and SBDARE objects, and with DEPCNT objects representing MLLW, should be expected. HCell features should be honored over H11688\_SS.000 file contours in all cases where conflicts are found.

#### 4. Meta Areas

The following Meta object areas are included in HCell 11688:

M\_QUAL  
M\_COVR

Meta area objects were constructed on the basis of the limits of the hydrography. (See 3.1 *Depth Areas*.)

#### 5. Features

Shoreline features for H11688 were delivered from the field in several .hob files described in the DR. The files contained new features, modification to GC or charted features, and disprovals. These were deconflicted against GC shoreline, the chart and hydrography during office processing.

New rocky seabed areas were delineated using the high resolution BASE surfaces and are included in the H11688 HCell. Bottom samples were imported from the ENC and survey and are included in the HCell.

There were nine DTONs reported from survey H11688. The DTONs are charted and reflected in the HCell.

There were no AWOIS items in survey H11688.

The source of all features included in the H11688 HCell can be determined by the SORIND field.

## 6. S-57 Objects and Attributes

The H11688\_CS HCell contains the following Objects:

SOUNDG	Chart scale soundings
DEPARE	All-encompassing depth area and intertidal areas
UWTROC	Rock features
SBDARE	Bottom samples, rocky seabed areas and ledges
M_COVR	Data coverage Meta object
M_QUAL	Data quality Meta object
\$CSYMB	Blue notes
DEPCNT	Zero depth curves.
LNDARE	Islets
OBSTRN	Foul areas
COALNE	Coastline imported from ENC
LNDELV	Updated heights for islets
WEDKLP	Kelp areas

The H11688\_SS HCell contains the following Objects:

DEPCNT	NOAA rounded contours at chart scale intervals
SOUNDG	Soundings at the survey scale density

All S-57 Feature Objects in the H11688\_CS HCell have been attributed as fully as possible based on information provided by the Hydrographer and in accordance with current guidance and the OCS HCell Specifications.

## 7. Blue Notes

Notes to the RNC and ENC chart compilers are included in the HCell as \$CSYMB features with the Blue Note information located in the INFORM field. The NINFOM field is populated with the charting disposition

## 8. Spatial Framework

### 8.1 Coordinate System

All spatial map and base cell file deliverables are in an LLDG geographic coordinate system, with WGS84 horizontal, MHW vertical, and MLLW (1983-2001 NTDE) sounding datums.

### 8.2 Horizontal and Vertical Units

During creation of sounding sets in CARIS BASE Editor, and creation of the HCell in CARIS S-57 Composer, units are maintained as metric with millimeter resolution. NOAA rounding is applied at the same time that conversion to chart units is made to the metric HCell base cell file, at the end of the HCell compilation process.

A CARIS environment variable, `uslXsounding_round`, controls the depth at which rounding occurs. Setting this variable to NOAA fathoms and feet displays all soundings equal to or greater than 11 fathoms as whole units. Depths shoaler than 11 fathoms are shown in fathoms and feet.

In an ENC viewer fathoms and feet display in the format `X.YZZZ`, where X is fathoms, Y is feet, and ZZZ is decimals of the foot. For fathoms and feet between 0 and 10 fathoms 4.5 feet (10.75 fms), soundings round to the deeper foot if the decimals of the foot are `X.Y75000` or greater. For fathoms and feet deeper or equal to 11 fathoms, soundings round to the deeper fathom if feet and decimals of the foot are `X.45000` (`X.Y75000`) or greater. Drying heights are in feet and are rounded using arithmetic methods. In an ENC viewer, heights greater than 6 feet will register in fathoms and feet using the above stated rules.

#### S-57 Composer Units

Sounding Units: Meters rounded to the nearest millimeter

Spot Height Units: Meters rounded to the nearest meter

#### Chart Unit Base Cell Units

Depth Units (DUNI): Fathoms and feet

Height Units (HUNI): Feet (or fathoms and feet above 6 feet)

Positional Units (PUNI): Meters

### **9. Data Processing Notes**

#### **9.1 Junctions**

H11688 junctions to the south with survey H11577 and to the west with survey H11692. H11577 has been compiled and the junction with this survey has been made. The junction with survey H11692 will be made when it is compiled.

### **10. QA/QC and ENC Validation Checks**

H11688 was subjected to QA checks in S-57 Composer prior to exporting to the HCell base cell (000) file. The millimeter precision metric S-57 HCell was converted to a chart units and NOAA rounding applied. dKart Inspector was then used to further check the data set for conformity with the S-58 ver. 2 standard (formerly Appendix B.1 Annex C of the S-57 standard). All tests were run and warnings and errors investigated and corrected unless they have been approved by MCD as inherent to and acceptable for HCells.

### **11. Products**

#### **11.1 HSD, MCD and CGTP Deliverables**

- H11688 Base Cell File, Chart Units, Soundings compiled to 1:40,000.
- H11688 Base Cell File, Chart Units, Soundings compiled to 1:7,500

- H11688 Descriptive Report including end notes compiled during office processing and certification, the HCell Report, and supplemental items
- H11688 Survey Outline to populate SURDEX

### 11.2 File Naming Conventions

- Chart units base cell file, chart scale soundings H11688\_CS.000
- Chart units base cell file, survey scale soundings H11688\_SS.000
- Descriptive Report package H11688\_DR.pdf
- Survey outline H11688\_Outline.gml & \*.xsd

### 11.3 Software

CARIS HIPS Ver. 6.1	Inspection of Combined BASE Surfaces
CARIS BASE Editor Ver. 2.2	Creation of soundings and bathy-derived features, creation of the depth area, meta area objects, and Blue Notes; Survey evaluation and verification; Initial HCell assembly.
CARIS S-57 Composer Ver. 2.0	Final compilation of the HCell, correct geometry and build topology, apply final attributes, export the HCell, and QA.
CARIS GIS 4.4a	Setting the sounding rounding variable for conversion of the metric HCell to NOAA charting units with NOAA rounding.
CARIS HOM Ver. 3.3	Perform conversion of the metric HCell to NOAA charting units with NOAA rounding.
HydroService AS, dKart Inspector Ver. 5.1	Validation of the base cell file.
Newport Systems, Inc., Fugawi View ENC Ver.1.0.0.3	Independent inspection of final HCells using a COTS viewer.

### 12. Contacts

Inquiries regarding this HCell content or construction should be directed to:

Kurt Brown, Physical Scientist, PHB, Seattle, WA; 206-526-6839;  
[Kurt.Brown@noaa.gov](mailto:Kurt.Brown@noaa.gov).



APPROVAL SHEET  
H11688

Initial Approvals:

The survey evaluation and verification has been conducted according to branch processing procedures and the HCell compiled per the latest OCS H-Cell Specifications.

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, S-57 classification and attribution of soundings and features, cartographic characterization, and verification or disproof of charted data within the survey limits. The survey records and digital data comply with OCS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

I have reviewed the HCell, accompanying data, and reports. This survey and accompanying digital data meet or exceed OCS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.