

H11338

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.* ..... **RA-10-09-04**

*Registry No.* ..... **H11338**

### LOCALITY

*State* ..... **Alaska**

*General Locality* ..... **Kodiak**

*Sublocality* ..... **Sitkalidak Strait**  
**West of Kofing Bay**  
2004

**CHIEF OF PARTY**  
..... **CDR John W. Humphrey, NOAA**

### LIBRARY & ARCHIVES

**DATE** .....

**HYDROGRAPHIC TITLE SHEET**

**H-11338**

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-10-09-04**

State Alaska

General Locality Kodiak

Sublocality Sitkalidak Strait West of Rolling Bay

Scale 1:10,000

Date of Survey 6/16/04-6/17/04

Instructions Dated May 12, 2004

Project No. S-P908-RA-04

Vessel RAINIER LAUNCHES RA3 (1021), RA4 (1016),  
and RA5 (1006)

Chief of Party Commander John W. Humphrey, NOAA

Surveyed by RAINIER Personnel

Soundings taken by echo sounder ELAC 1180 (RA4),  
RESON 8125 (RA4), RESON 8101 (RA3 & RA5)

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by K. Toepfer

Automated plot by: N/A

Verification by K. Toepfer

Soundings in Fathoms and feet at MLLW

REMARKS: Time in UTC. Revisions and endnotes were  
generated during office processing. All separates  
are filed with the project data.

All depths listed in this report are referenced to  
mean lower low water unless otherwise noted.

# Descriptive Report to Accompany Hydrographic Survey H11338

Project S-P908-RA-04  
Sitkalidak Shoal Investigation  
Scale 1:10,000  
June 2004

**NOAA Ship RAINIER**

Chief of Party: Commander John W. Humphrey, NOAA

## A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions S-P908-RA-04, dated May 12, 2004, Standing Project Instructions dated March 23, 2004, and NOS Hydrographic Specifications and Deliverables dated March 2003.<sup>1</sup> The survey area is Sitkalidak Strait west of Rolling Bay, Kodiak, Alaska. This survey corresponds to regions one and two of sheet “A” (see figure 1)<sup>2</sup> in the sheet layout provided with the Letter Instructions.

One hundred percent shallow-water multibeam (SWMB) coverage was obtained in regions A1 and A2 of the survey area.<sup>3</sup>

Data acquisition was conducted from June 16-17, 2004 (DN 168 and 169).

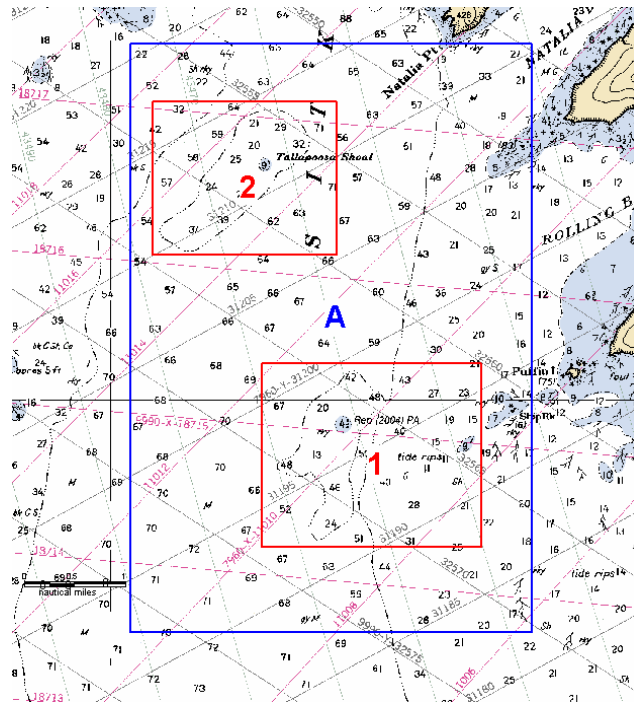


Figure 1. H11338 Survey Limits (Chart #16592)

## **B. 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-N372-RA-04 *Data Acquisition and Processing Report (DAPR)*, submitted under separate cover. Project OPR-N372-RA-04 was conducted in the Approaches to Puget Sound during April 2004. The same vessels and vessel configurations were used in OPR-N372-RA-04 as were used in S-P908-RA04.<sup>4</sup> Items specific to this survey are discussed in the following sections.

### **B1. Equipment and Vessels**

Data were acquired by the RAINIER survey launches RA3 (1021) RA4 (1016), RA5 (1006). Vessels RA3 (1021), RA4 (1016), & RA5 (1006) were used to acquire shallow-water multibeam (SWMB) soundings and sound velocity profiles.<sup>5</sup>

No unusual vessel configurations were used for data acquisition.

### **B2. Quality Control**

#### **Crosslines**

Shallow-Water Multibeam (SWMB) crosslines (XL) totaled 12.71 nautical miles, comprising 11.4% of SWMB hydrography. The mainscheme bathymetry was manually compared to the XL nadir beams in CARIS subset mode and agreed well with no significant differences noted.

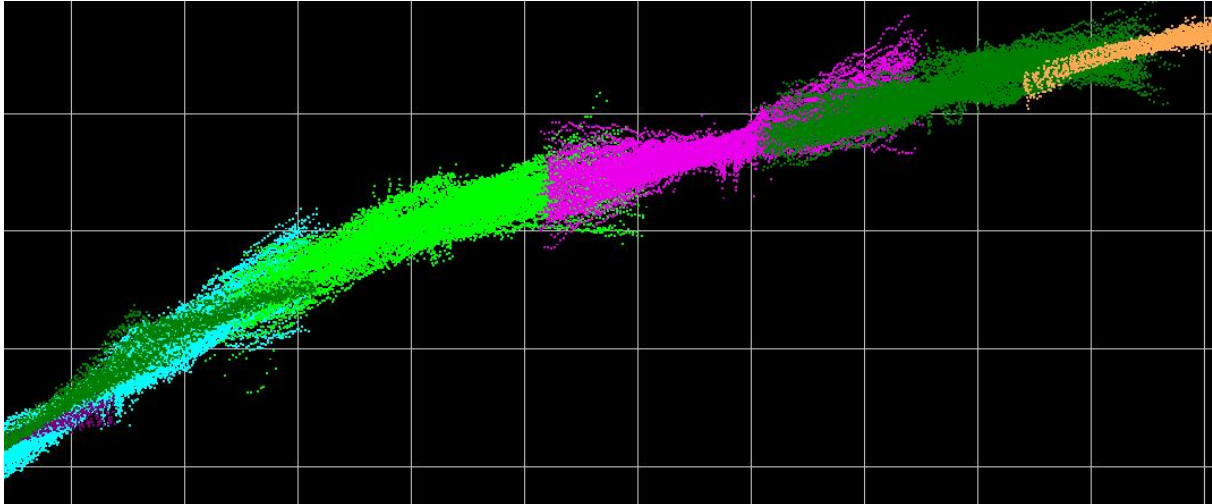
A thorough manual examination of the complete data set has been made, and a statistical analysis reveals that the data accuracy standards for IHO Order 1 for this survey have not been met; 80.95% passed for Elac and 75.48% for Reson. However, problematic data have been addressed and are discussed in the Data Quality Factors section of this report.<sup>6</sup>

#### **Junctions**

No contemporary surveys junction with H11338.<sup>7</sup>

#### **Data Quality Factors**

Data collected on 17-June-2004 (DN 169) in the western section of Region One of the survey near Ship Rock and Puffin Island (see Figure 1) with the Reson 8125 system exhibited greater depth ranges at the outer beams than at nadir, forming bowtie-like shapes. The following screenshot is an illustrative sample of such data taken while editing in CARIS HIPS subset mode.



*Figure 2. “Bow Tie” spread of outer beams exhibited by Reson 8125 data*

The problem is thought to be the result of either abnormal sound velocity being applied at the face of the transducer during beam steering, or a latency between the sonar and the IMU. A “Nearest-in-Distance” sound velocity profile (SVP) correction was applied, attempting to correct the problem, but a “Previous-in-Time” SVP correction was later reapplied after no change in the data was noticed. The Dynamic Error Residual that is apparent in the digital terrain model for H11338 is described by Hughes Clarke in Lecture 26 of the 32<sup>nd</sup> UNB OMG/UNH Multibeam Sonar Training Course. Ultimately, the outer beams beyond 50 degrees on both port and starboard were removed using a filter, and the remaining “bow-ties” trimmed manually in subset mode; the resulting data meets accuracy standards defined by the NOS Specifications and Deliverables.<sup>8</sup> Hydrographic Systems Technology Program (HSTP) was informed of this issue on 27-June, 2004 in an email correspondence (see [Supplemental Correspondence](#), Appendix V).

The data collected by RA3 (1021) on 17-June-2004 (DN 169) exhibited characteristic “frowns” indicating inaccurate sound velocity correction. A “Nearest-in-Distance” SVP was applied, which seemed to correct the problem.<sup>9</sup> The following is a screen-grab of the respective data before “Nearest-in-Distance” SVP was applied.

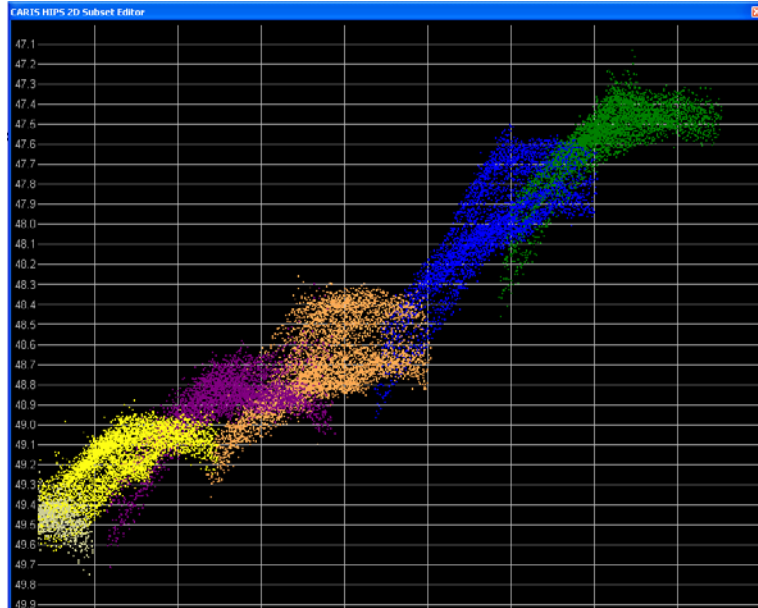


Figure 3. Characteristic sound velocity “frowns” exhibited by RA3 (1021) on DN169

### B3. Data Reduction

Data reduction procedures for survey H11338 conform to those detailed in the OPR-N372-RA-04 DAPR.<sup>10</sup>

## C. VERTICAL AND HORIZONTAL CONTROL

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).<sup>11</sup> Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacon at Kodiak (313 kHz) were utilized during this survey. Launch-to-launch performance checks were not accomplished due to Kodiak DGPS beacon being the only available beacon for this area.

### 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 Kodiak, AK (945-7292) served as control for datum determination and as the primary source for water level reducers for survey H11338.

No tertiary gauges were required.

All data were reduced to MLLW using unverified observed tides from station Kodiak, AK

using the tide file 9457292.tid and time and height correctors using the zone corrector file P908RA2004CORP.zdf.

The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing. A request for delivery of final approved (smooth) tides for survey H11338 will be forwarded to N/OPS1. A copy of the request is included in Appendix IV.<sup>12</sup>

## **D. RESULTS AND RECOMMENDATIONS**

### **D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations**

A total of two (2) AWOIS items were located within the limits of H11338 and investigated during this survey. Investigation methods and results have been entered into Pydro and are submitted with the digital data.<sup>13</sup> A Printout of the AWOIS Report, H11338\_AWOIS\_Report.pdf is included in Appendix VI of this report.

### **D.2 Chart Comparison**

Survey H11338 was compared with the following charts:  
16592 (9<sup>th</sup> Ed., September 1, 1990, 1:80,728, corrected through NTM 18/04)<sup>14</sup>

#### **Chart 16592<sup>15</sup>**

Depths from survey H11338 were in agreement with charted soundings within one fathom in most areas. However, shoaler soundings were found in and around the AWOIS radii and around the nine-fathom sounding SW of Ship Rock (56° 59' 32.87'' N, 153° 23' 26.22'' W). Conversely, some areas of the survey were found to be deeper than charted. These discrepancies can be attributed to increased bottom coverage using SWMB methods.<sup>16</sup>

The charted nine-fathom shoal area SW of Ship Rock is shoaler than charted, extending NE to the survey limits and SW to the "tide rips". The distance between the shoalest sounding to the NE (eight fathoms, eight feet, in position 56° 59' 44.575" N, 153° 23' 10.823" W) to the shoalest sounding to the SW (nine fathoms, one foot, in position 56° 59' 19.641" N, 153° 24' 15.551" W) is approximately three-quarters of a nautical mile, whereas the charted area is less than a quarter of a nautical mile.<sup>17</sup>

The charted soundings inside the 50-fathom contour containing the charted 4.5-fathom shoal (56° 59' 40.812" N, 153° 25' 50.896" W) in region A1 of the sheet are generally shoaler than charted, especially to the south of the 4.5-fathom reported charted sounding. The area in the vicinity of the charted 24-fathom sounding was surveyed to a depth of 18 fathoms, two feet (56° 58' 46.317" N, 153° 25' 57.734" W).<sup>18</sup>

The area covering the charted 66-fathom sounding (56° 59' 05.718" N, 153° 27' 18.333" W) on the lower southern side of region A1 is generally greater than 70 fathoms.<sup>19</sup>

Data accuracy standards and bottom coverage requirements have been met and survey data are adequate to supersede charted data in their common areas.<sup>20</sup> The hydrographer recommends further survey in this area.<sup>21</sup>

### **D.3 Shoreline**

#### **Shoreline Source**

No shoreline was provided for H11338.<sup>22</sup>

#### **Shoreline Verification**

Shoreline verification was not accomplished during H11338.<sup>23</sup>

#### **Source Shoreline Changes and New Features**

Not applicable.<sup>24</sup>

#### **Charted Features**

Not applicable.<sup>25</sup>

#### **Recommendations**

The hydrographer recommends a full survey in this area.<sup>26</sup>

### **D.4 Dangers to Navigation**

Five dangers to navigation (DTONs) were found and reported to the Marine Chart Division (MCD) for verification and final submission to the Seventeenth Coast Guard District on 23-June-2004 and 29-June-2004 in the form of two digital XML files, "H11338\_DTON.xml" and "H11338\_DTON2". A copy of the preliminary Danger to Navigation file is included with the digital data and a hard copy of the DTON report is included in Appendix I.<sup>27</sup>

### **D.5 Aids to Navigation**

Survey H11338 included no aids to navigation.<sup>28</sup>

### **D.6 Miscellaneous**

Bottom samples were not collected.<sup>29</sup>



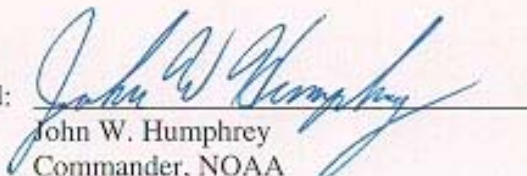
## E. APPROVAL

As Chief of Party, I have ensured that standard field surveying and processing procedures were followed in producing this survey in accordance with the Hydrographic Manual, Fourth Edition, Hydrographic Survey Guidelines, Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2003.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.


Survey H11338 is complete and adequate to supersede charted soundings in their common areas. No additional work is required for this survey.<sup>30</sup>

Approved and Forwarded:

  
John W. Humphrey  
Commander, NOAA  
Commanding Officer

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

Survey Sheet Manager:

  
Briana J. Welton  
Ensign, NOAA

Field Operations Officer:

  
Kevin J. Slover  
Lieutenant, NOAA

### Revisions Compiled During Office Processing and Certification

<sup>1</sup> Concur.

<sup>2</sup> The extents of survey, determined by the minimum bounding rectangles of the two surveyed areas, are as follows:

Area	Northern Limit	Southern Limit	Western Limit	Eastern Limit
A1	57° 00' 28.634" N	56° 58' 27.011" N	153° 27' 29.257" W	153° 23' 03.719" W
A2	57° 03' 04.974" N	57° 01' 21.899" N	153° 29' 24.759" W	153° 25' 33.927" W

<sup>3</sup> Concur.

<sup>4</sup> Concur. See note 10.

<sup>5</sup> Concur

<sup>6</sup> Concur.

<sup>7</sup> Concur.

<sup>8</sup> Concur. Data examined in these areas during office processing confirmed the adequacy of the approach used by the Hydrographer to exclude questionable data.

<sup>9</sup> Concur. Data examined in these areas during office processing confirmed the adequacy of the approach used by the Hydrographer to exclude questionable data.

<sup>10</sup> The data submitted to PHB were processed by Rainier using Caris HIPS (v 5.3) with weighted grids as detailed in the DAPR. Prior to data review and compilation, the standard for processing had become Caris HIPS (v 5.4) using BASE surfaces. Details of the office processing of the data are contained in the H11338 H-Cell Supplemental Report for this survey, appended to this report.

<sup>11</sup> The data were transformed from NAD83 to WGS84 for H-Cell compilation. See the H11338 H-Cell Supplemental Report, Sec. 9.1.

<sup>12</sup> Final approved tides were applied to BASE surfaces on April 4, 2005, using final tide zoning file H11338CORF.zdf. The Approved Tide Note dated January 12, 2005 is attached to this report.

<sup>13</sup> Copies of the AWOIS Investigation forms are attached to this report.

<sup>14</sup> During office processing the survey data and resulting surfaces were compared to the then current chart 16592 (10<sup>th</sup> Ed., December 2004, 1:80,728, corrected through NTM dated 11/26/2005 and local NTM dated 11/15/2005). Prior survey comparisons were not made during office processing.

<sup>15</sup> It is recommended that a 50 fathom contour be added to the chart to junction with the 50 fathom contour compiled to the northwest corner of the northernmost of the two survey areas of the H-Cell.

<sup>16</sup> Concur with clarification. The discrepancies between the present survey depths and the existing charted soundings can be attributed to superior sounding coverage and additional positional accuracy resulting from improved hydrographic and positioning systems and techniques.

<sup>17</sup> Concur.

<sup>18</sup> Concur.

<sup>19</sup> Concur.

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<sup>20</sup> Concur.

<sup>21</sup> Do not concur. This survey fully accomplished the survey objectives for the two “priority” areas specified in the Hydrographic Survey Letter Instructions for S-P908-RA. More complete survey coverage should be scheduled in accordance with the OCS/NOAA Hydrographic Survey Priorities mandate.

<sup>22</sup> Concur. The survey area consists entirely of two areas lying more than 1.5 kilometers from the nearest shoreline.

<sup>23</sup> Concur.

<sup>24</sup> Concur. See note 21.

<sup>25</sup> Concur.

<sup>26</sup> Do not concur. See note 20.

<sup>27</sup> No additional DtoNs were discovered during office processing. A copy of the DTON report is attached to this report.

<sup>28</sup> Concur.

<sup>29</sup> Concur.

<sup>30</sup> Concur.

# H11338 H-Cell Supplemental Report

Project S-P908-RA-04  
Sitkalidak Shoal Investigation  
Survey Scale 1:10,000 Chart Compilation Scale 1:80,728  
Cartographer: PS Keith H. Toepfer, PHB

## 1. COMPILATION PURPOSE

The H11338 H-Cell will be used to update raster charts 16592 (1:80,728), 16590 (1:81,529) and 16580 (1:350,000), and should be applied to the ENC when one becomes available.

H-Cell compilation of survey H11338 utilized HSD H-Cell Guidelines 2.0 and OCS H-Cell Specifications Version 1.1 (Mar. 2006). The compilation is based on Chart 16592, 1:80,728 (10<sup>th</sup> Ed.; Dec, 2004, NM dated 11/26/2005, LNM dated 11/15/2005). The Blue Notes shape files explicitly reference three (3) bottom samples digitized as point SBDARE features from chart 16592, five (5) DtoNs brought forward as designated soundings from the CARIS HDCS\_DATA, a text label on Tallapoosa Shoal, a text label (“Tide rips”) SW of Ship Rock, and two (2) text labels with bottom characterization information (“rky”), and that portion of an enclosed fifty fathom depth curve which is missing from the Chart 16592. See Section 5, Survey Features, and Appendix A, Feature Object Guide for more information.

## 2. SOUNDINGS

### 2.1. Source Data

The combined BASE surfaces, **H11338\_S\_Combd** and **H11338\_N\_Combd**, associated with field sheet **H11338\_QA** were used as the basis for H-Cell production following survey product certification. These surfaces were created using survey scale settings of 1:10,000, a buffer radius of 100m and a node spacing of 10m, the latter determined by the node spacing of the lowest resolution constituent BASE surface. The surfaces included designated soundings from the five DtoNs submitted by the vessel, one in the former surface and four in the latter.

Shoal-biased Product Surfaces, named **H11338S\_10\_100\_10\_30** and **H11338N\_10\_100\_10\_30**, were created using survey scale settings of 1:10,000, a buffer radius of 100m and a node spacing of 10m to maintain the resolution of the BASE Surface. These surfaces were also defocused using a horizontal error of 30m to broaden the shoals for contour adjustment.

In order to fill small gaps in the multibeam coverage that were present in the BASE and Product Surfaces, the Product Surfaces were interpolated using a 5 x 5 window (30m x 30m) with a minimum of 6 neighbors, creating the final compilation surfaces

**H11338\_S\_Interp** and **H11339\_N\_Interp**. Filled holiday gaps were no larger than three nodes in width as depicted on the Product Surfaces.

## **2.2. Sounding Selection**

A survey scale depth layer was created by opening both interpolated and defocused surfaces in CARIS BASE Editor, combining the two into one surface, and performing the selection using a radius of 5mm at the survey scale of 1:10,000. The resulting data set was inspected to verify that the designated soundings representing DtoNs were carried forward through the selection, and shoal areas in the data set were inspected to confirm the appropriate bias of the suppression routine.

## **2.3. Sounding Suppression**

The depth values referenced in 2.2, above, were displayed in CARIS BASE Editor, overlaid atop the raster chart and the interpolated BASE surface. Depth values were selected manually from the interpolated surface in order to provide an accurate representation of the bottom and to emulate the distribution and density of soundings on chart 16592.

## **2.4. Sounding Feature Objects**

Chart density SOUNDG feature objects were created from the “Background” and “Selected” sounding spatial objects in HOM. Millimeter depth precision was maintained throughout the process up to and including creation of the chart unit base cell file. NOAA rounding and thresholding, the latter to whole integers at the 11 fathom cutoff, were applied to depth values in order to create the chart unit base cell file deliverables.

# **3. CONTOURS**

## **3.1. Contour Creation**

Contours were created in CARIS BASE Editor from the same defocused and interpolated product surface. Contour values present in chart 16592 were specified in accordance with the metric equivalents taken from OCS H-Cell Specifications 1.1 (Mar. 2006), as shown in the table, below. Contours were assigned to CARIS layer number 200, which was then used in HOM for creation of the Skin of the Earth (SOTE) Group 1 objects.

<b>METERS</b>	<b>FATHOMS</b>
<b>5.715</b>	<b>3</b>
<b>9.373</b>	<b>5</b>
<b>18.517</b>	<b>10</b>
<b>92.812</b>	<b>50</b>
<b>184.252</b>	<b>100</b>

The resulting contours were filtered in HOM using a 0.1 mm vertex tolerance to reduce the number of vertices per line segment.

### **3.2. Contour / Depth Area Feature Objects**

The following series of DRVAL(1,2) values were used in the creation of depth areas to coincide with contours and/or the depth areas depicted on Chart 16592.

5.715m  
9.373m  
18.517m  
92.812m  
184.252m

## **4. AREA META-OBJECTS**

Meta-object areas were created using polygon topology based on the SOTE perimeter and attributed as prescribed in OCS H-Cell Specifications 1.1 (Mar. 2006).

## **5. SURVEY FEATURES**

No DP data were collected for survey H11338.

No bottom samples were collected by the survey vessel. Bottom characteristics in the H-Cell were digitized from chart 16592.

## **6. SHORELINE/TIDE DELINEATIONS**

No shoreline features, including Mean Lower Low Water (MLLW) or Mean High Water (MHW) lines were included in the H-Cell 11338.

## **7. ATTRIBUTION**

All S-57 Feature Objects have been attributed in accordance with OCS H-Cell Specifications 1.1 (Mar. 2006).

## **8. LAYOUT**

### **8.1. Layer Numbers**

CARIS HOM Layer Structure fro H11338\_HC

<b>Layer</b>	<b>Spatial Object Description</b>	<b>S-57 Feature Object</b>
100	Chart density soundings	SOUNDG
200 <b>SOTE</b>	Depth Areas Depth Contours	DEPARE DEPCNT
300	Bottom Samples	SBDARE
600	Survey Perimeter, Bounding Box	M_QUAL, M_COVR, M_NSYS
800, 801	Blue Notes—Dtons, retained bottom characterizations, and surface current notation, respectively.	

CARIS HOM Layer Structure for H11338\_Z\_only

<b>Layer</b>	<b>Spatial Object Description</b>	<b>S-57 Feature Object</b>
100	Chart density soundings selected using spacing of 5mm at the survey scale of 1:10,000	SOUNDG
200	Contours	DEPCNT
950	Depth area perimeters	DEPARE
960	Survey Perimeter	M_COVR

## 8.2. Blue Notes

Notes to the MCD chart compilers are provided as individual Shapefile sets **h11338bluenotes\_p** and **h11338bluenotes\_l**.

## 9. SPATIAL FRAMEWORK

### 9.1 Coordinate System

All CARIS 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.

## 9.2 Horizontal and Vertical Units

### HOM 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
Positional Units (PUNI):	Meters

## 10. QA/QC

### 10.1. ENC Validation Checks

H11338\_HC was subjected to QA and Validation checks in CARIS HOM prior to altering the VALDCO and DRVAL attributes, as required to meet OCS H-Cell Specifications 1.1 (Mar. 2006). Full millimeter precision was retained in the export of the metric S-57 base cell data set (000 file). This data set was then converted to a chart unit 000 file. dKart Inspector 5.0 was then used to check the data set more fully for conformity using the S-58 ver.2 standard (formerly Appendix B.1 Annex C of the S-57 standard). All tests were run and errors investigated and corrected where necessary.

## 11. PRODUCTS

### 11.1. MCD Deliverables

- MCD Chart Units Base Cell File, 1:80,728.
- MCD Chart Units Base Cell File - survey scale density, soundings only, 1: 80,728.
- Descriptive Report with endnotes from cartographic review, H-Cell Supplemental Report appended.
- Blue Notes shapefiles.

### 11.2 File Naming Conventions

MCD Chart units base cell file: *US4<registry\_num>\_CU.000*

MCD Chart units base cell soundings file: *US4<registry\_num>\_SS.000*



### **11.3 Software**

CARIS HIPS 5.4:	Management and creation of BASE Surfaces
CARIS HIPS 6.0:	Management and creation of Product Surfaces
CARIS BASE Editor 1.0:	Combination of non-contiguous Product Surfaces and creation of the sounding layer and contours
CARIS HOM 3.3:	Creation of the H-Cell, S-57 products, QA
CARIS GIS 4.4a:	Setting the sounding rounding variable
HydroService dKart Inspector 5.0:	Validation of the base cell file

### **12. CONTACTS**

Inquiries regarding this H-Cell content or construction should be directed to:

Keith Toepfer, Physical Scientist, Production Team, PHB, Seattle, WA; 206-526-6877;  
[keith.toepfer@noaa.gov](mailto:keith.toepfer@noaa.gov).

# AWOIS Report

**Registry Number:** H11338  
**State:** AK  
**Locality:** Kodiak Island  
**Sub-locality:** Sitkalidak Strait west of Rolling Bay  
**Project Number:** S-P908-RA-04  
**Survey Date:** 06/16/2004

## Charts Affected

Number	Version	Date	Scale
16592	9th Ed.	09/01/90	1:80728
16590	10th Ed.	07/01/02	1:81529
16580	12th Ed.	11/01/03	1:350000
16013	29th Ed.	11/01/03	1:969761
531	21st Ed.	02/02/02	1:2100000
500	8th Ed.	06/01/03	1:3500000
530	30th Ed.	03/23/02	1:4860700
50	6th Ed.	06/01/03	1:10000000

## Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS	8.60 m	056° 59' 40.812" N	153° 25' 50.896" W	---
1.2	AWOIS	13.51 m	057° 02' 20.053" N	153° 27' 11.784" W	---

## **1 - AWOIS Report**

## 1.1) AWOIS 53119 from database H11338\_AWOIS.mdb

### DANGER TO NAVIGATION

#### Primary Survey Feature is Profile/Beam - 997/24 from h11338 / 1006\_reson8101 / 2004-168 / 055\_2225

**Search Position:** 56.99583333, -153.42866667

**Historical Depth:** [None]

**Search Radius:** 150

**Search Technique:** MB, ES

**Technique Notes:** [None]

#### History Notes:

CL 429/04, 04/02/2004; REPORTS A 4.5 FATHOM SHOAL PA IN LAT. 56/59/45 N, LON. 153/25/43.2 W (NAD83). SHOAL REPORTED BY THE NOAA SHIP MILLER FREEMAN.

### Survey Summary

**Survey Position:** 056° 59' 40.812" N, 153° 25' 50.896" W

**Least Depth:** 8.60 m

**Timestamp:** 2004-168.22:29:56.533 (06/16/2004)

**Survey Line:** h11338 / 1006\_reson8101 / 2004-168 / 055\_2225

**Profile/Beam:** 997/24

**Charts Affected:** 16592\_1, 16580\_1, 16013\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

4.70 Fathom Shoal Sounding (8.60 meters), AWOIS# 53119

INVESTIGATION SUMMARY: The shoal sounding was verified with 100% SWMB. The least depth of 4.70 fathoms (8.60 meters) was obtained with tide correctors applied during the investigation.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11338/1006_reson8101/2004-168/055_2225	997/24	0.00	000.0	Primary
H11338_AWOIS.mdb	AWOIS # 53119	183.22	225.0	Secondary

## Hydrographer Recommendations

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

4 ¾fm (16592\_1, 16580\_1, 16013\_1, 530\_1)

4fm 4ft (531\_1)

8.6m (500\_1, 50\_1)

## 1.2) AWOIS 53123 from database H11338\_AWOIS.mdb

### DANGER TO NAVIGATION

#### Primary Survey Feature is Profile/Beam - 184/223 from h11338 / 1016\_reson8125 / 2004-168 / 131\_2323

**Search Position:** 57.03930556, -153.45258333  
**Historical Depth:** 16.46 m  
**Search Radius:** 150  
**Search Technique:** ES,S2,MB  
**Technique Notes:** [None]

#### History Notes:

H05182/31--SURVEY REPORTS A SHOAL WITH LEAST DEPTH OF 9 FATHOMS.

### Survey Summary

**Survey Position:** 057° 02' 20.053" N, 153° 27' 11.784" W  
**Least Depth:** 13.51 m  
**Timestamp:** 2004-168.23:24:47.542 (06/16/2004)  
**Survey Line:** h11338 / 1016\_reson8125 / 2004-168 / 131\_2323  
**Profile/Beam:** 184/223  
**Charts Affected:** 16592\_1, 16590\_1, 16580\_1, 16013\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

7.39 Fathom Shoal Sounding (13.51 meters), AWOIS# 53123

INVESTIGATION SUMMARY: The shoal sounding was verified with 100% SWMB. The least depth of 7.39 fathoms (13.51 meters) was obtained with tide correctors applied during the investigation.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11338/1016_reson8125/2004-168/131_2323	184/223	0.00	000.0	Primary
H11338_AWOIS.mdb	AWOIS # 53123	61.26	223.1	Secondary

## Hydrographer Recommendations

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

7 ¼fm (16592\_1, 16590\_1, 16580\_1, 16013\_1, 530\_1)

7fm 2ft (531\_1)

13.5m (500\_1, 50\_1)

# H11338 DTON Report

**Registry Number:** H11338  
**State:** AK  
**Locality:** Kodiak Island  
**Sub-locality:** Sitkalidak  
**Project Number:** S-P908-RA-04  
**Survey Date:** 06/17/2004

## Charts Affected

Number	Version	Date	Scale
16592	9th Ed.	09/01/1990	1:80728
16580	12th Ed.	11/01/2003	1:350000
16013	29th Ed.	11/01/2003	1:969761
531	22nd Ed.	03/01/2004	1:2100000
500	8th Ed.	06/01/2003	1:3500000
530	30th Ed.	03/23/2002	1:4860700
50	6th Ed.	06/01/2003	1:10000000

## Features

Feature Type	Survey Depth	Survey Latitude	Survey Longitude
Shoal	8.50 m	056° 59' 25.422" N	153° 23' 47.212" W
Shoal	13.77 m	056° 59' 24.646" N	153° 24' 05.768" W



## **1 - Danger To Navigation**

**1.1) Profile/Beam - 1522/96 from h11338 / 1021\_reson8101 / 2004-169 / 037\_1935**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 056° 59' 25.422" N, 153° 23' 47.212" W  
**Least Depth:** 8.50 m  
**Timestamp:** 2004-169.19:48:35.932 (06/17/2004)  
**Survey Line:** h11338 / 1021\_reson8101 / 2004-169 / 037\_1935  
**Profile/Beam:** 1522/96  
**Charts Affected:** 16592\_1, 16580\_1, 16013\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**

4.65 Fathom Shoal Sounding (8.50 meters)

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11338/1021_reson8101/2004-169/037_1935	1522/96	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

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

- 4 ½fm (16592\_1, 16580\_1, 16013\_1, 530\_1)
- 4fm 4ft (531\_1)
- 8.5m (500\_1, 50\_1)

## 1.2) Profile/Beam - 83/18 from h11338 / 1021\_reson8101 / 2004-169 / 056\_2038

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 056° 59' 24.646" N, 153° 24' 05.768" W  
**Least Depth:** 13.77 m  
**Timestamp:** 2004-169.20:38:40.765 (06/17/2004)  
**Survey Line:** h11338 / 1021\_reson8101 / 2004-169 / 056\_2038  
**Profile/Beam:** 83/18  
**Charts Affected:** 16592\_1, 16580\_1, 16013\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**

[None]

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11338/1021_reson8101/2004-169/056_2038	83/18	0.00	000.0	Primary

#### Hydrographer Recommendations

[None]

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

7 ½fm (16592\_1, 16580\_1, 16013\_1, 530\_1)

7fm 3ft (531\_1)

13.7m (500\_1, 50\_1)

# H11338 DTON Report

**Registry Number:** H11338  
**State:** AK  
**Locality:** Kodiak Island  
**Sub-locality:** Sitkalidak Strait west of Rolling Bay  
**Project Number:** S-P908-RA-04  
**Survey Date:** 06/16/2004

## Charts Affected

Number	Version	Date	Scale
16592	9th Ed.	09/01/90	1:80728
16590	10th Ed.	07/01/02	1:81529
16580	12th Ed.	11/01/03	1:350000
16013	29th Ed.	11/01/03	1:969761
531	21st Ed.	02/02/02	1:2100000
500	8th Ed.	06/01/03	1:3500000
530	30th Ed.	03/23/02	1:4860700
50	6th Ed.	06/01/03	1:10000000

## Features

Feature Type	Survey Depth	Survey Latitude	Survey Longitude
Shoal	8.53 m	056° 59' 40.812" N	153° 25' 50.896" W
Shoal	7.15 m	056° 59' 33.336" N	153° 23' 29.679" W
Shoal	13.26 m	057° 02' 20.053" N	153° 27' 11.784" W

## **1 - Danger To Navigation**

**1.1) Profile/Beam - 997/24 from h11338 / 1006\_reson8101 / 2004-168 / 055\_2225**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 056° 59' 40.812" N, 153° 25' 50.896" W  
**Least Depth:** 8.53 m  
**Timestamp:** 2004-168.22:29:56.533 (06/16/2004)  
**Survey Line:** h11338 / 1006\_reson8101 / 2004-168 / 055\_2225  
**Profile/Beam:** 997/24  
**Charts Affected:** 16592\_1, 16580\_1, 16013\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**  
 Shoal Sounding

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11338/1006_reson8101/2004-168/055_2225	997/24	0.00	000.0	Primary

**Hydrographer Recommendations**

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

- 4 ½fm (16592\_1, 16580\_1, 16013\_1, 530\_1)
- 4fm 4ft (531\_1)
- 8.5m (500\_1, 50\_1)

**1.2) Profile/Beam - 128/1 from h11338 / 1016\_reson8125 / 2004-168 / 121\_2239**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 056° 59' 33.336" N, 153° 23' 29.679" W  
**Least Depth:** 7.15 m  
**Timestamp:** 2004-168.22:40:12.866 (06/16/2004)  
**Survey Line:** h11338 / 1016\_reson8125 / 2004-168 / 121\_2239  
**Profile/Beam:** 128/1  
**Charts Affected:** 16592\_1, 16580\_1, 16013\_1, 531\_1, 500\_1, 530\_1, 50\_1

**Remarks:**  
 Shoal Sounding

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11338/1016_reson8125/2004-168/121_2239	128/1	0.00	000.0	Primary

**Hydrographer Recommendations**

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

3 ¾fm (16592\_1, 16580\_1, 16013\_1, 530\_1)  
 3fm 5ft (531\_1)  
 7.1m (500\_1, 50\_1)

### 1.3) Profile/Beam - 184/223 from h11338 / 1016\_reson8125 / 2004-168 / 131\_2323

## DANGER TO NAVIGATION

### Survey Summary

**Survey Position:** 057° 02' 20.053" N, 153° 27' 11.784" W  
**Least Depth:** 13.26 m  
**Timestamp:** 2004-168.23:24:47.542 (06/16/2004)  
**Survey Line:** h11338 / 1016\_reson8125 / 2004-168 / 131\_2323  
**Profile/Beam:** 184/223  
**Charts Affected:** 16592\_1, 16590\_1, 16580\_1, 16013\_1, 531\_1, 500\_1, 530\_1, 50\_1

#### Remarks:

Shoal Sounding

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11338/1016_reson8125/2004-168/131_2323	184/223	0.00	000.0	Primary

### Hydrographer Recommendations

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

7 ¼fm (16592\_1, 16590\_1, 16580\_1, 16013\_1, 530\_1)

7fm 1ft (531\_1)

13.2m (500\_1, 50\_1)



## **H-11338 Dangers to Navigation**

No Dangers to Navigation were discovered during office processing for this survey.



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: January 12, 2005

HYDROGRAPHIC BRANCH: Pacific  
HYDROGRAPHIC PROJECT: S-P908-RA-2004  
HYDROGRAPHIC SHEET: H11338

LOCALITY: Sitkalidak Strait, Kodiak Island, AK  
TIME PERIOD: June 16-17, 2004

TIDE STATION USED: 945-7292 Kodiak, Alaska  
Lat. 57° 43.9'N Lon. 152° 30.7'W  
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.400 meters

REMARKS: RECOMMENDED ZONING  
Use zone(s) identified as: SWA123, SWA123A, & SWA124.

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).

*Thomas V. Yero* 5/2/05  
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CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

### Final tide zone node point locations for S-P908-RA-2004, H11338

Format: Tide Station (in recommended order of use)  
 Average Time Correction (in minutes)  
 Range Correction  
 Longitude in decimal degrees (negative value denotes Longitude West),  
 Latitude in decimal degrees

	Tide Station Order	AVG Time Correction	Range Correction
Zone SWA123	945-7292	-18	1.00
-153.555062 56.995761			
-153.675487 56.991182			
-153.737736 57.005598			
-153.582572 57.039999			
-153.495973 57.038716			
-153.409837 57.030889			
-153.335448 57.014517			
-153.280756 57.005604			
-153.18064 56.964789			
-153.134028 56.899664			
-153.165103 56.767174			
-153.20593 56.656938			
-153.332827 56.743392			
-153.325655 56.798446			
-153.369921 56.891931			
-153.43308 56.950185			
-153.555062 56.995761			
Zone SWA123A	945-7292	-18	0.97
-153.254835 57.138022			
-153.38189 57.108703			
-153.45428 57.114163			
-153.4937 57.101683			
-153.683411 57.122042			
-153.791976 57.055696			
-153.737736 57.005598			
-153.582572 57.039999			
-153.495973 57.038716			
-153.409837 57.030889			
-153.335448 57.014517			
-153.280756 57.005604			
-153.254835 57.138022			
Zone SWA124	945-7292	-18	1.02
-153.72174 56.909686			

-153.649348 56.926662  
-153.601586 56.934314  
-153.555062 56.995761  
-153.43308 56.950185  
-153.369921 56.891931  
-153.325655 56.798446  
-153.332827 56.743392  
-153.46928 56.505317  
-153.494314 56.48468  
-153.627024 56.609406  
-153.680895 56.665959  
-153.67 56.69094  
-153.661389 56.780792  
-153.692885 56.87334  
-153.72174 56.909686



APPROVAL SHEET  
H-11338

Initial Approvals:

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 H-Cell, 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.