

H11403

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. H-11403

LOCALITY

State Alaska

General Locality Ernest Sound Eastern Passage

Sublocality Northern Entrance to Eastern Passage

2005

CHIEF OF PARTY

..... CDR John E. Lowell Jr, NOAA

LIBRARY & ARCHIVES

DATE

HYDROGRAPHIC TITLE SHEET

H11403

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.

State Alaska

General Locality Ernest Sound Eastern Passage

Sublocality Northern Entrance to Eastern Passage

Scale 1:10,000

Date of Survey April 5 to 20, 2005

Instructions Date 1/4/2005

Project No. OPR-O119-FA-05

Vessel LAUNCHES 1010, 1018, MonArk 1706, Ambar 1803 and Zodiac 2301

Chief of Party CDR John E. Lowell Jr, NOAA

Surveyed by SST Abrams, CST Morgan, Lt Wetzler

Soundings taken by echo sounder Reson 8101 ER

Graphic record scaled by _____

Graphic record checked by _____

Evaluation by Russ Davies

Automated plot by HP Designjet 1050C

Verification by Kurt Brown, Russ Davies

Soundings in Fathoms and tenths

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.

The UTM zone on the original Title Sheet was found to be incorrect. This Title Sheet has been updated with the correct UTM zone.

Kate J. Reser Katie Reser
2008.12.05
14:04:47 -08'00'

Descriptive Report to Accompany Hydrographic Survey H11403

Project OPR-O119-FA
Eastern Passage, Alaska
Scale 1:10,000
April 2005

NOAA Ship FAIRWEATHER

Chief of Party: Commander John E. Lowell, Jr., NOAA

A. AREA SURVEYED

The survey area was located in Ernest Sound and Eastern Passage, within the sub-locality of the Northern Entrance to Eastern Passage. This survey corresponds to Sheet A in the sheet layout provided with the Letter Instructions, as shown in Figure 1 below.

Data acquisition was conducted from April 5 to 20, 2005 (DN 095 to DN 110).

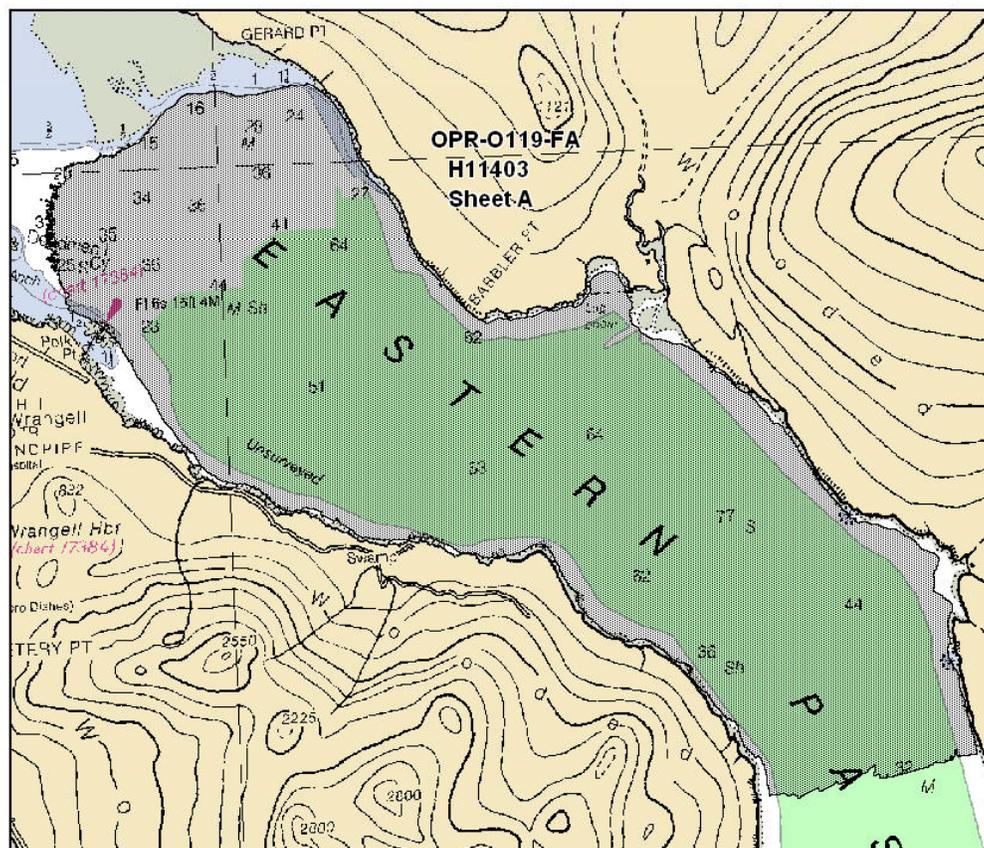


Figure 1: H11403 Survey Outline

One hundred percent multibeam echosounder (MBES) coverage was obtained in the survey area to at least depths of eight meters where feasible and often shoaler. Data were acquired as close to shore as safely possible. Additional coverage was obtained in order to determine least depths over features or shoals.

Shoreline data were acquired for H11403. These data were attributed as S-57 objects for submittal.

B. DATA ACQUISITION AND PROCESSING

A complete description of data acquisition and processing systems and survey vessels can be found in the *NOAA Ship FAIRWEATHER Hydrographic Systems Certification Report 2005*, submitted under a separate cover.¹ Quality control procedures and data processing methods are listed and described in the *OPR-O119-FA-05 Data Acquisition and Processing Report (DAPR)*, submitted under separate cover.² Items specific to this survey and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Equipment and vessels used for data acquisition and survey operations during this survey are listed below in Table 1.

	Launch 1010	Launch 1018	MonArk	Ambar 550	Fast Rescue Boat
Hull Registration Number	1010	1018	1706	1803	2301
Builder	The Boat Yard, Inc.	The Boat Yard, Inc.	MonArk	Ambar Silverships, Inc.	Zodiac of N. America
Length Overall	28' 10"	28' 10"	17'	18'	23'
Beam	10' 8"	10' 8"	7'	8'6"	8' 6"
Draft, Maximum	4' 0" DWL	4' 0" DWL	1' 3"	1'5"	1' 5"
Cruising Speed	24 knots	24 knots	20 knots	20 knots	20 knots
Max Survey Speed	10 knots	10 knots			
Primary Echosounder	RESON 8101	RESON 8101			
Sound Velocity Equipment	SBE 19plus	SBE19plus			
Attitude & Positioning Equipment	POS/MV V3	POS/MV V3			
Type of operations	MBES	MBES, Tides, BS, Shoreline	Tides	HORCON	Tides

Table 1: Vessel Inventory

No vessel configurations used during data acquisition deviated from the DAPR.

B2. Quality Control

Internal consistency and integrity of data collected for survey H11403 were manually examined by the Hydrographer in CARIS subset mode. The internal consistency and integrity of data collected for survey H11403 were found to be very good except where roll bias existed in over 100 meters.

Crosslines

Shallow water multibeam crosslines for this survey totaled 14.07 linear nautical miles (lnm), comprising 9.4% of the 150.07 lnm of total SWMB hydrography.

The Hydrographer has determined, through manual examination of the data, that the filtered crossline agreement of with main scheme data meet the requirements as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*. Small discrepancies in greater than 60 meters depth can be attributed to roll bias and svp error.

Junctions

Survey H11403 junctions with H11404, which is Sheet B of the same project. The area of overlap between the sheets was about 500 meters wide. Area surveyed for junction analysis will be reduced on later projects. The data were reviewed in CARIS Subset Editor for consistency and soundings were found to be consistent between the two surveys, meeting the requirements as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*.³

Survey H11403 also junctions with H11053. The area of overlap between sheets was about 300 meters. H11403 preliminary smooth sheet soundings were produced in Pydro from a 2 meter resolution BASE surface and compared in MapInfo with H11053 smooth sheet soundings. H11403 and H11053 data were found to be consistent between the two surveys, meeting the requirements as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*. The exception was the area at the north end of H11403 where H11403 soundings were up to six meters shoaler than H11053 soundings. This is most likely due to the continuing shoaling trend at the mouth of the Stikine River, but may also be due to bottom penetration variation caused by the difference between echosounder system frequencies.⁴

The sheet limits and area of overlap for H11403, H11404, and H11053 are shown in Figure 2.

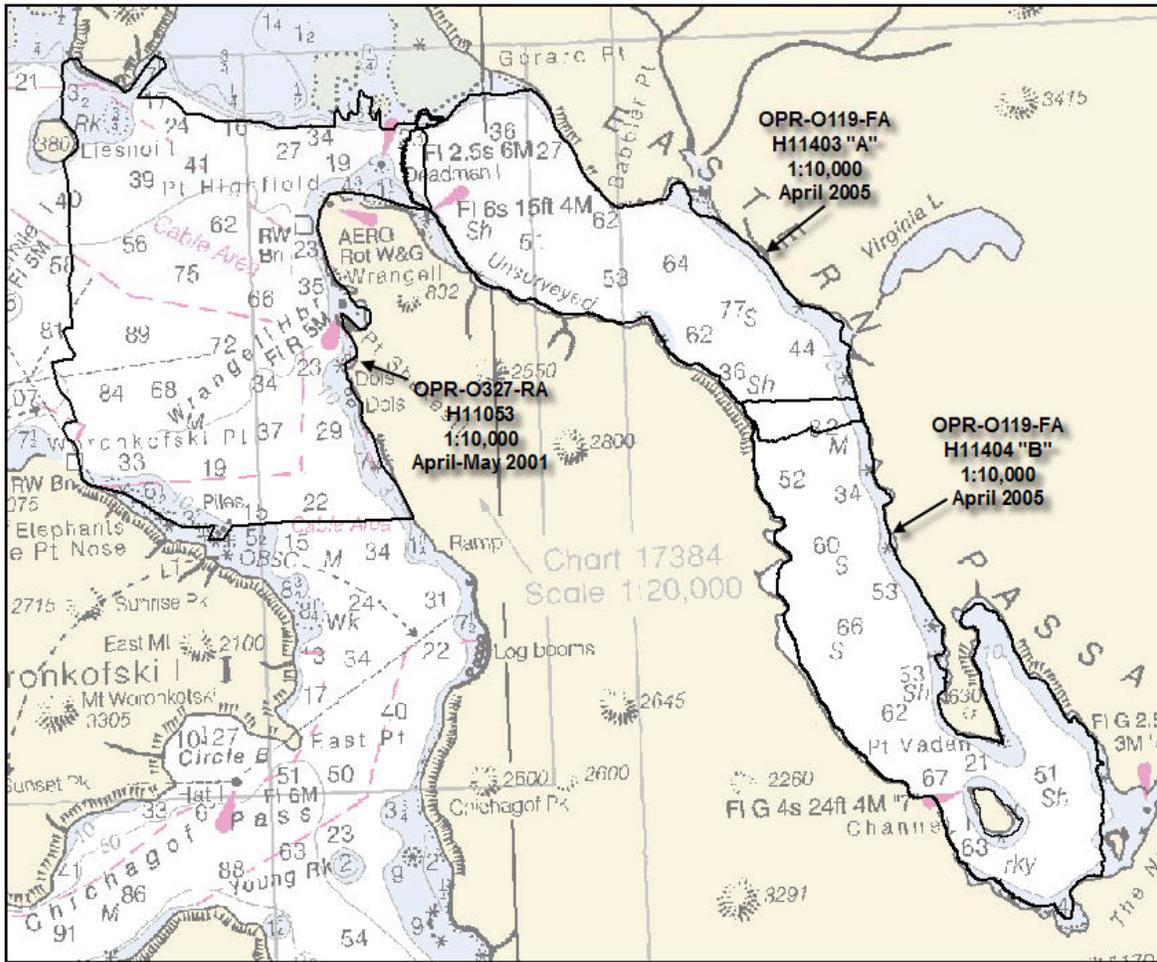


Figure 2: Junction Between H11053, H11403, H11404

Quality Control Checks

MBES quality control checks were conducted as discussed in the quality control section of the *OPR-O119-FA-05 Data Acquisition and Processing Report*.

Data Quality Factors

TRUEHEAVE:

TrueHeave data could not be applied to MBES data from April 8, 2005 (DN 098), as true heave was not collected that day. MBES data quality from that day does not appear to have been affected by the lack of TrueHeave, due to the negligible swell in the protected waters of Eastern Passage. ⁵

SOUND VELOCITY:

There were multiple instances of sound velocity error, most notably in the southern deeper areas of the survey. Data exhibiting sound velocity error were swath filtered 60 degrees port and starboard from nadir. The sound velocity error did not affect data in navigationally significant areas. The data affected by sound velocity error meet the data accuracy specifications for IHO Order 1 stated in the *NOS Hydrographic Surveys Specifications and Deliverables, March 2003*. ⁶

ROLL

A roll bias is evident in launch data from April 5 to 7, 2005 (DN 095 to DN 097). The roll bias is due to the launch 1010 and 1018 sonar mounts having moved over time. This problem and the steps taken to correct it are discussed in the *OPR-O119-FA-05 Data Acquisition and Processing Report*. The problem wasn't discovered until after the dates stated above and the exact roll bias values for these days are unknown.

The error is most evident in the deeper, non-navigationally significant areas of the southern end of the survey. Data exhibiting roll bias were swath filtered 55 or 60 degrees port and starboard from nadir. The data affected by the roll bias meet NOS specifications for vertical accuracy.

Accuracy Standards

All data meet the data accuracy specifications as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*, dated March 2003.⁷

B3. Corrections to Echo Soundings

Data reduction procedures for survey H11403 conform to those detailed in the *OPR-O119-FA-05 Data Acquisition and Processing Report*, with the exceptions as discussed below.

On survey H11403 both Launch 1010 and Launch 1018 experienced mechanical instability with the drop down transducer mounts for the RESON 8101ER's. By conducting frequent patch tests, roll bias issues were minimized and adequately addressed. Refer to the *2005 FAIRWEATHER Systems Certification Report* for further details.

C. HORIZONTAL AND VERTICAL CONTROL

A complete description of horizontal and vertical control for survey H11403 can be found in the *OPR-O119-FA-05 Horizontal and Vertical Control Report*, submitted under separate cover.⁸ 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. Differential corrections from the U.S. Coast Guard beacons at Annette Island (323 kHz), Level Island (295 kHz) and Gustavus (288 kHz) were utilized. DGPS beacons were only switched when the previous beacon signal was lost and data logging had been temporarily halted.

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 Ketchikan, AK (945-0460) served as control for datum determination and as the primary source for water level reducers for survey H11403.

FAIRWEATHER personnel installed two Sutron 8210 “bubbler” tide gauges at the tertiary station listed below. Gauge #12 (S/N 023513) was the main gauge. Gauge #08 (S/N 002330) was installed for training and redundancy purposes. The gauges were installed in order to provide information to Center for Operational Oceanographic Products and Services (CO-OPS N/OPS1) for the determination of time and height correctors, in accordance with the Project Instructions.

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Madan Bay	945-1152	Tertiary 30 Day	March 15, 2005	April 21, 2005

CO-OPS does not provide calibration or quality assurance documentation to the FAIRWEATHER. FAIRWEATHER personnel are responsible for installation and removal of the water level gauges. CO-OPS is responsible for delivering final approved vertical correctors to the processing branch for application to the hydrographic data set.

Refer to the *OPR-O119-FA-05 Horizontal and Vertical Control Report* further information about the tide station.

All data were reduced to MLLW using verified tides, obtained from the CO-OPS website, from station Ketchikan, AK by applying tide file 9450460.tid and time and height correctors through the predicted zone corrector file O119FA2005CORP.zdf.

The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing. ⁹ A request for delivery of final approved (smooth) tides for survey H11403 was forwarded to N/OPS1 on May 3, 2005 in accordance with the Preliminary Field Procedures Manual v1.1, dated March 2005 (FPM). A copy of the request is included in Appendix III. ¹⁰

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

The CARIS HDCS data were brought into Pydro with the Insert HIPS Line Bathy function. The data were then excessed to survey scale (1:10,000) and shoal biased. The affected charts specified in the Letter Instructions were opened in Pydro. The hydrographer manually compared the charted soundings to the shoal biased, excessed soundings in the Chart window.

Using the bathymetric depths inserted in Pydro, survey H11403 was compared with charts 17360 (Etolin Island to Midway Island Including Sumner Strait, 33rd Ed.; September 22, 2001, 1:217,828), 17382 (Zarembo Island and Approaches, 15th Ed.; March 1, 2003 1:80,000), and 17385 (Eastern Passage and Zimovia Strait, 14th Ed.; February 1, 2003, 1:80,000). All charts have been updated with the Notice to Mariners through December 18, 2004. ¹¹

There is a trend of shoaling at the northern end of Eastern Passage at the mouth of the Stikine River. The survey soundings in that area were shoaler than the charted depths by up to 18 fathoms on charts 17385,

17382, and 17360. The charted 10 fathom curve should be redrawn on all charts to reflect the survey soundings. ¹²

Survey soundings were generally deeper than charted depths from charts 17385 and 17360 by 12 to 40 fathoms in the southern end of the survey area. ¹³

Chart 17385

Most of the depths on chart 17385 are in a green wire drag area. The depths north of the Airport Runway Rock Light are not depicted as wire drag. The charted blue areas inshore of the 10 fathom curve around the Airport Runway Rock Light and south of Gerard Point contain charted depths. No survey soundings were obtained over those charted depths because it was too shoal to safely acquire data. The white areas inshore of the green wire drag area are labeled Unsurveyed and contain no charted depths. ¹⁴

There is a log boom charted at position 56°29'04.080"N , 132°16'05.605"W on chart 17385. No log boom was observed at or near that location in the field during survey acquisition. ¹⁵

Chart 17382 ¹⁶

Most of the depths on chart 17382 are in a green wire drag area. The white areas inshore of the green wire drag area are labeled Unsurveyed and contain no charted depths. The charted blue areas inshore of the 10 fathom curve around the Airport Runway Rock Light and south of Gerard Point contain charted depths. No survey soundings were obtained over those charted depths because it was too shoal to safely acquire data.

Soundings from survey H11403 generally disagreed with charted depths from chart 17382.

Chart 17360 ¹⁷

Depths from survey H11403 generally disagreed with charted depths from chart 17360. Comparisons were made at the center of the charted depth.

Chart Comparison Recommendations

The Hydrographer has determined that bottom coverage requirements have been met and data accuracy meets requirements specified by the *NOS Hydrographic Surveys Specifications and Deliverables* dated March 2003. The BASE surfaces and associated soundings are adequate to supersede prior surveys in their common areas. Final chart comparisons will be made at the Pacific Hydrographic Branch after the application of smooth tides. ¹⁸

Automated Wreck and Obstruction Information System (AWOIS) Investigations

There were no AWOIS items located within the limits of survey H11403. ¹⁹

Dangers to Navigation

There were no new Dangers to Navigation found in the survey area. ²⁰

There was significant shoaling at the mouth of the Stikine River. This was previously discovered in 2001 by the NOAA Ship RAINIER in survey H11053 and submitted as a DtoN. See Supplemental Correspondence in Appendix IV for further detail. ²¹

D.2 Additional Results

Shoreline Source

Source shoreline for this sheet was taken from photogrammetric survey AK9702E (NAD 83) GC-10547, at the scale of 1:20,000 and survey AK9702D (NAD 83) at the scale of 1:20,000. The CFF shoreline was imported to CARIS Notebook 2.2 Beta as an editable layer named H11403_Edited_CFF_Shoreline.hob, with all objects having S57 attribution. In addition, features from the current editions of charts 17360, 17382 and 17385 that were not depicted by the source shoreline data were digitized with S57 attribution in CARIS Notebook into H11403_Charted_Shoreline.hob file, to be displayed for field verification.

Shoreline Verification

FAIRWEATHER personnel conducted shoreline verification at times near predicted low water, in accordance with the Standing Project Instructions. Detached positions (DPs) and generic positions (GPs) acquired during shoreline verification were recorded in TerraSync and on paper DP forms. Scanned copies of the DP forms are included in the digital Separates folder ²² and hard copies can be found with the *Separates to be Included with Survey Data*. ²³ In addition, annotations describing shoreline were recorded on hard copy plots of the digital shoreline.

Shoreline Data Processing

Positions acquired during shoreline verification operations were processed in GPS Pathfinder Office and inserted into Pydro using the Generic GPs/DPs Import tool. Features were entered as Detached Positions (DPs) when tide correctors were required, while Generic Positions (GPs) were used if no tide correction was needed. The DPs and GPs indicate new features, revisions to features, or features not found during shoreline verification. A Carto Action of Add, Modify or Delete was assigned to each item in Pydro, and all features were S57 attributed.

All primary detached and generic positions were imported from the Pydro .xml to four separate stand alone .hob files in CARIS Notebook 2.2 Beta. These files were named H11403_add_features.hob and H11403_modify_features.hob, H11403_none_features.hob, and H11403_delete_features.hob.

Source Shoreline Changes, New Features and Charted Features

Items for survey H11403 associated with a detached or generic position that needed further discussion were flagged Report in Pydro. Investigation or survey methods were listed under the Remarks tab and, when appropriate, recommendations to the cartographer were included in the Recommendations tab. A

survey feature report for shoreline items was generated and included as H11403 Shoreline Report.pdf in Appendix I. ²⁴

Three .hob layers, named H11403_Add.hob, H11403_Modify.hob and H11403_Delete.hob, were created in CARIS Notebook for features without associated DPs. New items were digitized to the Add layer, while existing features from the CFF and chart were transferred to the Modify or Delete layers, depending on the cartographic action deemed appropriate by the Hydrographer. Features to be retained as depicted by the source shoreline file were left in the H11403_Edited_CFF_Shoreline.hob file. Field notes made by the Hydrographer on the boat sheets and DP forms were transferred to the remarks field for each feature. ²⁵

Shoreline Recommendations

The Hydrographer recommends that the shoreline depicted in the CARIS Notebook files and final sounding files supersede and complement shoreline information compiled on the CFF and charts. ²⁶

Aids to Navigation

Survey H11403 included one (1) aid to navigation (ATONs). A generic position was taken on the ATON for check purposes only. The ATON was found to serve its intended purpose. ²⁷

The following fixed ATON was positioned using static GPS survey methods, see the *Horizontal and Vertical Control Report for OPR-O119-FA* for further information. ²⁸

Light List Name	Light List Number	NAD83 (CORS96) (EPOCH: 2003.0000)			Ellipsoid	NAVD88
		N Lat (DMS)	W Long (DMS)		Ht (m)	Ortho Ht (m)
Airport Runway Rock Light	22687	56 29 05.87020	132 21	16.17865	2.834	3.872

Bottom Samples

Bottom samples were collected on April 20, 2005 (DN 110) and are included as seabed classifications along with the other S57 features in the Pydro Preliminary Smooth Sheet. The bottom sample positions were also imported to the Notebook H11403_add_features.hob file. ²⁹

E. SUPPLEMENTAL REPORTS

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>
Hydrographic Systems Certification Report 2005	April 18, 2005	N/CS34
OPR-O119-FA-05 Data Acquisition and Processing Report	August 22, 2005	N/CS34
OPR-O119-FA-05 Horizontal and Vertical Control Report	August 22, 2005	N/CS34, N/OPS1

Revisions Compiled During Office Processing and Certification

¹ Filed with the project data.

² Filed with the project data.

³ Concur

⁴ Concur

⁵ Concur, chart area as shown on this survey.

⁶ Concur

⁷ Concur

⁸ Filed with the project data.

⁹ Final tides were applied during office processing at PHB. See attached Tide Note, January 3, 2006.

¹⁰ Filed with the hydrographic records.

¹¹ During evaluation of this survey, only chart 17384 8th Edition, dated Dec. 1 2003 and chart 17385 16th Edition, dated Sept. 1, 2006 were used for comparison. In deeper areas, greater than 20 fathoms the comparison is good, between 2 to 4 fathoms shoaler, with the exception of the extreme southern portion of the survey where soundings differ as much as 40 fathoms. In the northern portion of the survey near the Stikine River, general differences are greater, between 4 to 8 fathoms shoaler. This survey is adequate to supersede these charts in the common area.

¹² Concur

¹³ Concur

¹⁴ Two *unsurveyed* notes should be removed from the chart because the hydrographer covered the area with multibeam. These notes are located as follows; latitude 56/28/19.46N, longitude 132/19/27.13W and latitude 56/28/01.70N, longitude 132/13/53.59W.

¹⁵ Concur, remove from chart.

¹⁶ See endnote 11

¹⁷ See endnote 11

¹⁸ See endnote 11

¹⁹ Concur

²⁰ Concur

²¹ Attached to this survey.

²² Filed with the hydrographic data.

²³ Filed with the hydrographic data.

²⁴ Attached to this report.

²⁵ Blue notes have been drawn on the HCell on areas where RSD shoreline features were deleted, modified or added.

²⁶ Concur

²⁷ Concur

²⁸ It is recommended to use the latest ATONIS information for the position and description of the Aid to navigation.

²⁹ Bottom samples were included in the H11403_features.000 file. Also where the hydrographer did not take any bottom samples, charted samples were blue noted to be retained as charted.

No DtoN.txt

Subject: [Fwd: Stikine delta shoaling]
Date: Thu, 23 Jun 2005 10:01:25 -0700
From: "co fairweather" <co.fairweather@noaa.gov>
To: _NMAO MOP XO Fairweather <XO.Fairweather@noaa.gov>,
_NMAO MOP FOO Fairweather <FOO.Fairweather@noaa.gov>,
_NMAO MOP ChiefST Fairweather <ChiefST.Fairweather@noaa.gov>,
Jessica L Abrams <Jessica.L.Abrams@noaa.gov>

Mark, Lynn; the old RA DtoN is to be applied. No need for us to submit another.

john l

Subject: Re: Stikine delta shoaling
Resent-Date: Wed, 22 Jun 2005 23:51:55 GMT
Resent-From: CO.Fairweather@noaa.gov
Date: Wed, 22 Jun 2005 16:51:49 -0700
From: "Don Haines" <Don.Haines@noaa.gov>
Organization: chief, PHB
To: co fairweather <co.fairweather@noaa.gov>

John:

Quick update. MCD has the originally submitted DTON and are going to apply the 10 fm curve that move seaward.

Thanks,
Don

co fairweather wrote:

> Jim/Alex,
>
> While working on survey H11403, near Wrangell AK, we noticed the shoal at
> the mouth of the Stikine delta has migrated south by approximately 500
> meters. A potential DtoN of 1 1/4 fms was found in the location of a
> charted 23 fms (Chart 17385) sounding. The position of the sounding is 56
> degrees, 30 minutes and 2.171 seconds N and 132 degrees 21 minutes and

No DtoN.txt

- > **30.636 seconds W. Examination of the junction between H11403 and H11053**
- > **(RA 2001) it became apparent that there were similar soundings from the**
- > **junction survey in the vicinity of the charted 23 fms.**
- >
- > **Discussion with PHB showed that the RA submitted a DtoN to address this**
- > **shoaling for survey H11053. The DtoN is attached.**
- >
- > **Our latest addition of 17385 (15th ed, corrected through NM 15/05) does**
- > **not reflect the shoaling condition. We reviewed the NM and Local NM for**
- > **any missing information but could not identify any error. We also checked**
- > **the latest corrected Raster (ECDIS) and did not notice the application of**
- > **the shoaling condition.**
- >
- > **We are also are curious why charts 17385 and 17384 have the green tint**
- > **removed from the survey area of H11053, but the soundings are not yet**
- > **applied.**
- >
- > **Although several questions jump out, the primary issue is whether FA**
- > **should submit another DtoN for the shoaling? I do not want to duplicate**
- > **what the RA has submitted, but the RA DtoN may, or may not, have made it**
- > **to the chart in any form (edition, NM, LNM).**
- >
- > **Advice? johnl**
- >
- >
- >
- > **Edward J Van Den Ameele wrote:**
- >
- >> **Mark,**
- >>
- >> **Attached are the DtoN's RA submitted for this area in 2001 (hope you can**
- >> **read WP files). PHB did not submit additioanal DTONs. At the time, RA**
- >> **did not submit individual soundings and features but rather a general**
- >> **note about the migration of the river mouth and contours. Subsequent to**
- >> **these surveys, MCD no longer accepted notes/contors, etc as DTON's and**
- >> **only wanted point features or individual soundings. Additionally,**
- >> **H11053 has not cleared PHB yet, so that explains why the chart is not**
- >> **yet up-to-date with the new survey. If you are asking to decide whether**
- >> **or not to send in DTON's for this area, I would say yes.**

No DtoN.txt

>>

>> Hope that helps.

>> -EJ

>>

>> foo fairweather wrote:

>>

>>> EJ,

>>>

>>> During the review of survey H11403 a DTON was found to be 1 1/4 fm in a
>>> charted 23 fms (chart 17385) of water. The position of the sounding is
>>> 56 degrees, 30 minutes and 2.171 seconds N and 132 degrees 21 minutes
>>> and 30.636 seconds W. Upon examination of the junction with survey
>>> H11053 it became apparent that there were similar soundings in the
>>> vicinity of the charted 23 fms.

>>>

>>> The paper chart 17385 carried aboard the FA is the new 15th edition and
>>> good through NM 15/05. Looking back at previous NM there is no mention
>>> of any shoaling near the Stikine. The last NM on board the FA dealing
>>> with 17385 shows a 14th edition as of NM 14/03. There is also no
>>> indication of any DTONs being submitted to any Local NM.

>>>

>>> So a couple of questions. First, did the RA submit any DTONs for the
>>> southern end of the Stikine river on charts 17385 and 17384? Second,
>>> did PHB submit any DTONs for the same region?

>>>

>>> From data onboard the FA it appears that H11053 has been signed off by
>>> PHB. What is its status with respect to MCD?

>>>

>>> Further, the 15th ed of chart 17385 has the green tint removed from the
>>> survey area of H11053. Soundings from H11053 are not reflected in this
>>> edition of the chart along the southern edge of the Stikine. What is
>>> the justification for removal of the green tint over the area of H11053
>>> if all of the soundings were not updated?

>>>

>>> Mark

>>>

>>> [Image]

>>> Chart 17385. The blue line represents an approximate 10 fms curve.

>>> The 23 fms at the eastern edge of the curve is the approximate junction

No DtoN.txt

>> > location between H11053 and H11403.

>> >

H-11403 H-Cell Report
Russ Davies, Cartographer
Pacific Hydrographic Branch

Introduction

The primary purpose of the H-Cell is to directly update NOAA ENC's with new survey information in International Hydrographic Organization (IHO) format S-57. H-Cell compilation of survey H-11403 utilized Office of Coast Survey H-Cell Specifications Version 2.0, April 2, 2007. H-Cell H-11403 will be used to update chart 17384, scale 1:20,000, 8th Ed.; Dec. 1, 2003 and chart 17385, scale 1:80,000, 16th Edition, Sep. 1, 2006 and two ENC, US4AK30M.000 and US4AK3MM.000

1. Compilation Scale

The density of soundings in the H-Cell is compiled as appropriate to emulate those soundings on Charts 17384 and 17385. Position and density of non-bathymetric features included in the H-Cell have not been generalized from the scale of the hydrographic survey, 1:20,000 and 1:80,000.

2. Soundings

2.1 Source Data

A 5 meter resolution Combined BASE, **H11403_Final_Combined**, surface was used as the basis for H-Cell production following Branch certification.

For multibeam data a survey-scale full density sounding (SOUNDG) feature object source layer was built from the **H11403_combined** surface in CARIS BASE Editor. A shoal-biased selection was made at 1:20,000 and 1:80,000 survey scale. The sounding feature object source layer was exported from BASE Editor as **soundings**, and imported into HOM.

2.2 Sounding Feature Objects

In CARIS BASE Editor, soundings were manually selected from the high density sounding layer and imported into new layer created to accommodate chart density depths. Manual selection was used to accomplish a density and distribution that more closely represents the seafloor morphology and that emulates density and distribution of soundings on charts 17384 and 17385 than is possible using automated methods. See section 10.1, Data Processing Notes, for details about the use of manual sounding selection for H11403. The sounding feature object source layer was exported and imported into HOM.

3. Depth Areas

3.1 Source Data

The BASE surfaces were used to generate all encompassing depth areas, and, for survey evaluation and verification purposes only, sets of chart equivalent contours. No actual depth contours were delivered per OCS H-Cell Specifications version 2.0.

3.2 Depth Area Feature Objects

One all-encompassing depth range, 0 meters to 240 meters, was used for all depth area objects below MLLW. Upon conversion to NOAA charting units, this depth range is 0 fathoms to 131 fathoms.

4. Meta Areas

The following Meta object areas are included in H-Cell 11403:

M_QUAL	M_NSYS
M_COVR	M_CSCL

Meta area objects were constructed on the basis of perimeter lines delineating the surveyed limits, “islands of coverage” for point and line features surveyed outside the hydrographic limits, and extents of data gaps inside the survey area. These perimeters were first used to create the Skin of The Earth (SOTE) layer, then were duplicated to the Meta object layers and attributed per the H-Cell Specifications, version 2.0.

5. Survey Features

All features for survey H11403 are fully documented with attribution and action taken during compilation. These features can be found in the Descriptive Report under the Shoreline Report which is included in DR.

Dangers to Navigation

There were no dangers to navigation reported during survey operations or office processing.

Aids to Navigation

H11403 did contain a federally maintained aid. See DR for additional information

6. Shoreline / Tide Delineation

Depth areas (DEPARE) and Seabed areas (SBDARE) were created for all SOTE features.

7. Attribution

All S-57 Feature Objects have been attributed as fully as possible based on information provided by the Hydrographer and in accordance with OCS H-Cell Specifications, version 2.0.

8. Layout

8.1 CARIS HOM Layering Scheme

100	Survey scale soundings
101	Chart scale soundings
200	Group 1 objects (Skin of the Earth)
301	Bottom samples
305	Ledge
500	Islet
600	M_COVR
601	M_QUAL
602	M_NSYC
603	M_CSCL
800	Blue Notes

8.2 Blue Notes

Notes regarding data sources are in CARIS HOM as layers 800 and as Shape file sets, **H11403HC_bluenotes** (with the appropriate extensions) for point and line figures, respectively.

9. Spatial Framework

9.1 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.

9.2 Horizontal and Vertical Units

During creation of sounding sets in CARIS BASE Editor, and creation of the H-Cell in CARIS HOM, 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 H-Cell base cell file, at the end of the H-Cell 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 from 0 to equal to or greater than 11 fathoms as whole units.

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.

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 (or fathoms and feet above 6 feet)
Positional Units (PUNI):	Meters

10. QA/QC

10.1 Data Processing Notes

Manual chart scale sounding selections were made for this survey. Experience has shown that in areas where bathymetry is steep sided, as in the case of this extremely steep edged fjord, automated sounding selection is impractical. None of the default sounding suppression options offered in CARIS BASE Editor or HOM yields an acceptable density and distribution of depths, generally bunching soundings nearshore with too sparse coverage seaward. While the customized options are more practical for this type of terrain, an inordinate amount of time must be spent in experimentation with variations on the algebraic terms in order to devise the most suitable formula, and manual adjustments are still required to the resulting sounding set.

10.2 ENC Validation Checks

H11403 was subjected to QA and Validation checks in HOM prior to exporting to the H-Cell base cell (000) file. Full millimeter precision was retained in the export of the metric S-57 base cell data set. This data set was converted to a chart unit 000 file. dKart Inspector 5.0 (Service Pack 1) was then used to further check the data set for conformity using the S-58 version 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 HSD, MCD and CGTP Deliverables

- H11403 Base Cell File, Chart Units, Soundings compiled to 1:20,000,1:80,000
- H11403 Base Cell File, Chart Units, Soundings compiled to 1:20,000
- H11403 Descriptive Report including end notes compiled during office processing and certification
- H11403 H-Cell Supplemental Report
- Blue Notes shape files
- BAG (Bathymetry Attributes Grid)
- 000 Features File

11.2 File Naming Conventions

HOM file set prefix: *H11403_hc*

MCD Chart units base cell file: *US511403_CU.000*

MCD Chart units base cell file, survey scale soundings: *US511403_SS.000*

BAG (for CGTP): *H11403_comb_10.bag*

Features File (for CGTP): *H11403_Features.000*

11.3 Software

HIPS 6.1:	Management and inspection of Combined BASE surfaces
BASE Editor 2.0:	Combination of Product Surfaces and initial creation of the S-57 bathymetry-derived features
BASE Editor 2.0:	Creation of BAG deliverable
HOM 3.3:	Assembly of the H-Cell, S-57 products, QA
GIS 4.4a:	Setting the sounding rounding variable
Pydro v7.3 (r2014_TCfix)	Creation of AWOIS and DTON reports
dKart Inspector 5.0:	Validation of the base cell file

12. Contacts

Inquiries regarding this H-Cell content or construction should be directed to:
Russ Davies, Cartographer, PHB, Seattle, WA; 206-526-6843;
Russ.Davies@noaa.gov.



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : January 3, 2006

HYDROGRAPHIC BRANCH: Pacific Hydrographic Branch
HYDROGRAPHIC PROJECT: OPR-O119-FA-2005
HYDROGRAPHIC SHEET: H11403

LOCALITY: Northern Entrance to Eastern Passage, Eastern Passage, AK
TIME PERIOD: April 5 - April 20, 2005

TIDE STATION USED: 945-1152 Madan Bay, AK
Lat. 56 23.53' N Long. 132 10.14' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 4.670 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SA122

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).



CHIEF, PRODUCTS AND SERVICES DIVISION

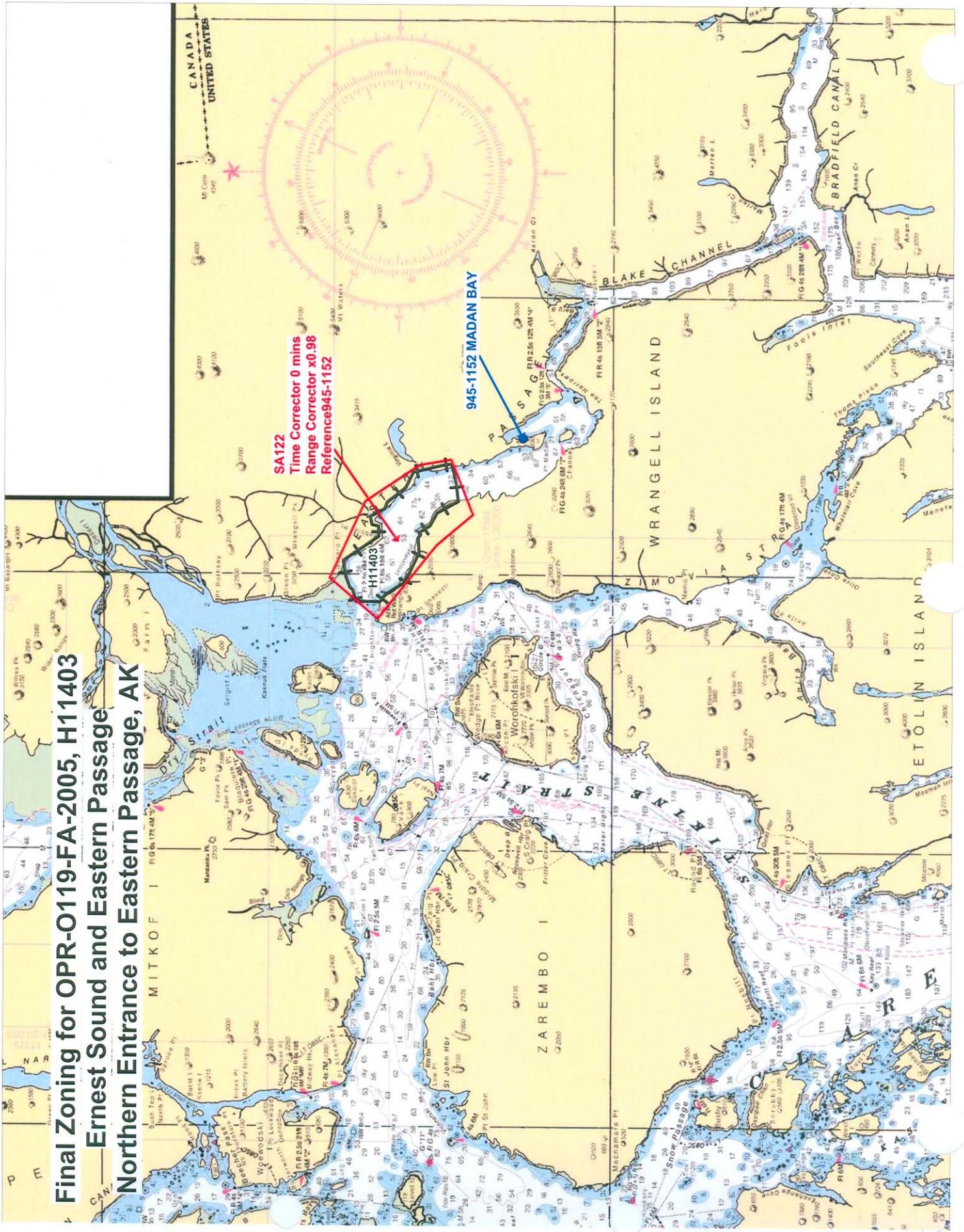


Final tide zone node point locations for OPR-O119-FA-2005, H11403

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 SA122	945-1152	0	0.98
-132.386595 56.487683			
-132.298117 56.449197			
-132.260944 56.425084			
-132.194758 56.439468			
-132.201295 56.46038			
-132.245547 56.496045			
-132.337505 56.519025			
-132.386595 56.487683			

Final Zoning for OPR-O119-FA-2005, H11403 Ernest Sound and Eastern Passage, AK Northern Entrance to Eastern Passage, AK



APPROVAL SHEET
H-11403

Initial Approvals:

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



The survey and associated records have been inspected with regard to survey coverage, development of critical depths, S-57 classification and attribution of soundings and features, cartographic characterization, and verification or disproval 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.



Digitally signed by Gary C. Nelson
DN: cn=Gary C. Nelson, c=US,
o=NOAA, ou=Pacific Hydrographic
Branch, email=gary.nelson@noaa.gov
Date: 2008.04.22 14:09:56 -07'00'

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.



David Neander
2008.04.22
14:47:35 -07'00'

