

H11450

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: **Navigable Area**

Registry Number: **H11450**

LOCALITY

State: Maryland

General Locality: Chesapeake Bay

Sub-locality: Cedar Point to Little Cove Point

2006

CHIEF OF PARTY
LT Charles "Jake" Yoos (June 2005 – March 2006)
LT(jg) Briana Welton (April 2006 – March 2007)
NOAA

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DATE

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER: <p style="text-align: center; font-size: 1.2em;">H11450</p>
<p style="font-size: 1.2em; margin: 0;">HYDROGRAPHIC TITLE SHEET</p>		
INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.		
State:	Maryland	
General Locality:	Chesapeake Bay	
Sub-Locality:	Cedar Point to Little Cove Point	
Scale:	1:10,000	Date of Survey: 06/09/2005 to 08/17/2006
Instructions Dated:	3 July 2005	Project Number: OPR-E349-BH-05
Vessel:	NOAA S/V Bay Hydrographer	
Chief of Party:	LT Charles "Jake" Yoos (June 2005 – March 2006) LT(jg) Briana Welton (April 2006 – March 2007)	
Surveyed by:	Bay Hydrographer Personnel	
Soundings by:	Reson 7125, 8125 multibeam echo sounders, and Odom Echotrac MKIII precision survey echo sounder	
Graphic record scaled by:	N/A	
Graphic record checked by:	N/A	
Protracted by:	N/A	Automated Plot: N/A
Verification by:	Atlantic Hydrographic Branch Personnel	
Soundings in:	Meters at MLLW	
Remarks: 1) All Times are in UTC. 2) This is a Navigable Area Hydrographic Survey. 3) Projection is UTM Zone 18N. <i>Red, bold, italic comments were made during office processing.</i>		

Descriptive Report to Accompany Hydrographic Survey H11450

Project OPR-E349-BH-05
Cedar Point to Little Cove Point

Scale 1:10,000

June 2005 – August 2006

NOAA S/V Bay Hydrographer (s5501)

Chiefs of Party: LT Charles “Jake” Yoos (June 2005 – March 2006)

LT(jg) Briana Welton (April 2006 – March 2007)

A. AREA SURVEYED *Concur*

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-E349-BH-05* dated July 3, 2005, Standing Project Instructions* dated March 23, 2004, and NOS Hydrographic Specifications and Deliverables* dated March 5, 2003, with the exception of deviations noted in this report.† The survey area is the central Chesapeake Bay from Cedar Point to Little Cove Point. This survey corresponds to sheet “F” in the sheet layout provided with the Letter Instructions*. Project OPR-E349-BH-05 responds to requests from the Maryland Port Administration, Association of Maryland Pilots, U.S. Army Corps of Engineers, and the U.S. Coast Guard for contemporary survey to promote safe navigation for the growing international bulk and container trade in the Chesapeake Bay and Baltimore Harbor.

Two hundred percent side scan (SSS) coverage was obtained in the survey area in waters 4 meters and deeper. Significant Side scan contacts were developed with multibeam echosounder (MBES).

Data acquisition began on June 9, 2005 (DN 160) and ended on August 17, 2006 (DN 229). The majority of the data were acquired during the fall of 2005.

* *Filed with original field records*

† *Concur with clarification. Survey completed partially as specified. Reference ER for further information.*

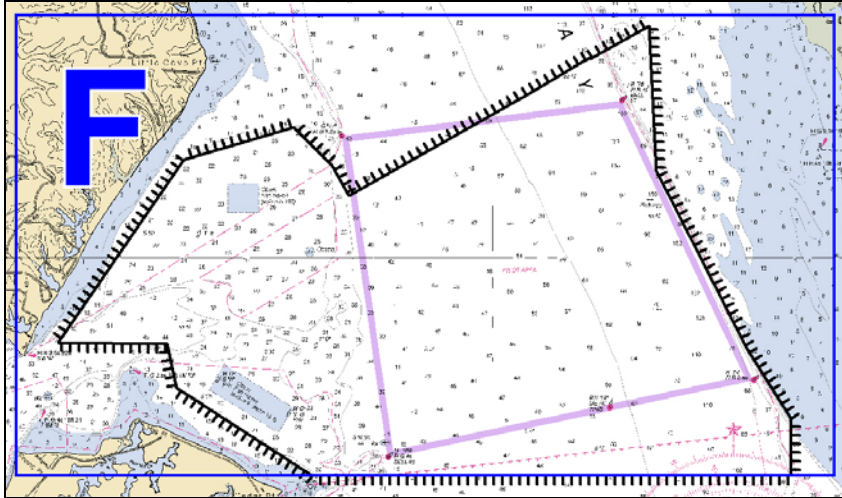


Figure 1. H11450 Survey Limits (Chart 12264).

B. DATA ACQUISITION AND PROCESSING *Concur*

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *OPR-E349-BH-05 Data Acquisition and Processing Report (DAPR)*^{*}, submitted under separate cover. Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

Final, Approved Water Levels have been applied to this survey. See Section C. for additional information.

B1. Equipment and Vessels *Concur*

All data for this survey were acquired by Bay Hydrographer. In the spring of 2006, the Reson 8125 MBES was replaced with a new Reson 7125 MBES (see DAPR[†]).

B2. Quality Control**Crosslines**

Vertical Beam Echo Sounder (VBES) crosslines totaled 39.8 nautical miles, comprising 14.4% of mainscheme hydrography. Crossline and mainscheme bathymetry were manually compared in Caris HIPS Subset Mode. Vertical Beam Echo Sounder (VBES) crosslines agree with mainscheme VBES with no discernable discrepancy. Vertical Beam Echo Sounder crosslines agree within 0.15 meters of MBES developments.

A statistical Quality Control Report was not conducted because the Pydro check point comparison tool and Caris QC tool were not functional at the time of this survey.

Junctions *Concur*

No contemporary hydrography was available to compare with this survey, and therefore a junction comparison was performed.

Data Quality Factors *Concur*

The primary mission of Bay Hydrographer is to test and evaluate new and emerging hydrographic and oceanographic technologies. Traditional hydrographic surveys such as H11450 are conducted with newly upgraded software and firmware before they are introduced to the NOAA hydrographic fleet. This operational paradigm is a factor that sometimes affects data quality and is noted and accounted for accordingly during data processing. Specific instances are noted below.

^{*} *Filed with original field records*

[†] *Filed with original field records*

The Reson 8125 MBES on Bay Hydrographer was replaced with a Reson 7125 MBES in the spring of 2006. The Reson 7125 was a new system to Reson and to NOAA at the time of installation, and the first of its kind to be integrated on a NOAA survey platform. Over the course of the year succeeding the installation, numerous “bugs” were identified between the integration of the Isis acquisition software and the Reson 7P, and hence various beta versions of Isis 7.0 were used. Multiple Reson 7125 firmware upgrades were also made during the time since installation. However, comparisons of Reson 7125 patch test data to Reson 8125 patch test data over the same “patch test” wreck revealed similar least depths.

The MBES mounting arm aboard Bay Hydrographer “wobbles” in seas greater than one-and-a-half feet. The residual artifact of pole-wobble is similar to that of uncorrected roll. Severe pole-wobble artifact is found in data acquired on DN 2006-170 over the shoal in the northeast corner of the sheet (Figure 5 in Section D). Outer-beams beyond 20 degrees were filtered out in order to stay within acceptable errors to meet IHO Order 1.*

The VBES data acquired in the southeast corner of the sheet were deleted from the project during the final stages of survey analysis (Figure 2). The data acquired in this section of the survey were uncorrectable, and so bathymetry for chart update in this area does not exist. Due to the age of the survey, the data was not re-acquired, further delaying survey submission.

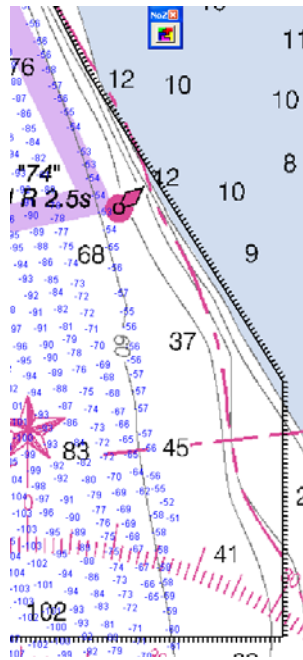


Figure 2. Area of discarded VBES data in SE corner of sheet.

* Do not concur. See the Evaluation Report for further detail.

B3. Data Reduction***Concur***

Reson 7125 data were initially converted with a beta converter file provided by Caris. When Caris HIPS/SIPS 6.1 was released early in 2007, the hydrographer learned that Reson 7125 data converted with a beta converter require re-conversion with Caris 6.1. The Caris Hydrographic Vessel File (HVF) also required modification: the vessel offsets in the “swath” field were removed and retained only in the “svp” field. The waterline portion of the HVF was also set to “no” before re-correcting the data. The data were thus reconverted and re-cleaned.

The new convert_Reson7K.dll packaged with Caris 6.1 includes code to apply transducer X-Y rotation during the sound velocity correction. This new treatment of the HVF applies to Reson 7125 and Simrad sonar data only, and was first introduced in Caris 6.0SP2HF21. See the emails from the Caris HelpDesk on this subject (Caris HelpDesk Request IDs 00700575 and 00702470). The data required re-conversion due to a noted difference in the processed two-way travel time of the data converted with the beta converter and the Caris 6.1-supported converter.

The Sound Velocity profile selection method used was ‘nearest in time’ due to the large time gaps between data acquisition.

All other data reduction procedures for survey H11450 conform to those detailed in the *DAPR**.

B4. Data Representation

Though many BASE surfaces were used for the processing of H11450, the final submission is shown in Figures 3 and 4. The submission field sheets have fewer than 25×10^6 nodes except H11450, which bounds the entire survey area.

* *Filed with original field records*

- H11450
- H11450_100SSS_5m
- H11450_200SSS_5m
- H11450_MBES_1m
- H11450_VBES_5m
- H11450_VBES_5m_Final
- H11450_MBES_1m_Final
- H11450_Fish_Weir
- H11450_FishWeir_30cm
- H11450_FishWeir_30cm_Final
- H11450_NE_Developments_1m
- H11450_NE_Developments_1m
- H11450_NE_Developments_1m_Final
- H11450_NorthernFishObstn
- H11450_NorthernFishHaven_30cm
- H11450_NorthernFishHaven_30cm_Final
- H11450_SE_Developments_1m
- H11450_SE_Developments_1m
- H11450_SE_Developments_1m_Final
- H11450_SW_Developments_50cm
- H11450_SW_Developments_50cm_shallow
- H11450_SW_Developments_50cm_shallow_Final

Figure 3: Field sheets, surfaces, and mosaics submitted with H11450.

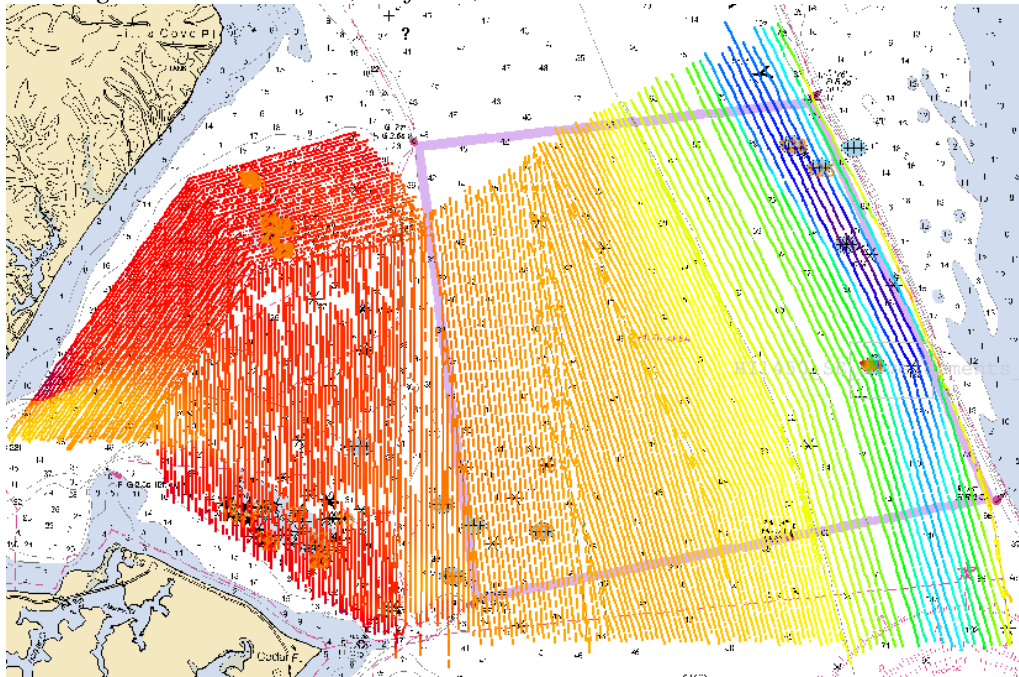


Figure 4: Layout of field sheets, BASE surfaces, and their resolutions for H11450.

C. VERTICAL AND HORIZONTAL CONTROL

Concur

Project OPR-E349-BH05-05 required neither horizontal control work nor subordinate tide station installation and thus no Horizontal and Vertical Control Report will be submitted.

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 1.

Location	Frequency	Custodian	Range	Priority
Annapolis	301 kHz	USCG	290 KM	Primary

Table 1: Differential Corrector Sources for H11450.

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 Solomons, MD (857-7330) served as control for datum determination and as the primary source for water level reducers for survey H11450.

No tertiary gauges were required.

D. RESULTS AND RECOMMENDATIONS

D.1. Chart Comparison

D.1.a. Survey Agreement with Chart

Survey H11450 was compared with the following chart:

Chart	Scale	Edition and Date	Latest Notice to Mariners Applied
12264	1:40,000	30 th Ed, July 2007	10/20/2007

Table 2: Charts compared with H11450

Surveyed depths generally agree within one to three feet of charted depths, with minor shifting of contours. The shoal in the northeast corner of the sheet (Figure 5) was developed with “skunk stripped” MBES to better define the shoal. Severe “pole wobble” artifacts were present in the data, and so a swath-angle filter was applied to these data. Figure 5 depicts the shoal development before and after filtering.*

* *Concur with clarification. No comparisons were made to the affected ENC. See also the Evaluation Report.*

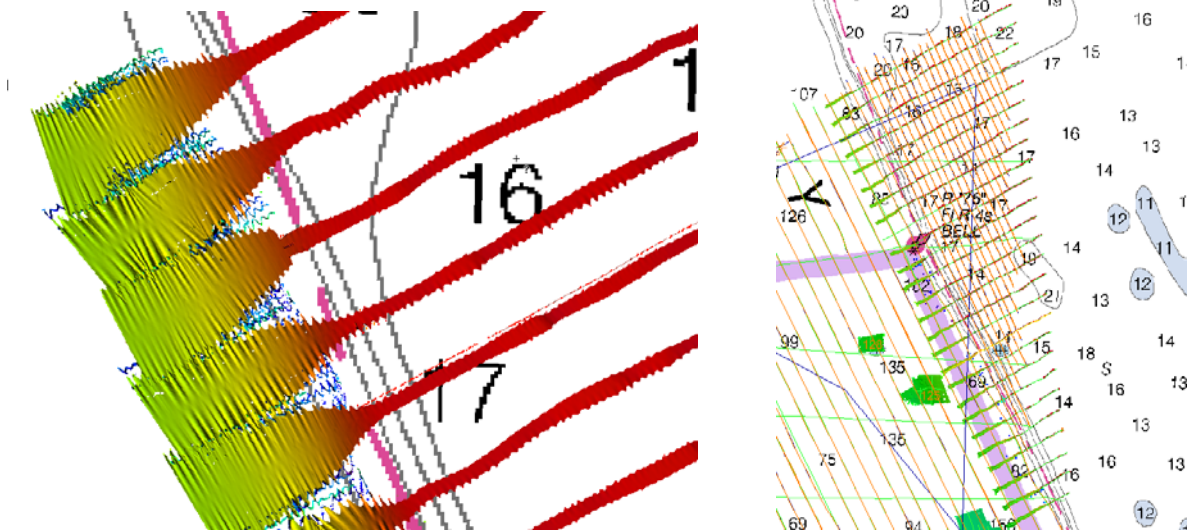


Figure 5: “Pole wobble” artifacts before and after filtering.

The charted fish haven area with an authorized depth of 15 feet in the southwest corner of the survey area should be expanded to include the debris found in the vicinity outside of the charted area. See “H11450_Feature_Report” in Appendix II* of this report for such features that should be included in the fish haven area. Figure 6 depicts the contacts outside of the fish haven area.

The Hydrographer has determined that data accuracy standards and bottom coverage requirements have been met and survey data are adequate to supersede charted data in their common areas, with the following exceptions:†

D.1.b. Dangers to Navigation† *Concur with Clarification*

One (1) Dangers to Navigation (DTONs) was found on survey H11450, and reported to the Marine Chart Division via email on June 19, 2006. The original DTON submission package is included in Appendix IV*. Descriptions of each DTON are included in the Survey Feature Report in Appendix I*.

D.1.c. Other Features *Concur*

Automated Wreck and Obstruction Information System (AWOIS) Investigations

Five (5) AWOIS items fall the within the survey limits of H11450. Descriptions of each AWOIS item investigation are included in the Survey Feature Report in Appendix I*.

Additional Items

* Appended to this report
 † See also the Evaluation Report

Additional features investigated within the limits of H11450 are described in the Survey Feature Report in Appendix I*.

D.2. Additional Results

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

Prior survey comparison with H11450 was not performed.

D.2.b. Shoreline Verification *Concur*

Shoreline verification was not performed for survey H11450.

D.2.c. Aids to Navigation* *Concur with clarification*

There are seven aids to navigation (ATON) in H11450. The two private buoys marking the fish haven north of Cedar Point move frequently, though they serve their intended purpose. The fish haven itself spills beyond the boundary of the charted area. All other aids were found to be correctly charted and serve their intended purpose.

D.2.d. Overhead features *Concur*

There are no overhead features in survey H11450.

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

There are no submarine cables or pipelines in H11450.

D.2.f. Ferry Routes *Concur*

There are no ferry routes on H11450.

D.2.g. Bottom Samples *Concur*

Thirty-one bottom samples were taken within the limits of H11450. The bottom type varies from sand, silt, shell, and mud; and generally agrees with charted bottom characteristics.

D.2.h Miscellaneous *Concur with clarification*

Two fish haven areas are charted within the limits of H11450.

* *See also the Evaluation Report*

Numerous debris piles were found near but outside the charted area of the fish haven in the southwest of the survey. The fish haven area should be expanded to include the debris in the vicinity of the charted fish haven area (Figure 5).

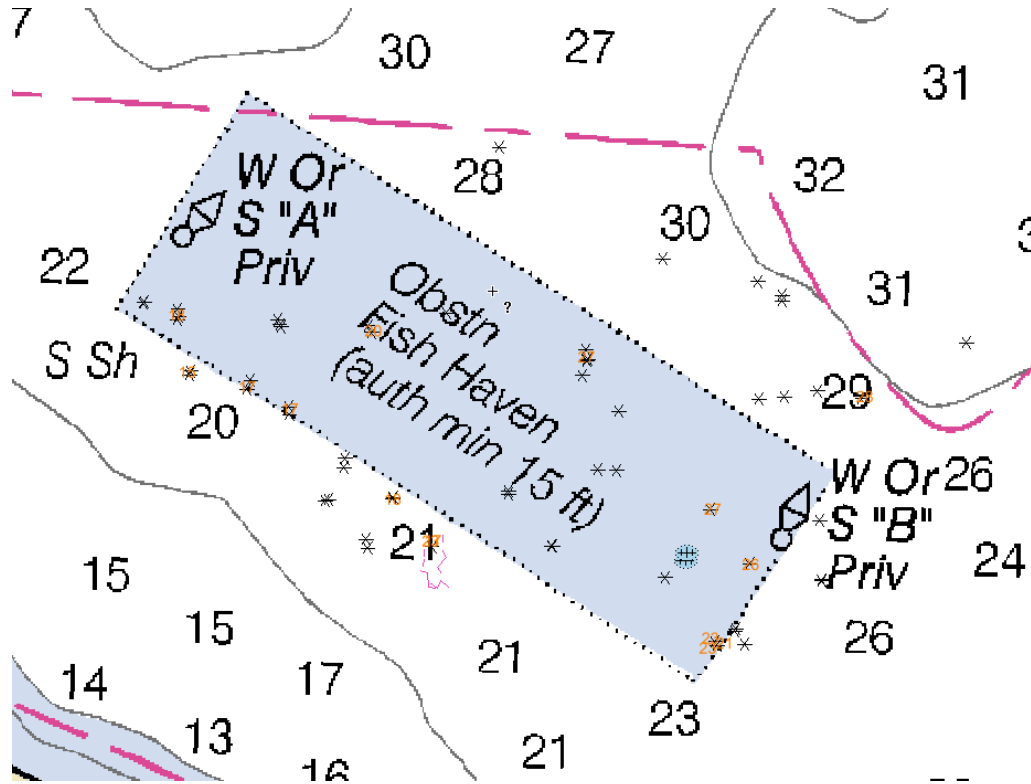


Figure 6: Numerous contacts outside southern fish haven.

The charted fish haven in the northern section of H11450 contains all debris except the fish weir north of the charted fish haven area. The fish weir was submitted as a DTON, and is currently charted as a seven foot obstruction. However, a single stake with a least depth of 13 feet is located about 40 meters southeast of the charted obstruction (see Figure 7). A second DTON was not submitted due to the proximity of the 7-foot obstruction and the scale of the chart.

Do Not Concur. The office recommends including the 13 foot stake as part of an "Obstruction Area". See the Evaluation Report for further discussion.

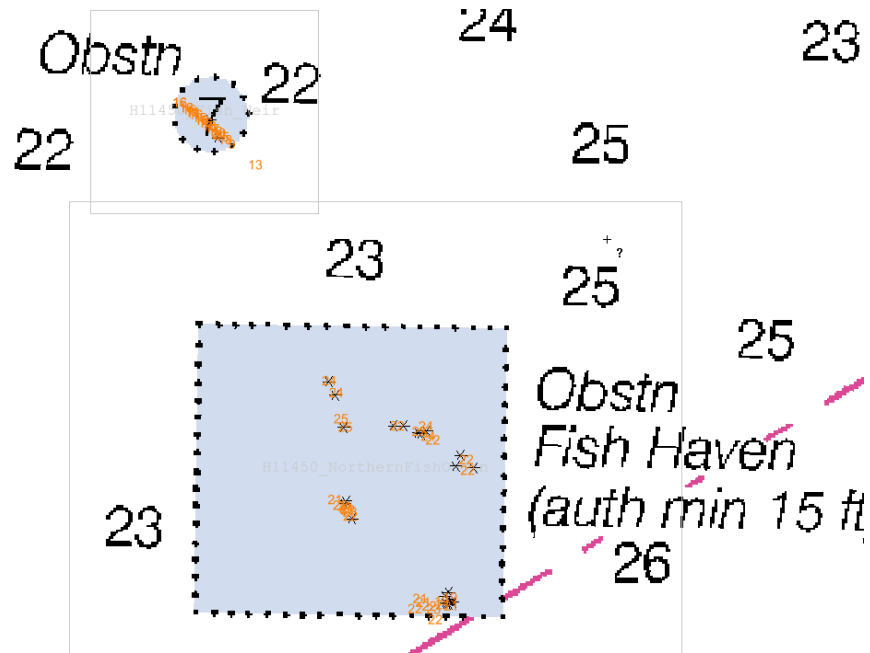


Figure 7: Northern fish haven area and fish weir obstruction (submitted as DTON).

The charted pilot area in the center of H11450 corresponds to a pilot exchange area in which Baltimore Pilots rotate on and off vessels midway through their transits through the Chesapeake Bay. A pilot station is maintained by the Baltimore Pilots Association in Mill Creek, near Solomon’s Island, out of which their pilot boats operate.

E. APPROVAL

I have completed and reviewed the attached survey data and reports. The survey data meets or exceeds requirements set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and HSD Technical Directives, except where noted. These data are adequate to supersede charted data in their common areas. All data and reports are respectfully submitted to Atlantic Hydrographic Branch.

LT(jg) Briana J. Welton, NOAA
Mid-Atlantic Region Hydro Team Leader
Navigation Response Branch

Appendix 1: DTON Reports

OPR-E349-BH Danger to Navigation Report

Registry Number: H11450
State: Maryland
Locality: Chesapeake Bay
Sub-locality: Cedar Point to Little Cove Point
Project Number: S-E349-BH-05
Survey Date: 05/02/2006

This report includes information associated with one danger to navigation (Dton), located in the project area of OPR-E349-BH.

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12264	29th	01/01/2005	1:40,000 (12264_1)	[L]NTM: ?
12230	61st	11/01/2003	1:80,000 (12230_1)	[L]NTM: ?
12280	5th	10/01/2004	1:200,000 (12280_1)	[L]NTM: ?
13003	48th	10/01/2004	1:1,200,000 (13003_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	Obstruction	2.23 m	38° 20' 50.8" N	076° 22' 58.4" W	---

1 - Danger To Navigation

1.1) Profile/Beam - 1401/200 from h11450 / bh_s5501_reson7125 / 2006-122 / 008_1615

DANGER TO NAVIGATION

Survey Summary

Survey Position: 38° 20' 50.8" N, 076° 22' 58.4" W
Least Depth: 2.23 m (= 7.30 ft = 1.217 fm = 1 fm 1.30 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 3.922 m ; TVU (TPEv) ± 0.204 m
Timestamp: 2006-122.16:16:20.221 (05/02/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-122 / 008_1615
Profile/Beam: 1401/200
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

This feature is the least depth on one of a number of submerged pound net (fish weir) stakes. The stakes are arranged in a linear pattern, with the northernmost stake located at 38°20'52.143" , -076°23'00.647", and the southernmost stake at 38°20'48.278" , -076°22'54.387".

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-122/008_1615	1401/200	0.00	000.0	Primary
h11450/bh_s5501_reson8125/2006-020/936_1635	1356/158	0.45	334.6	Secondary
h11450/bh_s5501_reson8125/2006-020/936_1635	1427/229	7.32	123.9	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/936_1635	1427/239	7.37	123.6	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-265/108_1356	0001	7.46	240.3	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/947_1630	1196/228	8.51	311.8	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/943_1605	1537/231	12.86	129.3	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-265/109_1419	0002	13.08	028.7	Secondary
h11450/bh_s5501_reson8125/2006-020/948_1622	1467/1	15.22	311.0	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/943_1605	1601/67	21.05	128.6	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/948_1622	1417/122	22.02	310.2	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/948_1622	1386/211	27.63	308.4	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/944_1613	1684/240	27.87	127.4	Secondary (grouped)
h11450/bh_s5501_reson7125/2006-122/007_1601	1090/251	28.10	125.8	Secondary (grouped)

h11450/bh_s5501_reson8125/2006-020/949_1609	1440/240	29.40	311.7	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-265/109_1419	0001	34.08	321.5	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/944_1613	1747/207	34.25	127.5	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/949_1609	1497/212	36.75	309.3	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/944_1613	1807/100	40.36	127.3	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/949_1609	1560/86	43.70	310.0	Secondary (grouped)
h11450/bh_s5501_reson7125/2006-122/007_1609	2828/255	56.37	308.7	Secondary (grouped)
h11450/bh_s5501_reson7125/2006-122/007_1609	1960/12	109.09	309.3	Secondary (grouped)

Hydrographer Recommendations

The hydrographer recommends charting a 7ft obstruction located in the position of this pound net stake.

Cartographically-Rounded Depth (Affected Charts):

7ft (12264_1, 12230_1, 12280_1)

1 ¼fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 2.225 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

AHB Concurs with clarification. Stakes should be charted an area obstruction encompassing the series of stakes with least depth of 2.225 meters.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/fish weir.bmp does not exist.]

H11450 Feature Report

Registry Number: H11450
State: Maryland
Locality: Chesapeake Bay
Sub-locality: Cedar Point to Little Cove Point
Project Number: S-E349-BH-05
Survey Dates: 06/09/2005 - 05/02/2006

This is a report of features found during survey H11450, OPR-E349-BH-05, Central Chesapeake Bay.

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12284	15th	03/15/1997	1:10,000 (12284_1)	[L]NTM: ?
12264	29th	01/01/2005	1:40,000 (12264_1)	[L]NTM: ?
12230	61st	11/01/2003	1:80,000 (12230_1)	[L]NTM: ?
12280	5th	10/01/2004	1:200,000 (12280_1)	[L]NTM: ?
13003	48th	10/01/2004	1:1,200,000 (13003_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	Obstruction	[None]	38° 18' 35.5" N	076° 22' 50.9" W	---
1.2	Obstruction	[None]	38° 18' 38.0" N	076° 22' 54.0" W	---
1.3	Wreck	8.60 m	38° 19' 11.7" N	076° 22' 04.1" W	---
1.4	Wreck	11.47 m	38° 18' 41.5" N	076° 20' 38.1" W	---
1.5	Wreck	39.00 m	38° 21' 06.4" N	076° 18' 41.7" W	---
1.6	Obstruction	25.70 m	38° 19' 45.2" N	076° 18' 01.9" W	---
1.7	Wreck	11.92 m	38° 19' 06.1" N	076° 20' 36.1" W	---
1.8	Obstruction	5.34 m	38° 18' 35.6" N	076° 22' 45.6" W	---
1.9	Obstruction	4.65 m	38° 18' 45.9" N	076° 23' 05.3" W	---
1.10	Obstruction	5.51 m	38° 18' 38.1" N	076° 22' 48.8" W	---
1.11	Obstruction	6.52 m	38° 18' 29.4" N	076° 22' 22.3" W	---
1.12	Obstruction	6.89 m	38° 18' 30.2" N	076° 22' 21.0" W	---

1.13	Obstruction	5.56 m	38° 18' 40.2" N	076° 22' 52.9" W	---
1.14	Wreck	10.81 m	38° 18' 51.2" N	076° 21' 25.0" W	---
1.15	Wreck	10.91 m	38° 18' 24.0" N	076° 21' 19.7" W	---
2.1	AWOIS	[no data]	[no data]	[no data]	---
2.2	AWOIS	[no data]	[no data]	[no data]	---
2.3	AWOIS	[no data]	[no data]	[no data]	---
2.4	AWOIS	[no data]	[no data]	[no data]	---
2.5	AWOIS	[no data]	[no data]	[no data]	---
2.6	AWOIS	[no data]	[no data]	[no data]	---
2.7	SSS	[None]	38° 20' 02.8" N	076° 22' 03.8" W	3680
2.8	Wreck	41.24 m	38° 20' 29.8" N	076° 18' 16.0" W	4013
3.1	Obstruction	2.23 m	38° 20' 50.8" N	076° 22' 58.4" W	---

Appendix 2: Survey Feature Report

1 - New Features

1.1) Contact/Point - 0002/1 from h11450 / bh_s5501_klein5000_sss200 / 2005-319 / 237_1851

Survey Summary

Survey Position: 38° 18' 35.5" N, 076° 22' 50.9" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2006-023.08:33:04 (01/23/2006)
Survey Line: h11450 / bh_s5501_klein5000_sss200 / 2005-319 / 237_1851
Contact/Point: 0002/1
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Debris pile outside of fish haven. No bathymetry obtained.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_klein5000_sss200/2005-319/237_1851	0002	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss100/2005-293/143_1734	0003	17.19	348.3	Secondary

Hydrographer Recommendations

Extend fish haven area to include debris.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 2:depth unknown
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2:found by side scan sonar
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is measured from the imagery to be 15' in 21 ' of water, located approximately 62 m outside Cedar Point "Fish Haven". This is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

Feature Images



Figure 1.1.1

1.2) Contact/Point - 0001/1 from h11450 / bh_s5501_klein5000_sss100 / 2005-293 / 144_1717

Survey Summary

Survey Position: 38° 18' 38.0" N, 076° 22' 54.0" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2005-349.05:11:08 (12/15/2005)
Survey Line: h11450 / bh_s5501_klein5000_sss100 / 2005-293 / 144_1717
Contact/Point: 0001/1
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Fish haven debris - auth min 15ft. No bathymetry obtained.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_klein5000_sss100/2005-293/144_1717	0001	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss200/2006-065/200_1915	0001	5.84	065.2	Secondary

Hydrographer Recommendations

Extend fish haven to include debris.

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 2:depth unknown
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2:found by side scan sonar
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is measured from the imagery to be 15', located approx 95m outside Cedar Point "Fish Haven". The Fish Haven is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

Feature Images



Figure 1.2.1

1.3) Profile/Beam - 579/51 from h11450 / bh_s5501_reson8125 / 2005_325 / 800_2007

Survey Summary

Survey Position: 38° 19' 11.7" N, 076° 22' 04.1" W
Least Depth: 8.60 m (= 28.20 ft = 4.700 fm = 4 fm 4.20 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2005-325.20:08:26.582 (11/21/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005_325 / 800_2007
Profile/Beam: 579/51
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Small wreck 12 x 4 meters.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005_325/800_2007	579/51	0.00	000.0	Primary
h11450/bh_s5501_reson8125/2005-325/800_2007	579/51	0.00	000.0	Secondary
h11450/bh_s5501_klein5000_sss100/2005-300/129_1811	0001	2.52	325.3	Secondary
h11450/bh_s5501_klein5000_sss100/2005-300/128_1829	0001	5.39	249.5	Secondary (grouped)
h11450/bh_s5501_klein5000_sss200/2005-305/223_1645	0001	8.03	202.3	Secondary (grouped)

Hydrographer Recommendations

Chart wreck

Cartographically-Rounded Depth (Affected Charts):

28ft (12264_1, 12230_1, 12280_1)

4 $\frac{3}{4}$ fm (13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
 SORDAT - 20060817

SORIND - US,US,nsurf,H11450

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 8.595 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ field.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/small wreck near y d buoy.bmp does not exist.]

1.4) Profile/Beam - 1332/85 from h11450 / bh_s5501_reson7125 / 2006-108 / 993_1748

Survey Summary

Survey Position: 38° 18' 41.5" N, 076° 20' 38.1" W
Least Depth: 11.47 m (= 37.63 ft = 6.271 fm = 6 fm 1.63 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.227 m
Timestamp: 2006-108.17:50:13.966 (04/18/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-108 / 993_1748
Profile/Beam: 1332/85
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Unidentified obstruction 5 meters long at base.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-108/993_1748	1332/85	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss100/2005-237/115_1743	0001	10.76	339.7	Secondary (grouped)
h11450/bh_s5501_klein5000_sss200/2005-311/242_1909	0001	13.14	316.6	Secondary (grouped)

Hydrographer Recommendations

Chart obstruction.

Cartographically-Rounded Depth (Affected Charts):

37ft (12264_1, 12230_1, 12280_1)

6 ¼fm (13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 11.469 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Chart wreck at 37.628 feet.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/small wreck 1332-85.bmp does not exist.]

1.5) Profile/Beam - 209/158 from h11450 / bh_s5501_reson7125 / 2006-108 / 1009

Survey Summary

Survey Position: 38° 21' 06.4" N, 076° 18' 41.7" W
Least Depth: 39.00 m (= 127.96 ft = 21.326 fm = 21 fm 1.96 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.921 m ; **TVU (TPEv)** ± 0.235 m
Timestamp: 2006-108.19:46:36.056 (04/18/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-108 / 1009
Profile/Beam: 209/158
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Small boat (17 by 3.5 meters)

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-108/1009	209/158	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss100/2005-304/111_1655	0001	9.98	120.6	Secondary
h11450/bh_s5501_klein5000_sss200/2005-325/209_1633	0001	37.88	328.3	Secondary

Hydrographer Recommendations

Chart wreck

Cartographically-Rounded Depth (Affected Charts):

128ft (12264_1, 12230_1, 12280_1)

21fm (13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 39.001 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ the field.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/small wreck in ne corner of sheet.bmp does not exist.]

1.6) Profile/Beam - 339/164 from h11450 / bh_s5501_reson7125 / 2006-108 / 1019

Survey Summary

Survey Position: 38° 19' 45.2" N, 076° 18' 01.9" W
Least Depth: 25.70 m (= 84.33 ft = 14.056 fm = 14 fm 0.33 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.232 m
Timestamp: 2006-108.18:53:46.842 (04/18/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-108 / 1019
Profile/Beam: 339/164
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Unidentified mound. 33 m long, 7 m wide, 2 meters high.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-108/1019	339/164	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss100/2005-264/110_1809	0001	6.03	091.5	Secondary (grouped)
h11450/bh_s5501_klein5000_sss200/2005-325/207_1532	0001	21.77	348.4	Secondary (grouped)

Hydrographer Recommendations

Chart least depth or obstruction.

Cartographically-Rounded Depth (Affected Charts):

84ft (12264_1, 12230_1, 12280_1)

14fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 25.705 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Chart Wreck least depth 25.705 meters at surveyed position.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/339-164 mound.bmp does not exist.]

1.7) Profile/Beam - 485/137 from h11450 / bh_s5501_reson7125 / 2006-108 / 998_1810

Survey Summary

Survey Position: 38° 19' 06.1" N, 076° 20' 36.1" W
Least Depth: 11.92 m (= 39.12 ft = 6.520 fm = 6 fm 3.12 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.240 m
Timestamp: 2006-108.18:10:35.677 (04/18/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-108 / 998_1810
Profile/Beam: 485/137
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Small wreck (5 by 2 meters)

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-108/998_1810	485/137	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss100/2005-237/116_1805_6	0001	1.70	177.2	Secondary
h11450/bh_s5501_klein5000_sss200/2005-311/240_1954	0001	13.88	354.7	Secondary (grouped)

Hydrographer Recommendations

Chart non-dangerous wreck with least depth.

Cartographically-Rounded Depth (Affected Charts):

39ft (12264_1, 12230_1, 12280_1)

6 ½fm (13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 11.924 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ the field.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/small wreck associated with 2006-023.bmp does not exist.]

1.8) Profile/Beam - 5544/147 from h11450 / bh_s5501_reson8125 / 2005-160 / 238_1922

Survey Summary

Survey Position: 38° 18' 35.6" N, 076° 22' 45.6" W
Least Depth: 5.34 m (= 17.52 ft = 2.920 fm = 2 fm 5.52 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.098 m
Timestamp: 2005-160.19:27:48.990 (06/09/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005-160 / 238_1922
Profile/Beam: 5544/147
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Debris from fish haven.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005-160/238_1922	5544/147	0.00	000.0	Primary
h11450/bh_s5501_reson8125/2005-160/238_1922	5517/198	5.77	078.4	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-293/141_1808	0002	14.25	012.4	Secondary (grouped)
h11450/bh_s5501_klein5000_sss200/2005-319/236_1907	0001	20.73	052.9	Secondary (grouped)

Hydrographer Recommendations

Recommend increasing fish haven area to include debris or charting least depth on obstruction.

Cartographically-Rounded Depth (Affected Charts):

17ft (12264_1, 12230_1, 12280_1)

2 $\frac{3}{4}$ fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20080817
 SORIND - US,US,H11450

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 5.341 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is 17' in 21' of water located approx 55m outside Cedar Pt "Fish Haven". This is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/5444-417-fish haven debris.bmp does not exist.]

1.9) Profile/Beam - 7638/173 from h11450 / bh_s5501_reson8125 / 2005-160 / 239_1910

Survey Summary

Survey Position: 38° 18' 45.9" N, 076° 23' 05.3" W
Least Depth: 4.65 m (= 15.25 ft = 2.542 fm = 2 fm 3.25 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.098 m
Timestamp: 2005-160.19:18:19.941 (06/09/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005-160 / 239_1910
Profile/Beam: 7638/173
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Debris from fish haven.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005-160/239_1910	7638/173	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss200/2005-319/242_1734	0002	5.42	265.4	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-293/147_1635	0002	7.93	332.8	Secondary (grouped)

Hydrographer Recommendations

Extend fish haven area to include debris or chart as individual obstruction.

Cartographically-Rounded Depth (Affected Charts):

15ft (12264_1, 12230_1, 12280_1)

2 ½fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20080817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 4.649 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is 15' in 20' of water located approx 20m outside Cedar Pt "Fish Haven". This is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/7638-173-fish haven debris.bmp does not exist.]

1.10) Profile/Beam - 4476/126 from h11450 / bh_s5501_reson8125 / 2005-160 / 239_1910

Survey Summary

Survey Position: 38° 18' 38.1" N, 076° 22' 48.8" W
Least Depth: 5.51 m (= 18.07 ft = 3.012 fm = 3 fm 0.07 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.098 m
Timestamp: 2005-160.19:15:12.919 (06/09/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005-160 / 239_1910
Profile/Beam: 4476/126
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Fish haven debris outside charted area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005-160/239_1910	4476/126	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss200/2005-319/237_1851	0001	1.27	102.8	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-293/142_1749	0001	1.73	170.3	Secondary (grouped)

Hydrographer Recommendations

Extend fish haven area to include debris.

Cartographically-Rounded Depth (Affected Charts):

18ft (12264_1, 12230_1, 12280_1)

3fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 5.509 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is 18' in 21' of water located approx 20m outside Cedar Pt "Fish Haven". This is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/4476-126 fish haven.bmp does not exist.]

1.11) Profile/Beam - 186/74 from h11450 / bh_s5501_reson8125 / 2005-160 / 245_1644

Survey Summary

Survey Position: 38° 18' 29.4" N, 076° 22' 22.3" W
Least Depth: 6.52 m (= 21.38 ft = 3.564 fm = 3 fm 3.38 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.098 m
Timestamp: 2005-160.16:44:18.113 (06/09/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005-160 / 245_1644
Profile/Beam: 186/74
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Fish haven debris, just outside charted area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005-160/245_1644	186/74	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss200/2005-321/229_1437	0002	13.38	064.4	Secondary
h11450/bh_s5501_klein5000_sss100/2005-297/134_1657	0002	15.95	092.8	Secondary

Hydrographer Recommendations

Extend fish haven area to include debris.

Cartographically-Rounded Depth (Affected Charts):

21ft (12264_1, 12230_1, 12280_1)

3 ½fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 6.518 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is 21' in 24' of water located approx 5m outside Cedar Pt "Fish Haven". This is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/186-74 fish haven debris.bmp does not exist.]

1.12) Profile/Beam - 9480/34 from h11450 / bh_s5501_reson8125 / 2005-160 / 247_1702

Survey Summary

Survey Position: 38° 18' 30.2" N, 076° 22' 21.0" W
Least Depth: 6.89 m (= 22.60 ft = 3.766 fm = 3 fm 4.60 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.098 m
Timestamp: 2005-160.17:11:23.223 (06/09/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005-160 / 247_1702
Profile/Beam: 9480/34
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Fish haven debris outside charted area.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005-160/247_1702	9480/34	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss100/2005-297/134_1657	0001	7.28	104.5	Secondary (grouped)
h11450/bh_s5501_klein5000_sss200/2005-321/228_1451	0001	10.75	072.8	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-297/133_1719	0006	30.91	340.1	Secondary

Hydrographer Recommendations

Extend fish haven area to include debris.

Cartographically-Rounded Depth (Affected Charts):

22ft (12264_1, 12230_1, 12280_1)

3 $\frac{3}{4}$ fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 6.888 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is 22' in 24' of water located approx 5m outside Cedar Pt "Fish Haven". This is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/9480-34 fish haven debris.bmp does not exist.]

1.13) Profile/Beam - 2604/63 from h11450 / bh_s5501_reson8125 / 2005-161 / 264_1610

Survey Summary

Survey Position: 38° 18' 40.2" N, 076° 22' 52.9" W
Least Depth: 5.56 m (= 18.23 ft = 3.039 fm = 3 fm 0.23 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.920 m ; **TVU (TPEv)** ± 0.098 m
Timestamp: 2005-161.16:13:38.909 (06/10/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005-161 / 264_1610
Profile/Beam: 2604/63
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Debris just outside fish haven.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005-161/264_1610	2604/63	0.00	000.0	Primary
h11450/bh_s5501_klein5000_sss100/2005-293/143_1734	0002	6.15	337.3	Secondary
h11450/bh_s5501_klein5000_sss200/2006-065/200_1915	0002	13.52	203.8	Secondary

Hydrographer Recommendations

Extend fish haven to include debris.

Cartographically-Rounded Depth (Affected Charts):

18ft (12264_1, 12230_1, 12280_1)

3fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 5.557 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. Obstruction Debris sounding is 18' in 20' of water located approx 5m outside Cedar Pt "Fish Haven". This is a permitted feature, AHB recommends charting as "Obstruction" and defers the "Fish Haven" bounding issue to MCD.

1.14) Profile/Beam - 955/216 from h11450 / bh_s5501_reson7125 / 2006-100 / 946_1845

Survey Summary

Survey Position: 38° 18' 51.2" N, 076° 21' 25.0" W
Least Depth: 10.81 m (= 35.45 ft = 5.909 fm = 5 fm 5.45 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.923 m ; **TVU (TPEv)** ± 0.187 m
Timestamp: 2006-100.18:46:20.006 (04/10/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-100 / 946_1845
Profile/Beam: 955/216
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Unidentified obstruction.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-100/946_1845	955/216	0.00	000.0	Primary
h11450/bh_s5501_reson7125/2006-100/945_1834	799/30	0.85	168.7	Secondary
h11450/bh_s5501_klein5000_sss200/2005-311/223_1652	0001	15.89	024.9	Secondary

Hydrographer Recommendations

Chart least depth or obstruction.

Cartographically-Rounded Depth (Affected Charts):

35ft (12264_1, 12230_1, 12280_1)

5 $\frac{3}{4}$ fm (13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 10.806 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB w/clarification. This depth was found during Office Processing. Recommend charting "non-dangerous Wreck" least depth 10.806m.

1.15) Profile/Beam - 411/220 from h11450 / bh_s5501_reson7125 / 2006-100 / 983_1818

Survey Summary

Survey Position: 38° 18' 24.0" N, 076° 21' 19.7" W
Least Depth: 10.91 m (= 35.80 ft = 5.966 fm = 5 fm 5.80 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 3.923 m ; TVU (TPEv) ± 0.183 m
Timestamp: 2006-100.18:18:42.908 (04/10/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-100 / 983_1818
Profile/Beam: 411/220
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

AWOIS #3678, investigated with 200% side scan sonar. One small boat (10 m by 2.5 m) found approximately 200 meters WNW from charted PA wreck position within AWOIS radius. Developed with multibeam.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-100/983_1818	411/220	0.00	000.0	Primary

Hydrographer Recommendations

Remove charted PA wreck and chart in surveyed position. Update AWOIS DB.

Cartographically-Rounded Depth (Affected Charts):

36ft (12264_1, 12230_1, 12280_1)

6fm (13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)
Attributes: CATWRK - 1:non-dangerous wreck
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 10.911 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ clarification. This depth was found during Office Processing. Chart non-dangerous wreck least depth 10.911m.

2 - AWOIS Features

2.1) AWOIS #12998 - AWOIS #12998- OBSTRUCTION Fish Haven NW Ext

No Primary Survey Feature for this AWOIS Item

Search Position: 38° 19' 02.0" N, 076° 23' 02.0" W
Historical Depth: 4.57 m
Search Radius: 0
Search Technique: SD, S2, SWMB
Technique Notes: SEARCH FISH HAVEN LIMITS (SEE BELOW FOR GP'S)

History Notes:

CL855/88 -- USACOE PERMIT; ARTIFICIAL REEF CONSTRUCTION MD DEPT OF NATURAT RESOURCES. WITH AN AUTH MIN DEPTH 15 FT. ■LAT, LONG■38-19-02, 76-23-02■38-18-40, 76-22-15■38-18-32, 76-22-24■38-18-49, 76-23-13

Survey Summary

Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

No single item was found in this position, however, various items were identified in and around the charted fish haven area defined by this AWOIS item.

Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-E349-O5-AWOIS	AWOIS # 12998	0.00	000.0	Primary

Hydrographer Recommendations

Extend fish haven extents to include surrounding debris.

S-57 Data

[None]

Office Notes

Concur w/ clarification. This is a permitted feature, AHB defers the "Fish Haven" bounding issue to MCD.

2.2) AWOIS #12999 - OBSTRUCTION Fish haven

No Primary Survey Feature for this AWOIS Item

Search Position: 38° 20' 39.6" N, 076° 22' 58.8" W
Historical Depth: 4.57 m
Search Radius: 0
Search Technique: SD, S2, SWMB
Technique Notes: SEARCH FISH HAVEN LIMITS (SEE BELOW FOR GP'S)

History Notes:

L-1624/03 -- TOM HUMBLER OF THE MARYLAND ENVIRONMENTAL SERVICE; THE AUTHORIZED MINIMUM CLEARANCE FOR LITTLE COVE POINT ARTIFICIAL REEF SITE HAS BEEN REVISED TO 15 FT FROM 19FT. THE REEF HAS MOVED SLIGHTLY NORTHEAST THE NEW COORDINATES ARE: 38-20-39.6N, 76-22-58.8W; 38-39.6N, 76-22.-37.8W; 38-20-24N, 76-22-37.8W; 38-20-24N, 76-22-58.8W. (ENTERED 3/22/05, JRS) ■ L-1086/66 -- FISH HAVEN AUTH MIM DEPTH 19 FT IN THIS LOCATION 38-20-52, 76-22-48.

Survey Summary

Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

No single item was found in this position, however, various items were identified in and around the charted fish haven area defined by this AWOIS item.

Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-E349-O5-AWOIS	AWOIS # 12999	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

[None]

Office Notes

Concur

2.3) AWOIS #3677 - UNKNOWN

No Primary Survey Feature for this AWOIS Item

Search Position: 38° 18' 35.9" N, 076° 18' 46.0" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [None]
Technique Notes: [None]

History Notes:

NM25/63--30 FOOT WORK BOAT REPORTED SUNK IN CHESAPEAKE CHANNEL IN 60 FEET ■200 YDS SW OF BUOY 16C, IN PA LAT 38-18-35.5N, LONG 76-18-47.2W. (POSITION ■SCALED FROM CHART AT 1:40,000). (ENTERED MSM 6/85) ■ MAR--11/85;OPR-E609-RU/HE-85; ITEM CONSIDERED DISPROVED; PENDING VERIFICATION;■HYDROGRAPHER RECOMMENDS DELETING WK SYMBOL AND BUOY "PR". (UPDATED MSM 3/86) ■ H01193/85-- S-E211-HFP-85; FATHOMETER SEARCH WITH NEGATIVE RESULTS; DELETION ■RECOMMENDED; REFERENCE FE275SS (SEE BELOW)■ FE275/85SS--(OPR-E609-RU/HE-85); NO SIGNIFICANT SONAR CONTACTS FOUND AFTER ■400% SIDE SCAN SONAR SEARCH. HYDRO. AND EVALUATOR RECOMMEND DELETING ■DANGEROUS WRECK SYMBOL AND CHESAPEAKE CHANNEL OBSTRUCTION LIGHTED BUOY "PR". ■(DIVERS NOTED BUOY ANCHOR COMPLETELY BURIED AND BOTTOM CHARACTER VARIED IN ■VICINITY OF ANCHOR CHAIN FROM MUD TO SILT.) ■■ DESCRIPTION ■ **** LTR; JAMES C. IRWIN C.O. 5CGD TO W.V. HULL, AMC; 10/25/85; MARYLAND ■PILOTS ASSOC. REQUESTS CG EST. PILOT TRANSFER BUOYS IN VIC. CEDAR POINT.■DESIRE WRECK MARKED BY CHESAPEAKE CHANNEL OBSTRUCTION LIGHTED BUOY PR ■BE INVESTIGATED. 5CGD REQUESTS NOS SURVEY WRECK. ■■SURVEY REQUIREMENTS■MISCELLANEOUS--DISPROVED ■ NOT ASSIGNED.

Survey Summary

Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

No significant contact found in 200% side scan sonar investigation.

Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-E349-O5-AWOIS	AWOIS # 3677	0.00	000.0	Primary

Hydrographer Recommendations

Retain AWOIS status as disproved.

S-57 Data

[None]

Office Notes

Concur

2.4) AWOIS #3679 - UNKNOWN

No Primary Survey Feature for this AWOIS Item

Search Position: 38° 18' 37.4" N, 076° 21' 12.8" W
Historical Depth: [None]
Search Radius: 0
Search Technique: [None]
Technique Notes: [None]

History Notes:

NM28/45--CEDAR POINT WRECK LIGHTED BELL BUOY 1A, QK FL G, ESTABLISHED IN 45 FEET 2,150 YDS, 51 DEG. FROM CEDAR POINT LIGHT. MARKS SUNKEN DREDGE COVERED BY 27 FEET. BUOY IS 200 FT., 60 DEG. FROM WRECK. NM41/45--CEDAR POINT LIGHTED BELL BUOY 1A PREVIOUSLY ESTABLISHED 2,150 YDS, 51 DEG. FROM CEDAR POINT LIGHT TO MARK SUNKEN BARGE IS DISCONTINUED. 35 FEET NOW EXISTS OVER WRECK. H7094/45-46--REVIEWER CONSIDERS THIS WRECK DISPROVED BY ECHO SOUNDER INVESTIGATION. LOCAL INFORMATION ALSO INDICATES WRECK ENTIRELY REMOVED. H10193/85--S-E211-HFP-85; FATHOMETER SEARCH WITH NEGATIVE RESULTS; SEARCH NOT CENTERED ON CHART POSITION; HOWEVER, BASED ON RECOMMENDATION IN REPORT FOR H7094/45-46 (SEE ABOVE); REVIEWER RECOMMENDS DELETING WRECK FROM CHART.(UPDATED MSM 1/88)

Survey Summary

Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Item investigated with 200% side scan sonar. No significant contacts found.

Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-E349-O5-AWOIS	AWOIS # 3679	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted. Retain AWOIS DB status.

S-57 Data

[None]

Office Notes

Retain as uncharted. AWOIS #3679 considered disproved.

2.5) AWOIS #3336 - UNKNOWN

No Primary Survey Feature for this AWOIS Item

Search Position: 38° 21' 45.4" N, 076° 23' 10.8" W
Historical Depth: 12.80 m
Search Radius: 0
Search Technique: [None]
Technique Notes: [None]

History Notes:

LN37/80--5TH CGD; A SUNKEN 42 FT PLEASURE CRAFT HAS BEEN REPORTED TIED TO A TREE APPROX. 10 FT OFFSHORE IN PA LAT 38-21-45N, LONG 76-23-12W. (ENTERED MSM 2/86)

Survey Summary

Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Unable to investigate due to position.

Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-E349-O5-AWOIS	AWOIS # 3336	0.00	000.0	Primary

Hydrographer Recommendations

Retain AWOIS DB status.

S-57 Data

[None]

Office Notes

Concur

2.6) AWOIS #4007 - UNKNOWN

No Primary Survey Feature for this AWOIS Item

Search Position: 38° 18' 45.3" N, 076° 24' 59.4" W
Historical Depth: 9.75 m
Search Radius: 100
Search Technique: SD, S2, SWMB,DI
Technique Notes: [None]

History Notes:

H6876/43-44--1:10,000 SCALE SURVEY; THREE POINT FIXES ON SHORE SIGNALS FOR CONTROL; WK DEVELOPED AND DRIFT SOUNDED FOR SEVERAL HOURS; 27 FT BY FATHOMETER; SHOALEST DEPTH BY LEADLINE WAS 32 FT; LOCATED IN LAT 38-18-45.47N LONG 76-25-01.57W; POSITION SCALED FROM SURVEY. (ENTERED 12/17/84 MSM) BP89276/74--OPR-512-AHP-74; CHART DEFICIENCIES SURVEY; ECHO SOUNDER DEVELOPMENT CONFIRMED WRECKAGE AT 34 FT; RETAINED AS CHARTED. (ENTERED MSM 6/85) MAR--11/85, S-E211-HFP-84; WRECKAGE CONFIRMED BY LOCAL KNOWLEDGE AT CHARTED POSITION; LEAST DEPTH OF 32 FT. (UPDATED MSM 5/86) H10193/85--S-E211-HFP-85; WRECK LOCATED IN LAT 38-18-44.91N, LONG 76-25-00.60W (29.2M SOUTHEAST OF CHARTED POSITION); ECHO SOUNDER LEAST DEPTH OF 34 FT.; THIS IS SHOALEST DEPTH OBTAINED BUT SHOULD NOT BE CONSIDERED THE LEAST DEPTH; ADDITIONAL WORK RECOMMENDED TO OBTAIN LEAST DEPTH AND DETERMINE EXTENT OF WRECK/WRECKAGE. (UPDATED MSM 1/88) DESCRIPTION NM 51/42 - CHES. BAY - PATUXENT RIVER - DRUM POINT - WRECK REPORT; BARGE REPORTED SUNK APROX. 500 YARDS SSE OF DRUM POINT LIGHT, 38/19N-76/25W 17 BERMAN, B.D., 1972, ENCYCLOPEDIA OF AMERICAN SHIPWRECKS, #906, CITES WRECK "COLUMBIA" 500 YARDS SOUTH-SOUTHEAST OF DRUM POINT LIGHT ON THE PATUXENT RIVER, CARGO, 359 GT, SUNK 12/16/1942, WITH OLS LILLIAN ANNE 24 NO.4817; "COLUMBIA", CARGO, 359 GT, SUNK 3/15/43 BY MARINE CASUALTY; POSITION ACCURACY 3-5 MILES, POSITION REPORTED BY NAVY REPORT 38/00/00.00, 076/30/00.00 PLOTS ON LAND, SEE AWOIS 1013 61 (UP DAS 10/99)

Survey Summary

Charts Affected: 12284_1, 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Item not within survey limits. Not investigated.

Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-E349-O5-AWOIS	AWOIS # 4007	0.00	000.0	Primary

Hydrographer Recommendations

Retain AWOIS DB status.

S-57 Data

[None]

Office Notes

Concur

2.7) Contact/Point - 0001/1 from h11450 / bh_s5501_klein5000_sss200 / 2005-305 / 223_1646

Primary Feature for AWOIS Item #3680

Search Position: 38° 20' 02.3" N, 076° 22' 04.3" W
Historical Depth: 6.40 m
Search Radius: 300
Search Technique: SD, S2, SWMB
Technique Notes: [None]

History Notes:

BP96500/73--U.S. NAVY SURVEY, 1973; DEPTHS IN METERS, RAYDIST CONTROL. 21 FEET ■ LOCATED IN POS. LAT. 38-20-01N, LONG. 76-22-01W. ■ H9826/79--PSR ITEM NO.3 (21 FOOT SNDG, ABOVE). TWO OBSTRUCTIONS HUNG BY ■ BOTTOM CHAIN DRAG WITH OTTER BOARDS. STRONG CURRENT PREVENTED LEADLINE ■ SOUNDING, HOWEVER, LEADLINE CASTS STRUCK METAL OBJECTS AND CHAIN DRAG LINES ■ PULLED UP A SMALL CLUMP OF METAL AND WIRING. OBSTRUCTIONS NOT INDICATED ON ■ FATHOMETER. NO DIVE INVESTIGATION. BOTH OBSTRUCTIONS WERE PLOTTED ON SMOOTH ■ SHEET COVERED 29 AND 30 FEET. THE 29 FOOT OBSTRUCTION WAS CHARTED IN POS. ■ LAT. 38-20-02N, LONG. 76-22-05W. HYDRO. DOES NOT CONSIDER OBSTRUCTIONS ■ DANGEROUS TO NAVIGATION. ■ H10193/85--S-E211-HFP-85; FATHOMETER SEARCH WITH NEGATIVE RESULTS; NO CHANGE ■ IN CHARTING STATUS IS RECOMMENDED. (UPDATED MSM 1/88)

Survey Summary

Survey Position: 38° 20' 02.8" N, 076° 22' 03.8" W
Least Depth: [None]
TPU (±1.96σ): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2006-024.05:26:13 (01/24/2006)
Survey Line: h11450 / bh_s5501_klein5000_sss200 / 2005-305 / 223_1646
Contact/Point: 0001/1
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

AWOIS #3680, Charted Obstns on 29ft. 200% SSS conducted in the AWOIS radius, No significant contacts found.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_klein5000_sss200/2005-305/223_1646	0001	0.00	000.0	Primary

OPR-E349-O5-AWOIS	AWOIS # 3680	18.01	043.9	Secondary
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Hydrographer Recommendations

Remove 29 ft. Obstns and chart as per single beam data.

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Office Notes

AHB concurs w/ the field.

Feature Images

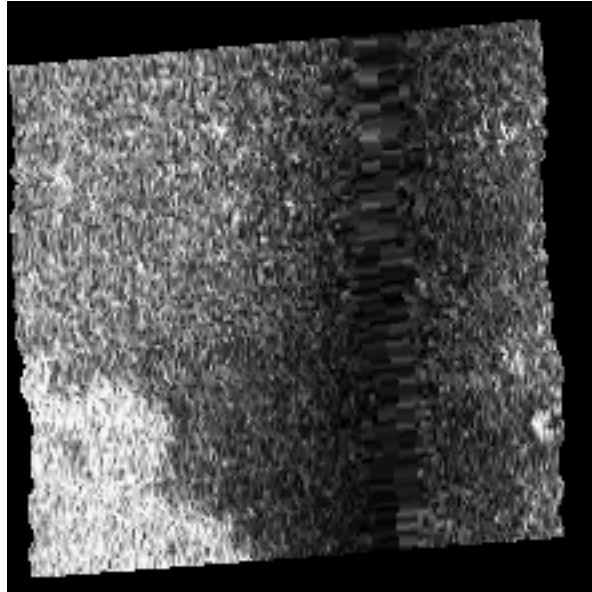


Figure 2.7.1

2.8) Profile/Beam - 275/164 from h11450 / bh_s5501_reson8125 / 2005_325 / 007_1925

Primary Feature for AWOIS Item #4013

Search Position: 38° 20' 29.9" N, 076° 18' 15.7" W
Historical Depth: 28.96 m
Search Radius: 100
Search Technique: SD, S2, SWMB
Technique Notes: [None]

History Notes:

CL1112/61--C.O. AND DIRECTOR, DAVID TAYLOR MODEL BASIN (USN) TO COE (BALT.) USS DRAGONET (SS-293) SUNK 9/17/61 DURING UNDERWATER EXPLOSION TEST AT LAT 38-20-30N LONG 76-18-15W HEADING 240 DEG T. IN 150 FT DEPTHS; 135 FT OVER MAIN STRUCTURE; 95 FT WATER OVER APPURTENANCE OF MAIN STRUCTURE (SIX PIPE FLAGSTAFFS ERECTED FOR WHIPPING STUDY); CHARTED AS SUBM NONDANG WK PA WITH LEGEND 95 FT REP (ENTERED 12/14/84 MSM) ■ MAR--4/86, S-E211-HFP-86; 400% SIDE SCAN SONAR OVER CHARTED AND CONTACT AREAS; ECHO SOUNDER LEAST DEPTH; NO SIGNIFICANT SHADOW PRODUCED; RETAIN AS CHARTED WITH CORRECTED LEAST DEPTH. (UPDATED MSM 9/86) ■ FE280/86,S-E211-HFP-86; WK LOCATED IN LAT 38-20-29.43N, LONG 76-18-16.91W WITH AN ECHOSOUNDER DEPTH OF 137 FT (NOT A LD). RECOMMENDED CHARTING AS NONDANGEROUS WK (95 FT REP).(UP SRB 8/89)■DESCRIPTION■ 180 SUBMARINE DRAGONET (SS-293) DISPLACEMENT 1,526; LENGTH, 311 FT., 8 IN.; ■ BEAM. 27 FT. 3 IN.; DRAFT, 15 FT. 3 IN.; SPEED, 20 KTS.; COMPLEMENT, 66; ■ ARMAMENT, ONE 4 IN. GUN; 10 21 IN. TORPEDO TUBES; CLASS "GATO"

Survey Summary

Survey Position: 38° 20' 29.8" N, 076° 18' 16.0" W
Least Depth: 41.24 m (= 135.31 ft = 22.552 fm = 22 fm 3.31 ft)
TPU (±1.96σ): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2005-325.19:27:16.249 (11/21/2005)
Survey Line: h11450 / bh_s5501_reson8125 / 2005_325 / 007_1925
Profile/Beam: 275/164
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

Submarine Dragonet - very little wreckage left

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson8125/2005_325/007_1925	275/164	0.00	000.0	Primary
h11450/bh_s5501_reson8125/2005-325/007_1925	275/164	0.00	000.0	Secondary
OPR-E349-O5-AWOIS	AWOIS # 4013	8.44	246.6	Secondary
h11450/bh_s5501_klein5000_sss100/2005-304/112_1727	0001	16.76	311.8	Secondary
h11450/bh_s5501_klein5000_sss200/2005-325/209_1634	0001	20.30	305.9	Secondary

Hydrographer Recommendations

Retain charted as non-dangerous wreck, remove text "95 ft rep"

Cartographically-Rounded Depth (Affected Charts):

135ft (12264_1, 12230_1, 12280_1)

22fm (13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 1:non-dangerous wreck
 OBJNAM - Submarine Dragonet
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 41.243 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

AHB concurs w/ the field, Recommends updating the chart.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/007_1925.bmp does not exist.]

3 - Dangers to Navigation

3.1) Profile/Beam - 1401/200 from h11450 / bh_s5501_reson7125 / 2006-122 / 008_1615

DANGER TO NAVIGATION

Survey Summary

Survey Position: 38° 20' 50.8" N, 076° 22' 58.4" W
Least Depth: 2.23 m (= 7.30 ft = 1.217 fm = 1 fm 1.30 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 3.922 m ; **TVU (TPEv)** ± 0.204 m
Timestamp: 2006-122.16:16:20.221 (05/02/2006)
Survey Line: h11450 / bh_s5501_reson7125 / 2006-122 / 008_1615
Profile/Beam: 1401/200
Charts Affected: 12264_1, 12230_1, 12280_1, 13003_1

Remarks:

This feature is the least depth on one of a number of submerged pound net (fish weir) stakes. The stakes are arranged in a linear pattern, with the northernmost stake located at 38°20'52.143" , -076°23'00.647", and the southernmost stake at 38°20'48.278" , -076°22'54.387".

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11450/bh_s5501_reson7125/2006-122/008_1615	1401/200	0.00	000.0	Primary
h11450/bh_s5501_reson8125/2006-020/936_1635	1356/158	0.45	334.6	Secondary
h11450/bh_s5501_reson8125/2006-020/936_1635	1427/229	7.32	123.9	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/936_1635	1427/239	7.37	123.6	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-265/108_1356	0001	7.46	240.3	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/947_1630	1196/228	8.51	311.8	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/943_1605	1537/231	12.86	129.3	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-265/109_1419	0002	13.08	028.7	Secondary
h11450/bh_s5501_reson8125/2006-020/948_1622	1467/1	15.22	311.0	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/943_1605	1601/67	21.05	128.6	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/948_1622	1417/122	22.02	310.2	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/948_1622	1386/211	27.63	308.4	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/944_1613	1684/240	27.87	127.4	Secondary (grouped)
h11450/bh_s5501_reson7125/2006-122/007_1601	1090/251	28.10	125.8	Secondary (grouped)

h11450/bh_s5501_reson8125/2006-020/949_1609	1440/240	29.40	311.7	Secondary (grouped)
h11450/bh_s5501_klein5000_sss100/2005-265/109_1419	0001	34.08	321.5	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/944_1613	1747/207	34.25	127.5	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/949_1609	1497/212	36.75	309.3	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/944_1613	1807/100	40.36	127.3	Secondary (grouped)
h11450/bh_s5501_reson8125/2006-020/949_1609	1560/86	43.70	310.0	Secondary (grouped)
h11450/bh_s5501_reson7125/2006-122/007_1609	2828/255	56.37	308.7	Secondary (grouped)
h11450/bh_s5501_reson7125/2006-122/007_1609	1960/12	109.09	309.3	Secondary (grouped)

Hydrographer Recommendations

The hydrographer recommends charting a 7ft obstruction located in the position of this pound net stake.

Cartographically-Rounded Depth (Affected Charts):

7ft (12264_1, 12230_1, 12280_1)

1 ¼fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: QUASOU - 6:least depth known
 SORDAT - 20060817
 SORIND - US,US,nsurf,H11450
 TECSOU - 2,3:found by side scan sonar,found by multi-beam
 VALSOU - 2.225 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

Office Notes

AHB Concurrs with clarification. Stakes should be charted an area obstruction encompassing the series of stakes with least depth of 2.225 meters.

[Image file z:/opr-e349-bh-05-cenchesbay/bay_hydrographer_2006/h11450/pss/photos/fish weir.bmp does not exist.]

Appendix 3: Final Progress Sketch and Survey Outline

Appendix 4: Tides and Water Levels

March 01, 2007

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: LT(jg) Briana Welton, BAY HYDROGRAPHER

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. Six Minute Water Level data (Co-ops web site)

Transmit data to the following:

NOAA/NOS/Atlantic Hydrographic Branch
N/CS33, Building #2
439 West York Street
Norfolk, VA 23510
ATTN: Chief AHB

These data are required for the processing of the following hydrographic survey:

Project No.: OPR-E349-BH-05
Registry No.: H11450
State: MD
Locality: CENTRAL CHESAPEAKE BAY
Sublocality: CEDAR PT TO LITTLE COVE PT

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from Pydro

cc: N/CS33

Year_DOY	Min Time	Max Time
2005_161	16:00:43	16:19:08
2005_236	16:31:43	18:57:21
2005_237	13:49:32	19:12:01
2005_244	13:42:16	17:24:03
2005_262	13:55:49	18:34:06
2005_264	13:32:27	19:15:41
2005_265	13:01:59	15:35:20
2005_286	14:41:45	17:42:58
2005_291	14:05:19	19:29:40
2005_293	15:56:53	19:54:45
2005_297	15:59:35	17:36:33
2005_300	17:14:19	20:26:02
2005_304	15:13:50	20:04:43
2005_305	14:25:32	17:02:31
2005_307	14:03:34	20:54:34
2005_308	13:59:48	15:52:41
2005_311	15:01:55	21:04:38
2005_312	17:58:29	21:08:13
2005_313	14:16:09	20:48:56
2005_319	15:57:10	20:43:23
2005_321	14:19:44	18:26:00
2005_325	14:29:56	20:20:59
2006_010	18:11:51	18:39:49
2006_017	18:32:01	21:03:38
2006_019	14:56:16	16:55:00
2006_020	15:00:38	17:11:37
2006_032	19:38:17	21:14:16
2006_053	18:06:36	20:45:53
2006_100	17:54:50	18:52:30
2006_108	13:50:56	19:47:01
2006_122	15:57:42	16:23:44
2006_170	16:09:02	19:08:09



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



Final tide zone node point locations for OPR-E349-BH-2005, H11450

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

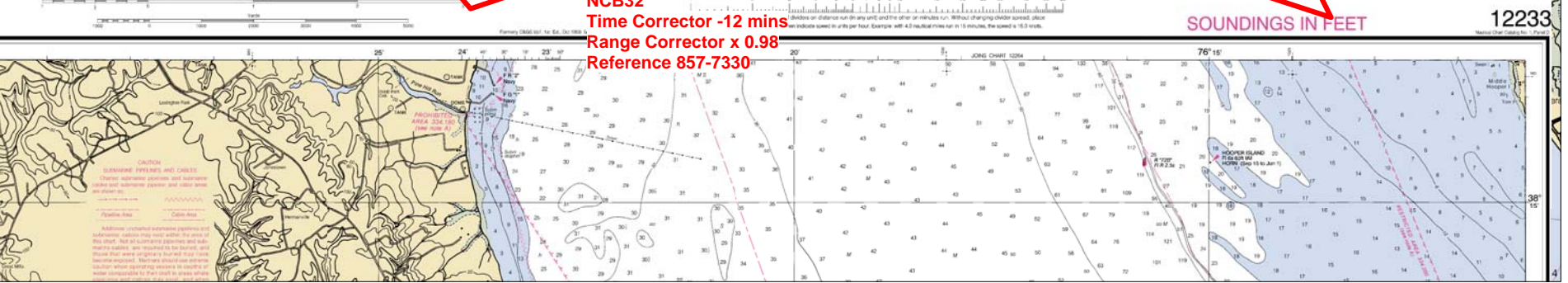
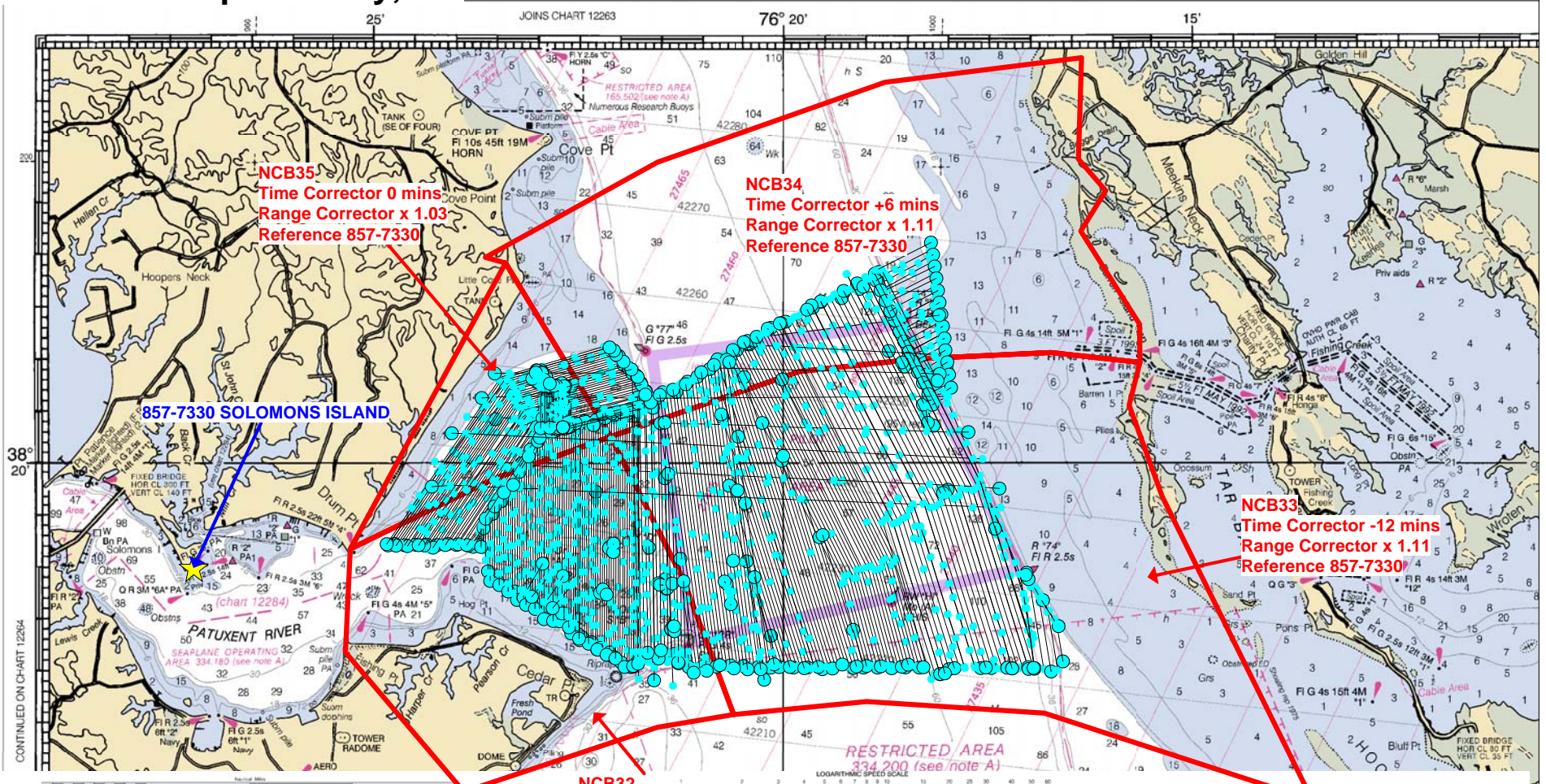
	Tide Station Order	AVG Time Correction	Range Correction
Zone NCB32	857-7330	-12	0.98
-76.398273 38.280616			
-76.358828 38.290979			
-76.343301 38.293031			
-76.353531 38.31465			
-76.368333 38.337668			
-76.392011 38.330938			
-76.421418 38.319629			
-76.422403 38.30303			
-76.398273 38.280616			
Zone NCB33	857-7330	-12	1.11
-76.368333 38.337668			
-76.353531 38.31465			
-76.343301 38.293031			
-76.316207 38.295106			
-76.280004 38.293249			
-76.225379 38.279235			
-76.255989 38.328057			
-76.262716 38.342711			
-76.260515 38.349571			
-76.278685 38.351156			
-76.305608 38.35017			
-76.329923 38.348113			
-76.368333 38.337668			
Zone NCB34	857-7330	6	1.11
-76.393889 38.366439			
-76.389772 38.365555			
-76.368333 38.337668			
-76.329923 38.348113			
-76.305608 38.35017			
-76.278685 38.351156			
-76.260515 38.349571			
-76.260586 38.35572			
-76.272565 38.370654			
-76.2675 38.37714			

-76.27305 38.382211			
-76.272424 38.398472			
-76.312494 38.394531			
-76.358826 38.381718			
-76.393889 38.366439			
Zone NCB35	857-7330	0	1.03
-76.368333 38.337668			
-76.389772 38.365555			
-76.421418 38.319629			
-76.392011 38.330938			
-76.368333 38.337668			

Final Tidal Zoning for OPR-E349-BH-2005, H11450 Central Chesapeake Bay, MD

A nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for this chart to the Chief, Marine Chart Division (NCS2), National Ocean Service, Silver Spring, Maryland 20910 - 3262.

12230 LORAN-C OVERPRINTED

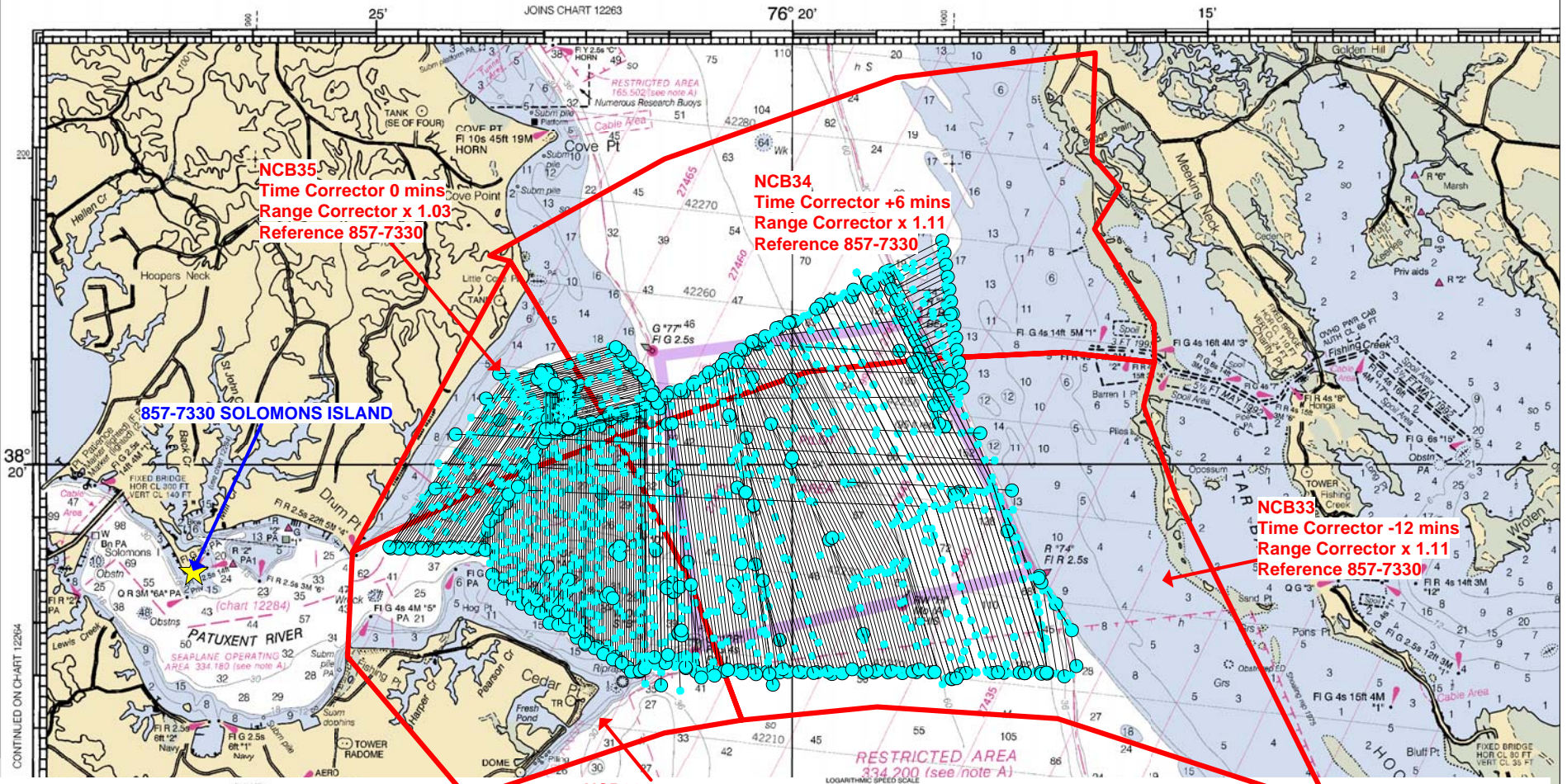


Final Tidal Zoning for OPR-E349-BH-2005, H11450 Central Chesapeake Bay, MD

A nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for this chart to the Chief, Marine Chart Division (NCS2), National Ocean Service, Silver Spring, Maryland 20910 - 3282.

12230

LORAN-C OVERPRINTED

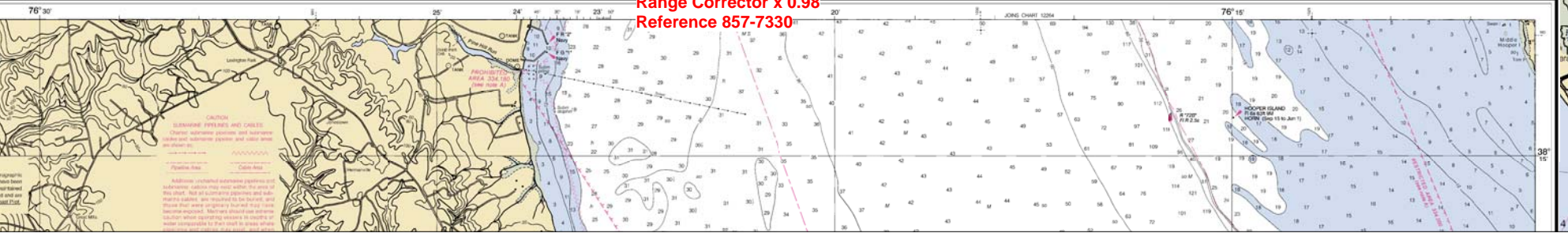


CONTINUED ON CHART 12264

NCB32
Time Corrector -12 mins
Range Corrector x 0.98
Reference 857-7330

SOUNDINGS IN FEET

12233



CAUTION
SUBMERGED OBSTACLES AND CALED
Charted obstructions positions and bearings
are based on information received and are not
guaranteed to be correct. Users are advised to
exercise caution when navigating in these areas.
Additional uncharted obstructions may be
present. Users are advised to exercise caution
when navigating in these areas.
Soundings are based on mean low water unless
otherwise indicated. Users are advised to
exercise caution when navigating in these areas.

Appendix 5: Supplemental Survey Records and Correspondence

From <Briana.Welton@noaa.gov>
Sent Thursday, March 1, 2007 10:41 am
To SmoothTides <Smooth.Tides@noaa.gov>
Cc Tod Schattgen <Tod.Schattgen@noaa.gov> doug.baird@noaa.gov paul.turner@noaa.gov jake.yoos@noaa.gov
Bcc
Subject H11450 Request for Final, Approved Water Levels (OPR-E349-BH-05)
Attachments H11450_FINAL_WATER_LEVEL_REQUEST.zip 78K

The zipped tides request is attached for H11450.

V/r,

Bri

LTJG Briana Welton, NOAA
NOAA S/V Bay Hydrographer
410-916-3831

From <Briana.Welton@noaa.gov>
Sent Thursday, March 1, 2007 11:35 am
To hydro.info@noaa.gov
Cc Tod Schattgen <Tod.Schattgen@noaa.gov> paul.turner@noaa.gov michael.davidson@noaa.gov
Bcc
Subject H11450 data submission size (OPR-E349-BH-05)
Raw:

SSS & MBES: 217 GB
SBES: 29.1 GB

Processed:

SSS: 59.4 GB
MBES: 7.0 GB
SBES: 1.65 GB

TOTAL: 313.15

From Eric.M.Moore@noaa.gov
Sent Monday, June 19, 2006 5:44 pm
To mcd.dton@noaa.gov
Cc Briana.Welton@noaa.gov
Bcc
Subject DtoN, OPR-E349-BH
Attachments DtoN_1.pdf 7K

Attached is a danger to navigation report on an obstruction located in the survey area of project OPR-E349-BH. It is a sounding located on one of numerous submerged stakes, which have been identified as the ruins of a pound net (fish weir). Please direct any questions to myself or Briana Welton on the Bay Hydrographer.

Eric Moore
Physical Scientist
NOAA S/V Bay Hydrographer
(410)916-3831

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Survey H11450 (2006)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

A. AREA SURVEYED

This hydrographic survey was partially conducted in accordance with Hydrographic Survey Letter Instructions for project OPR-E349-BH-05. The original instructions are dated July 3, 2005. See section D of this document for further details.

B. DATA ACQUISITION AND PROCESSING

B.1 EQUIPMENT

The following software was used to process data at the Atlantic Hydrographic Branch:

HSTP PYDRO version 8.6 r2366
CARIS HIPS/SIPS version 6.1 SP2 HF 1-13
CARIS Bathy Manager version 2.1 HF 1-7
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3
CARIS S57 Composer version 1.0

B.2. QUALITY CONTROL

B.2.1. H-Cell

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

The final products for this survey:

Finalized Source Grids

AHB_H11450_7125_2m_Final.hns
AHB_H11303_7125_50cm_Final.hns
AHB_H11303_FishWeir_50cm_Final.hns
AHB_H11303_NE_Developments_1m_Final.hns
AHB_H11303_NorthernFishObstn_50cm_Final.hns
AHB_H11303_SE_Developments_1m_Final.hns
AHB_H11303_SW_Developments_50cm_Shallow_Final.hns
AHB_H11303_VBES_2m_Final_Shoal.hns

The H11450 CARIS H-Cell final deliverables include the following products:

US511450_CS.000	1:40,000 Scale	H11450 H-Cell with Chart Scale Selected Soundings
US511450_SS.000	1:10,000 Scale	H11450 Selected Soundings (Survey Scale)
US511450_BlueNotes.000	1:40,000 Scale	H11450 Cartographic Notes

See attached Pre-compile log for the further information regarding the creation of this H-Cell product.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

H11450 (30th Edition, 2007/07)
Corrected through NM 07/14/2007
Corrected through LNM 07/03/2007
Scale 1:40,000

ENC Comparison

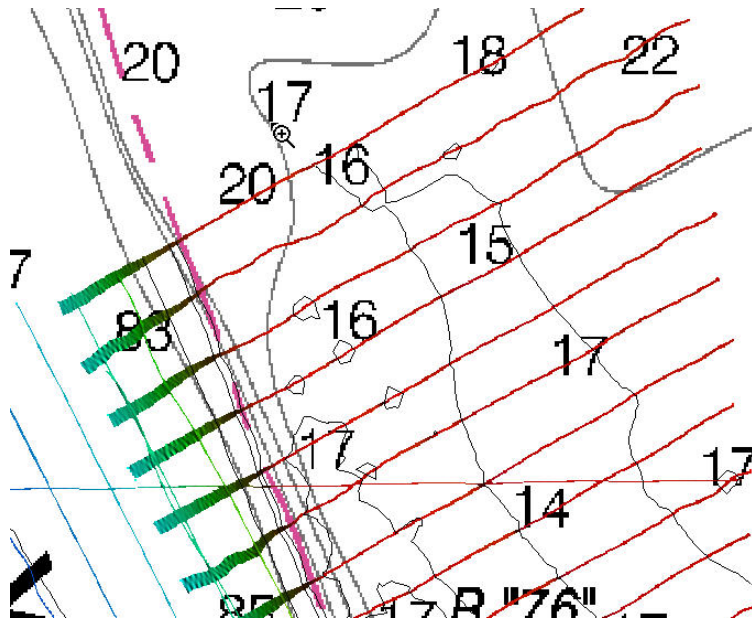
US5MD21M
Chesapeake Bay Patuxent River and Vicinity
Edition 6
Update Application Date 2007-07-10
Issue Date 2008-07-01
References: Chart 1264

US5MD31M
Patuxent River Solomons Is and Vicinity
Edition 4
Update Application Date 2007-03-26
Issue Date 2008-05-30
References: Chart 12284

D.1.1 Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section “D” and Appendix 1&2 of the Descriptive Report. The following exceptions are noted:

1. The field failed to submit backscatter along with all the Reson 8125 data as per letter instructions section **6.5.3.4**. The submission of backscatter is “desirable... whenever feasible” and thus failure to submit does not constitute a strict break from instructions.
2. Section **6.4.1.2** of the Standing Instructions at the time of the survey states that when surveying above the 8 meter contour “run 25-meter line spacing SWMB parallel to the contours or 25-meter line spacing VBES”. The field party failed to meet this requirement. In the northeast section of the survey SWMB lines were run across contours traveling at times from depths in excess of 100 feet to depths as shoal as 14 feet. The line spacing here was 100 meters. In other parts of the survey above the 8 meter contour, line spacing was no less than 40 meters. Given the shoal depths in the North East, side scan data was not collected, furthering the importance of tighter line spacing.



3) This Descriptive Report applies to sheet “F” of project OPR-E349-BH-05, an area in the central Chesapeake Bay from Cedar Point to Little Cove Point (*Fig. 1*). The project instructions list sheet “F” as the first priority and list a sheet “C” as being of secondary importance. Sheet “F” is the area surveyed by the field. Sheet “C” is not mentioned in the field submitted DR. As it was of lower priority, the field’s failure to acquire data is not a violation of the instructions, but no reason was given by the field as to why the area was not investigated.

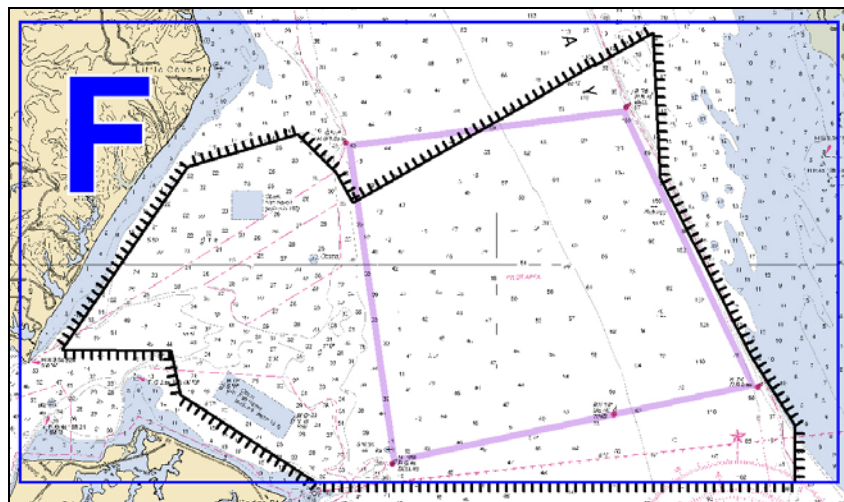


Fig. 1

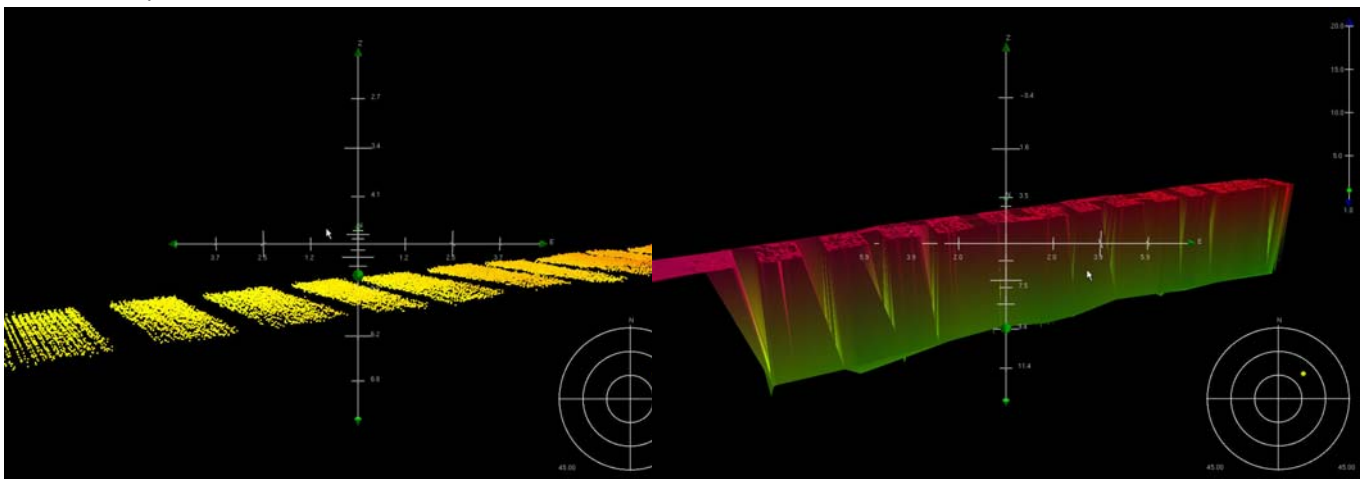
4) The field makes no mention of the ENC in the chart comparison section of the submitted DR.

5) The field was inconsistent with the name of its field sheets and surfaces. The submitted Field Sheet named “H11450_NorthernFishObstn” contained base surfaces in its sub-directory named “H11450_NorthernFishHaven”.

6) The Bay Hydro experienced a systematic error in their Reson 7125 multibeam system. The DR states that a “severe pole-wobble artifact is found in data acquired on DN 2006-170 over the shoal in the northeast corner of the sheet (Figure 5 in Section D). Outer-beams beyond 20 degrees were filtered out in order to stay within acceptable errors to meet IHO Order 1”. AHB investigation revealed that this was not the case. The field submission still included errors from this problem that were in excess (≤ 3.82 m based on IHO S-44 order 1 standard for specs and deliverables- S & D 5.1.1.1. Accuracy Standards). The affected lines: Project- BH_S5501_RESON7125,Day-2006_170-Lines:001_1609,005_1615, 009_1620,014_1624, 018_1629, 022_1633, 026_1639, 030_1644, 034_1651, 038_1657, 042A_1704, 046_1710, 050_1710 were filtered to 1.0 m across the track distance to both the Port and Starboard sides in order to salvage the bathymetric depths for the coverage area. This error was also prevalent in other areas of coverage.

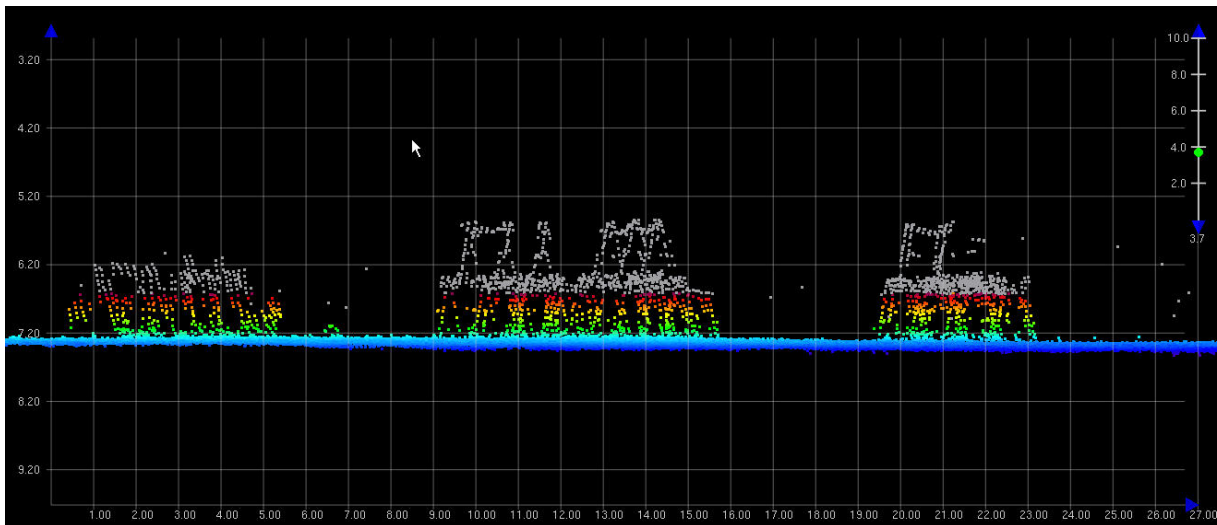
7) The VBES signal for day: 2005_321/Line:227_1508 dropped-out abruptly while the ship track line navigation continues. There is no mention of this in the DR.

There also appears to be a systematic beam drop out in much of the 7125 SWMB lines collected in the north east of the survey. Again, there is no mention of this in the DR.



8) As commented in the Pre-Compile Log, there were numerous instances of shoal fliers remaining in the VBES data that clearly presented to the office processor as dangerous obstructions. The field makes no note of these obstructions and made no MBES developments. These obstructions were eventually determined at AHB to be fish and removed from the bathy. However this assessment was not an easy one given the poor side scan quality, the lack of supporting bathymetry, and the fact that several of these fish returns were close to areas of varying topography or obstruction areas where the possibility of encountering a DtoN was good.

9) The field did reject good data in HIPS and thus lopped off the tops of several features, designating the middle of the feature as the shoalest point. The rejected data was reaccepted and the proper least depths were obtained.



10) The SSS200 signal for day: 2005_321/Line: 227_1508 dropped-out abruptly. There is no mention of this in the DR. There was a parallel SSS200 line (227_1526) adjacent to it that has complete continuity.

11) The field submitted one DtoN with the survey, least depth 7 feet. They noted a 13 foot obstruction 111 meters South East of the seven foot DtoN. They deemed the 13 foot obstruction of sufficient proximity to the DtoN so as to prevent it from being submitted as a separate DtoN (despite being 10 feet shoaler than the surrounding water depth and outside the danger circle of the 7 foot obstruction). The office concluded that the series of shoal soundings in the vicinity were all part of one obstruction (a line of underwater stakes) and feels that the obstruction should be redrawn as an obstruction area to include the entire Danger to Navigation.

12) The fish haven in the south west of the survey is marked by two private buoys at its Eastern and Western extents. The field commented in the DR “The two private buoys marking the fish haven north of Cedar Point move frequently, though they serve their intended purpose.” This statement is ambiguous and no positioning was given in the DR or PSS. The following line of “All other aids were found to be correctly charted and serve their intended purpose”, leads one to believe that the private aids marking off the fish haven were not charted correctly. However due to this ambiguity it was determined to retain the buoys as charted.

D.2. ADDITIONAL RESULTS

D.2.1. Aids to Navigation

The field did not position any aids to navigation. The DR notes that all but two are on station serving their intended purpose. Of those other two, see note 12 in section D.1.1 of this report.

D.3. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey:

D.4. ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

This Document is for Office Process use only and is intended to supplement, not supersede or replace, information/recommendations in the Descriptive or Evaluation Reports

AHB PRE-COMPILATION PROCESS

REGISTRY No.	H11450
PROJECT No.	OPR-E349-BH-05
FIELD UNIT	S/V BAY HYDROGARPHER
PRE-COMPILER	RICHARD SULLIVAN
LARGEST SCALE CHART	12264, edition 30, 20070701
CHART SCALE	1:40,000
SURVEY SCALE	1:10,000
DATE OF SURVEY	20050609 - 20060817
CONTENT REVIEW DATE	7.22.2008

Components	File Names
<i>Product Surface</i>	PS_H11450_10k_10mrad_6mres
<i>Shifted Surface</i>	H11450_AHB_2m_Combined_Shifted_TIN_Interp
<i>Contour Layer</i>	H11450_CONTOURS
<i>Survey Scale Soundings</i>	H11450_SS_Soundings.hob
<i>Chart Scale Soundings</i>	H11450_CS_Soundings.hob
<i>ENC Retain Soundings</i>	H11450_ENC_Retain_Soundings
<i>Feature Layer</i>	H11450_Features.hob
<i>Meta-Objects Layer</i>	H11450_MetaObjects.hob
<i>Blue Notes</i>	H11450_BlueNotes.hob

SPECIFICATIONS:

- I. COMBINED SURFACE:
- a. File name: AHB_H11450_2m_Combined.hns
 - b. Resolution: 2m
 - c. Final Grid Location: H:\Compilation\H11450_E349-BH\H11450_E349-BH\AHB_H11450\E-SAR Final Products\GRIDS
- II. PRODUCT SURFACE (SOUNDINGS):
- a. Scale: 1:10k
 - b. Radius: 100m
 - c. Resolution: 6m
 - d. Depth
 - i. Minimum: 2.22 m
 - ii. Maximum: 46.33 m
- CONTOUR SURFACE: *Generated from an interpolated 2m Combine Surface*
- a. Scale: 1:10000
 - b. Resolution: 20m
- III. SHIFTED SURFACE:
- Single Shift Value: -0.229 [-0.229m (feet), (\leq 10 fathoms)]
[-1.372m(fathoms), ($>$ 10 fathoms)]
- IV. CONTOUR LAYER:
- a. Use a Depth List: H11450_NOAA_depth_curves_list.txt
Depth List: 1.829, 3.658, 5.486, 9.114, 10.973, 18.288, 36.576, 54.864

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- b. Output Options:
 - i. Create contour lines:
 - 1. Line Object: DEPCNT
 - 2. Value Attribute: VALDCO

- V. SOUNDING SELECTION:
 - a. Selection Criteria:
 - i. Radius
 - ii. Shoal biased
 - iii. Use Single-Defined Radius: 50m distance on ground
 - iv. Filter: Generalized !=1

- VI. FEATURES:
 - a. Brought in from Survey
 - Total No. 40
 - b. Brought in from ENC
 - ENC: #US5MD21M
 - Total No. 2

- VII. META-OBJECTS:
 - a. M_COVR attributes

Acronym	Value
INFORM	H11450
SORDAT	20060817
CATCOV	coverage available
SORIND	US,US,survy,H11450

- b. M_QUAL attributes

Acronym	Value
CATZOC	zone of confidence U (data not assessed)
INFORM	H11450, OPR-E349-BH-05, S/V BAY HYDROGARPHER
POSACC	10
SORDAT	20060817
SORIND	US,US,survy,H11450
SUREND	20060817
SURSTA	20050609
TECSOU	Found by echo-sounder, side scan sonar, multibeam

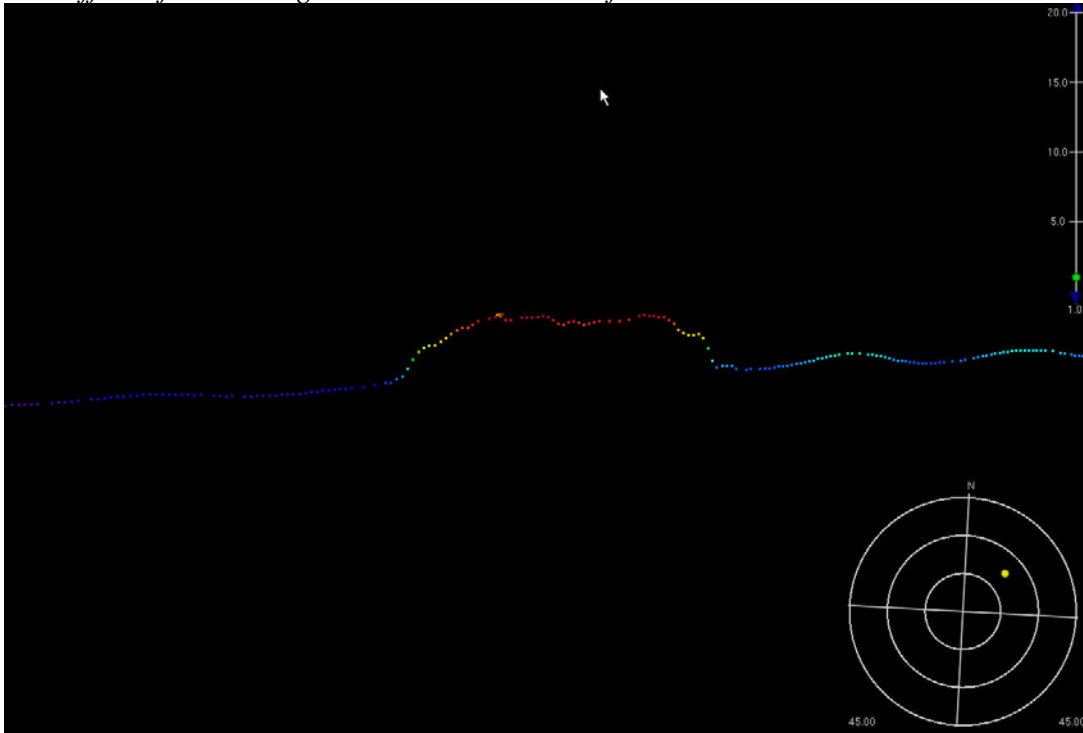
- c. DEPARE attributes

Acronym	Value
DRVALV 1	2.220
DRVALV2	46.330
SORDAT	20060817
SORIND	US,US,nsurf,H11450
INFORM	H11450

VIII. Notes:

1: This survey contained numerous fliers and anomalous sounding values. There were multiple instances of what appeared to be dangerous obstructions in the VBES data, which, upon further investigation by means of Side Scan imagery and Single Beam editor were determined to be fish. The MBES data was poorly cleaned and in numerous occasions a designated sounding was placed on either a flier, or on a sounding not representing the least depth of a feature.

Pictured below is a lump in the single beam, ignored by the field, removed by the office after investigation concluded it was fish.



2: The SWMB 100m line spacing in the North East area of the survey seemed excessive given that depths in that portion of the survey area dropped as low as 14 feet.

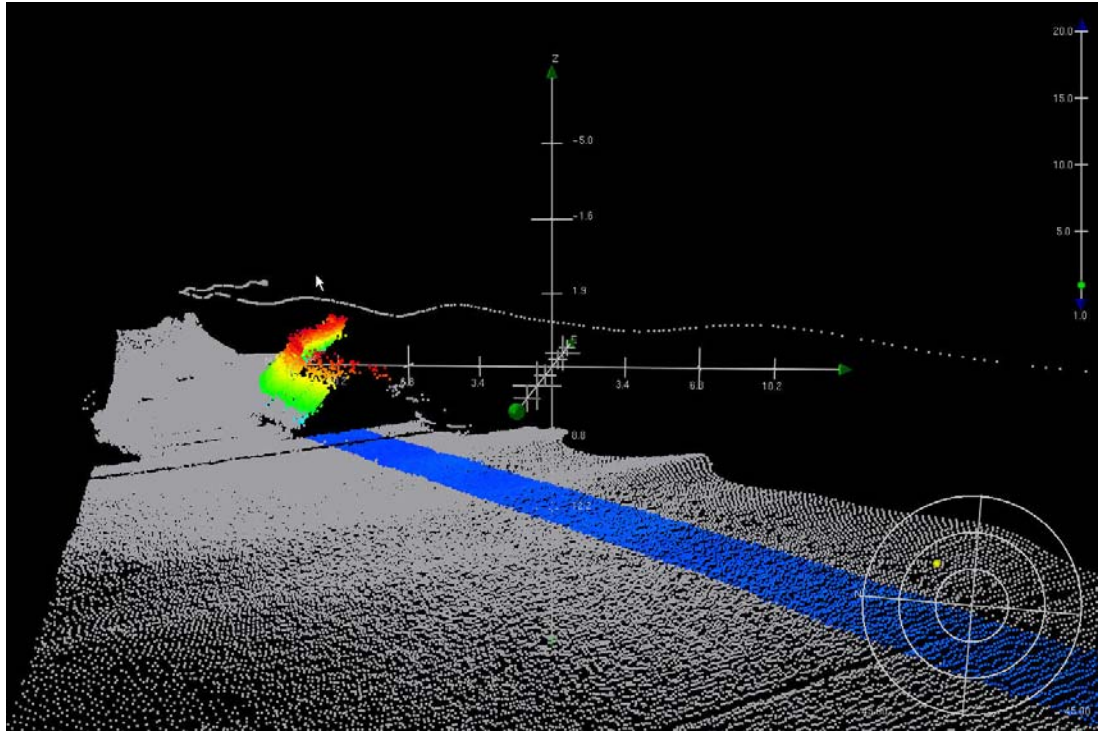
3: Cross lines were not adequately run over the southern area of the survey. There are large areas with no crosslines. In the North Eastern edge there are VBES crosslines run over SWMB mainscheme lines.

4: Significant portions of the survey were rejected by the field due to corrupted data. Examples of bad data still resided in the survey at the time of pre-compilation and were removed by the pre-compiler. In the image below, much of the swath was rejected to compensate for a known "poll wobble". However the

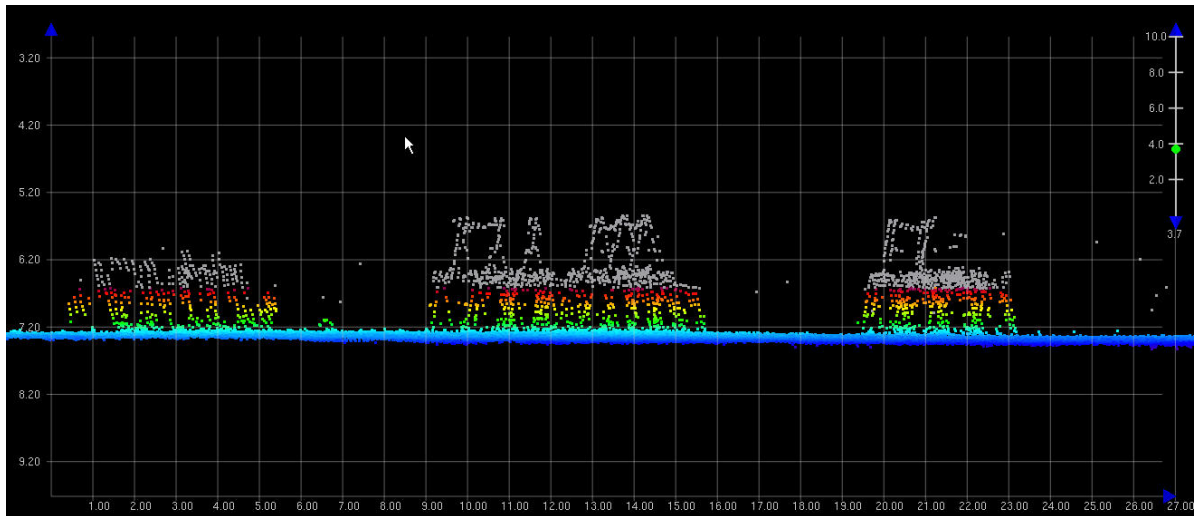
Version 1.0

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“wall” artifact was left in the bathymetry with no explanation. There was no side scan over the area. The pre-compiler rejected the data.



5: The top portions of features had been rejected at one time, and were reaccepted during pre-compilation.



Version 1.0

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7: Due to the lack of side scan and bathymetric coverage, six soundings were retained from the ENC.

1) **13.780**: 38-21-18.849N , 076-18-17.803W

2) **13.780**: 38-21-07.822N , 076-18-11.539W

3) **14.764**: 38-21-05.965N , 076-18-02.729W

4) **13.780**: 38-20-56.137N , 076-17-57.553W

5) **18.701**: 38-18-02.465N , 076-21-36.940W

6) **26.903**: 38-19-11.035N , 076-23-46.205W

APPROVAL SHEET
H11450

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Richard Sullivan
Hydrographic Intern
Atlantic Hydrographic Branch

Edward Owens
Physical Scientist
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: _____
Shepard Smith
Lieutenant Commander, NOAA
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