

F00408

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey **HYDROGRAPHIC/
SIDE SCAN SONAR**
Field No. **HE-10-1-95**
Registry No. **FE-408**

LOCALITY

State **VIRGINIA**
General Locality **CHESAPEAKE BAY**
Sublocality **1.5 NM NORTHWEST OF
NEWPORT NEWS POINT**

19 95

CHIEF OF PARTY

..... **LCDR. G. E. WHITE, NOAA**

LIBRARY & ARCHIVES

DATE **JAN 24 1996**

HYDROGRAPHIC TITLE SHEET

FE-408SS

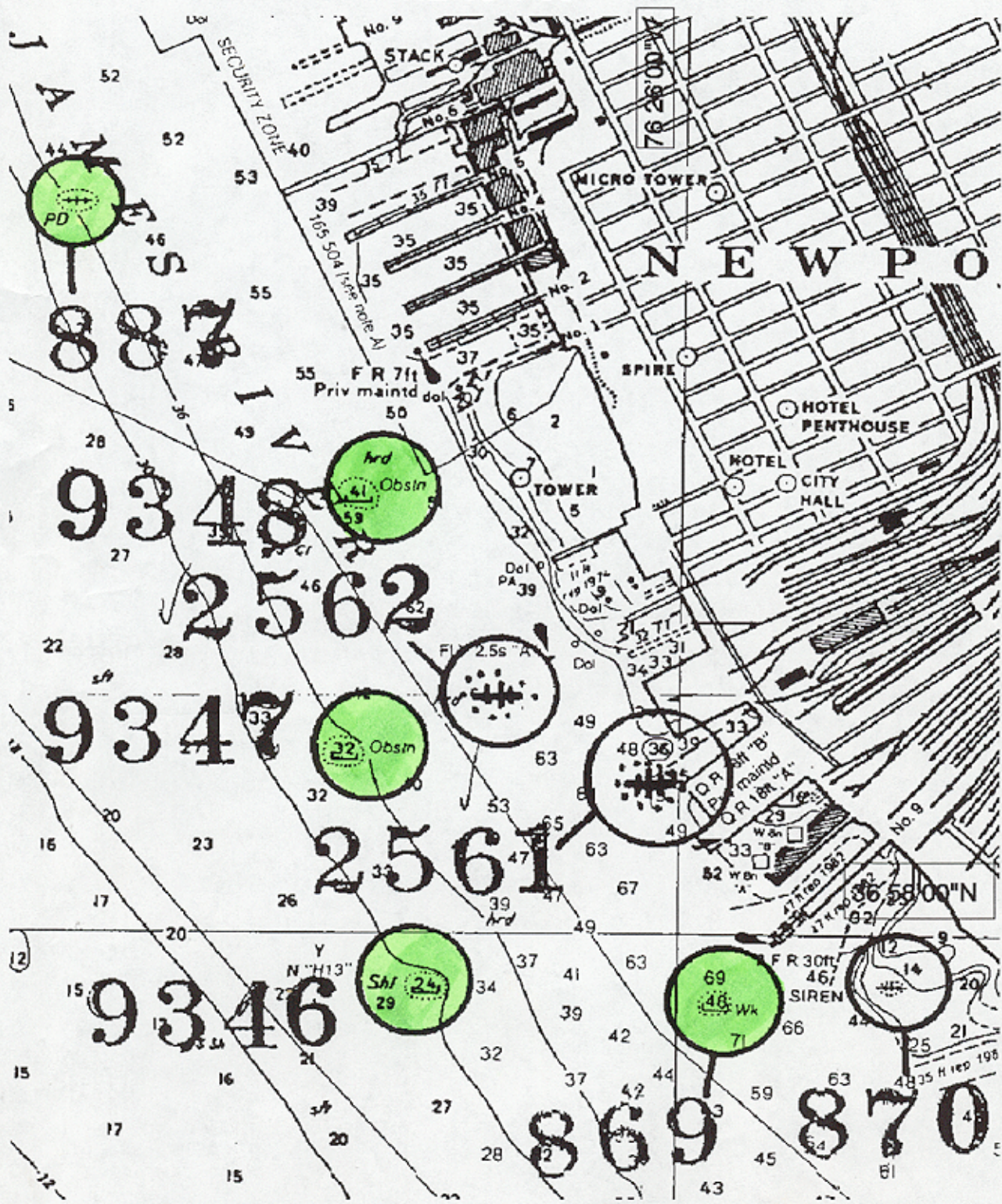
INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

HE-10-1-95

State VIRGINIAGeneral locality CHESAPEAKE BAYLocality 1.5nm NORTHWEST OF NEWPORT NEWS POINTScale 1:10,000Date of survey 01 March, 1995 - 08 May, 1995Instructions dated 01 March, 1994Project No. OPR-E696-HE-95Vessel NOAA Ship HECK (EDP 9140)Chief of party George E. White, LCDR, NOAASurveyed by LCDR George E. White, LT Gerd Glang, LT Brent Bernard, ENS Larry Krepp,
ENS James Crocker, ST Kevin B. ShaverSoundings taken by echo sounder, ~~hand level, pole~~Graphic record scaled by ENS Larry Krepp, ENS James Crocker, ST Kevin B. ShaverGraphic record checked by ENS James CrockerProtracted by N/AAutomated plot by HDAPS *ENCAD NOVAJET Plotter (Field) (AHR)*Verification by Atlantic Hydrographic Section, N/CG244Soundings in ~~fathoms~~ ~~feet~~ ~~METERS~~ at MLW FEETREMARKS: NOTES IN The original Descriptive Report were made in
RED During office processing.DSC 1-25-96

FE-408SS
HE-10-1-95



887

9348

2562

9347

2561

9346

869

870

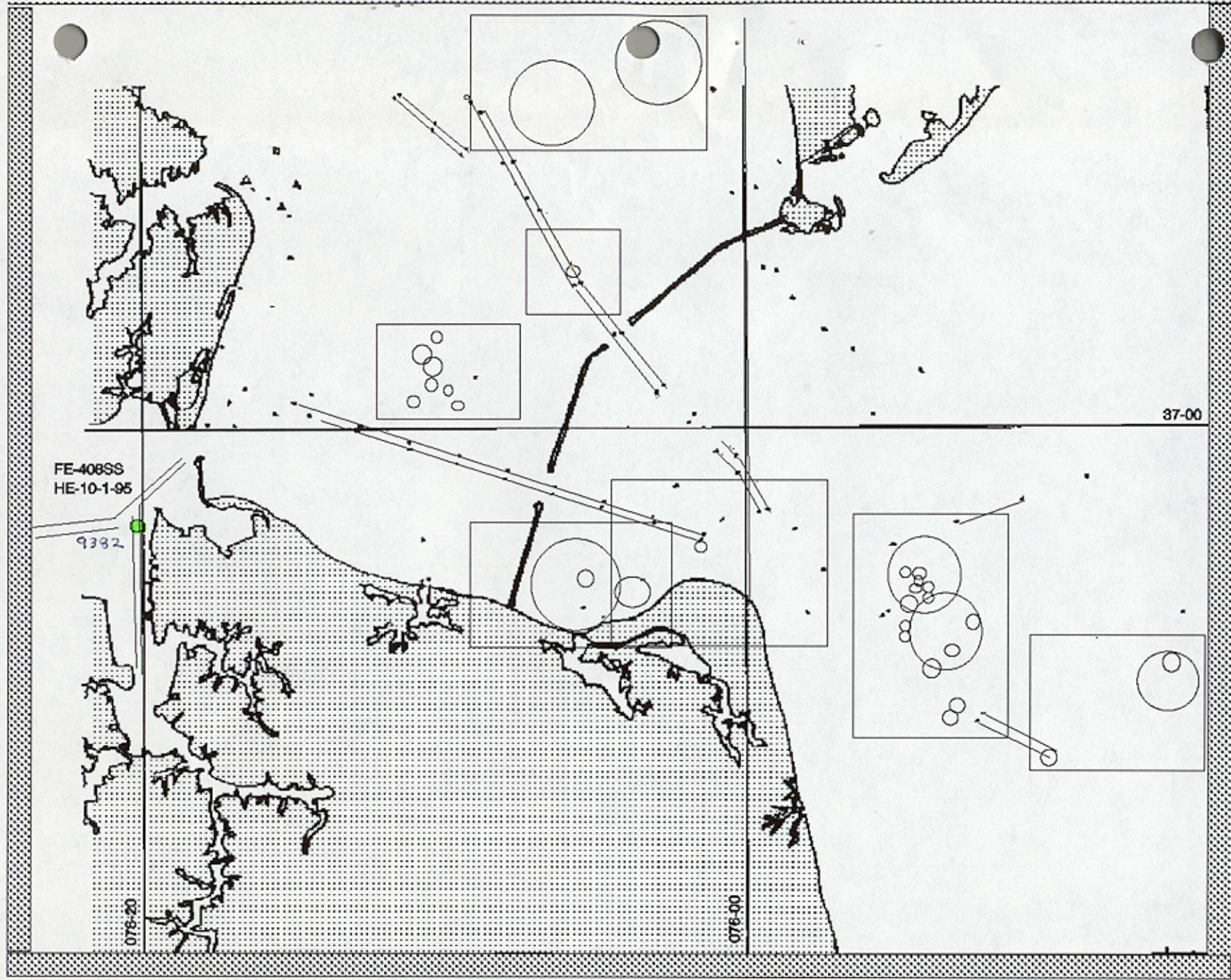


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**DESCRIPTIVE REPORT TO ACCOMPANY
SURVEY FE-40888
FIELD NUMBER HE-10-1-95
VIRGINIA
CHESAPEAKE BAY
1.5 NM NORTHWEST OF NEWPORT NEWS POINT
Scale 1:10,000
NOAA SHIP HECK S-591
LCDR George E. White, NOAA, CMDG.**

A. PROJECT

1. This survey was conducted in accordance with Hydrographic Project Instructions OPR-E696-HE-95, Southern Chesapeake Bay Item Investigations, Virginia.
2. Original project Instructions are dated March 1, 1994.
3. An update to the Project Instructions was assigned and is dated January 26, 1995.
4. The survey sheets are designated as Sheet "1" and "9".
5. The purpose of this project is to investigate numerous wrecks and obstructions charted in the lower Chesapeake Bay and Approaches. These hazards are hindering the movement of commercial shipping and accurate information regarding these items is considered important to efficient and safe navigation.

B. AREA SURVEYED

1. The survey area for sheet "1", designated as AWOIS items 869, 887, 9346, 9347, and 9348 in the Project Instructions, lies in the James River 1.5 nm northwest of Newport News Point. The sheet "9" survey area, designated as AWOIS item 9382, lies within Norfolk Harbor Reach channel located 0.2 nm west of Sewells Point.

2. The limits of the AWOIS areas are as follows:

<u>AWOIS NUMBER</u>	<u>CENTER</u>	<u>RADIUS</u>
869	36°57'54.53" N 076°25'56.31" W	200m
887	36°59'00.53" N 076°26'58.81" W	500m
9346	36°57'55.53" N 076°26'23.81" W	200m
9347	36°58'15.03" N 076°26'31.81" W	200m
9348	36°58'36.53" N 076°26'30.81" W	200m
9382	36°57'45.69" N ✓ 076°20'13.14" W	100m

3. Survey operations began on March 01, 1995 (DOY 060), and were completed on May 08, 1995 (DOY 128).

C. SURVEY VESSELS

1. Hydrographic and side scan data were collected by survey launch MI-3, DOY 060-075, and NOAA Ship HECK, DOY 076-128, (EDP 9140). All offset and layback information is contained in the offset table located in section IV of the separates.*

2. No unusual vessel configurations were used.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

See Also Evaluation Report

1. Survey data acquisition and processing were accomplished utilizing HDAPS hardware and the latest version of the NAVITRONIC NAVISOFT 300 software provided to the ship by N/CG24. A listing of actual programs and versions is appended in Appendix VI.*

2. Program Velocity (version 2.00) was used to determine velocity corrections.

3. No nonstandard automated acquisition or processing methods were used.

**Data filed with original field data*

E. SONAR EQUIPMENT

1. Survey launch MI-3 is equipped with an EG&G model 260-TH slant range corrected Side Scan Sonar recorder (SSS) and model 272 single frequency towfish. HECK is equipped with an EG&G model 260 slant range corrected SSS recorder and model 272 single frequency towfish. Serial numbers and dates of usage are as follows:

Towfish	(S/N 010823)	DOY 060 - 075
	(S/N 016697)	DOY 076 - 128
Recorder	(S/N 0012102)	DOY 060 - 075
	(S/N 0012105)	DOY 076 - 127
	(S/N 0010884)	DOY 128

2. The beam width and down angle are not adjustable on this unit. The grazing angle dip switches are normally set to 01, unless otherwise noted on the sonargram.

3. All SSS data was collected using 100 Khz frequency.

4. a. Line spacing of 110 meters on the 75 meter scale, 80 meters on the 50 meter scale, and 20 meters on the 25 meter scale were used to maintain the required line overlap as determined by the equation in FPM 7.3.2.2.

b. Confidence checks were obtained, and annotated on the sonargrams, by towing the side scan unit either past known items or linear bottom features. A minimum of two confidence checks were obtained on a daily basis as required.

c. Required proof of sonar coverage is demonstrated through sonar coverage plots produced as HDAPS plots. Quality of bottom coverage to the outer edges of the sonargrams was assured during check scanning to the best of the hydrographers ability.

d. No anomalies were observed.

e. The towfish was deployed from the stern. All offset and layback information is provided in the offset table located in section IV of the separates.*

5. Significant contacts, > 0.6 meters off the bottom, were further investigated by using side scan sonar wagon wheel developments. Echosounder developments were completed on all contacts that still proved significant following SSS developments. Diver investigations were not performed during this survey due to high currents and very low visibility conditions in the James River.

6. The sonar contact list (Side Scan Sonar Manual 3.1.1.1.) is provided through the HECK's side scan survey contact abstract table and the automated HDAPS contact printout that is produced during the computation and logging of contacts. Depths on HDAPS contact printout are raw, however, depths on the side scan survey contact list are manually corrected for draft (+2.1 meters). Both are located in the separates.✕

Annotations required by section 2.6 of the Side Scan Sonar manual (ship's speed, ship's head, weather/sea state) are on the sonargrams. This information is located in the digital records and can be examined in the "Depth/Position Edit" sub-routine of the Post-Survey routine. Weather information is in the weather logs found in Appendix VI. ✕

Data filed with original field records

F. SOUNDING EQUIPMENT

1. The following Raytheon DSF-6000N echosounder was used during this survey:

S/N B046N	DOY 060 - 075
S/N A116N	DOY 083 - 086
S/N A110N	DOY 090, 097, 100
S/N A112N	DOY 095
S/N A107N	DOY 100 - 128

2. No dives were conducted as part of this survey. The pneumogauge and MOD III divers least depth gage were not used.

3. The DSF-6000N had failed numerous times during the survey due to electronic motor problems. A change out of the whole unit was the only way to correct the problem. This resulted in some data being rejected when the DSF-6000N would fail. The DSF-6000N failures did not affect the accuracy or quality of sounding data.

4. Both low and high frequency depths were digitized, but only high frequency depths were plotted.

G. CORRECTIONS TO ECHOSOUNDINGS

1. a.1. The following table shows dates and locations of velocity casts conducted using the ODOM Digibar sound velocimeter (S/N 168), casts 1-15, and the Sea Bird SEACAT CTD (S/N:1251), casts 19-26.

<u>TABLE</u>	<u>DATE</u>	<u>LOCATION</u>	
1	03/01/95 (DOY 060)	36°57'49"N	076°25'53"W
3	03/07/95 (DOY 066)	36°57'47"N	076°25'50"W
5	03/14/95 (DOY 073)	36°57'52"N	076°25'47"W
7	03/24/95 (DOY 083)	36°57'30"N	076°25'30"W
9	04/05/95 (DOY 095)	36°57'54"N	076°25'54"W
15	04/1 ² 1 /95 (DOY 101)	36°57'18"N	076° ²⁵ 05 '36"W
19	04/24/95 (DOY 114)	36°57'43"N	076°25'42"W
26	05/08/95 (DOY 128)	36°57'53"N	076°25'53"W

The velocity cast data were reduced and velocity corrections calculated using program VELOCITY version 2.00.

The Digibar was checked on January 4, 1995, by ODOM and found to be functioning correctly. Field checks using the prescribed fresh water method were accomplished prior to each cast and recorded on the velocity cast form.

The velocity cast data collected by the SEACAT was downloaded to a PC computer using the latest versions of the CAT program provided by the Nautical Charting Division. Data correctors were then generated using program VELOCITY version 2.11.

The SEACAT CTD was calibrated on March 17, 1995 by SEA-BIRD Electronics, Inc and found to be functioning correctly. Field checks for the Sea Bird SEACAT CTD were conducted on each cast. The field check consisted in comparing the specific gravity of a surface sea water sample to surface measurements made by the SEACAT using the velocity program.

b. There are no variations in the instrument initial on the DSF-6000N.

c. There are no instrument correctors on the DSF-6000N.

d. On DOY 073 (1995) a dual leadline comparison was conducted on the HECK. A mean difference of 0.04 meter was obtained resulting in a corrector of 0.0 meter.

e. The computed velocity correctors were applied on line to echosounder depths (both high and low

frequency) by entering the correction data into the HDAPS sound velocity table.

f. The static draft of 2.10 meters was applied on line to all echosoundings via the HDAPS offset table.

g. Settlement and squat values for NOAAS HECK were determined on March 15, 1995 in the vicinity of Craney Island fuel pier in Norfolk, Virginia using the level rod method. These correctors are on file at N/CG244 and are included in separates section IV. *

Settlement and squat values were applied on line to hydrographic soundings via the HDAPS offset table located in section IV of the separates. *

h. Heave is measured by a Datawell B.V. (S/N 19110-C) heave, roll, and pitch sensor (HIPPY) located midships near the transducer. The sensor gathers on line data which is applied to the soundings in near real time. All data have been corrected by applying HIPPY correctors.

2. No unusual methods or instruments for determination of correction to soundings were used.

3. No zoning or special correctors were used.

4. The pneumogauge and the divers least depth gauge were not used during the course of this survey.

5. There were no unusual factors affecting DSF records other than that mentioned in F.4.

6. a. The tidal datum for this survey was mean lower low water (MLLW). The tide station at Chesapeake Bay Bridge Tunnel, VA (863-8863) was the reference station. Bracketing levels were run by N/OES213 for the Chesapeake Bay Bridge Tunnel. This station is automated and monitored by N/OES213. The tide station at Hampton Roads, VA (863-8610) was the backup tide station. An opening level run was conducted by N/OES213. Closing level run was conducted by HECK Crew on May 24, 1995. No tide stations were established by HECK in support of this survey.

b. All hydrographic depths have been corrected for predicted tides. Zone correctors were specified in the project instructions. Tidal correctors were applied on line via the HDAPS predicted tide table. * Approved tides and zoning were applied during office processing.

c. Zoning was in accordance with project instructions.

The time and height correctors are as follows:

For Sheet "1" apply a +1 hr. 20 min. time correction and a x1.00 range ratio to predicted tides at CBBT.

For Sheet "9" apply a +1 hr. time correction and a x0.95 range ratio to predicted tides at CBBT.

H. CONTROL STATIONS *See also Evaluation Report*

1. The horizontal datum for this project is the North American Datum of 1983 (NAD 83).
2. Horizontal control was accomplished using GPS in conjunction with the DGPS beacons at Cape Henry, VA, Cape Henlopen, DE and Alexandria, VA.
3. Coast Guard DGPS beacons were positioned by N/CG241. All control stations were positioned to Third order, Class 1 standards.
4. No horizontal control stations were installed or maintained by HECK.
5. No horizontal control report has been submitted to NOAA Atlantic Hydrographic Section, N/CG244.
6. No known anomalies or unconventional methods of horizontal control were used.

I. HYDROGRAPHIC POSITION CONTROL

1. Position control was by Differential Global Positioning System (DGPS). Control station positions were entered into the HDAPS control station Table. The first, and most commonly used, was the Cape Henry beacon (289 kHz). The Cape Henlopen beacon (298 kHz) and Alexandria beacon (305 kHz) were also used for performance checks and occasionally for primary positioning. The list of the DGPS beacons and their positions appear in Appendix III, LIST OF HORIZONTAL CONTROL STATIONS submitted with this survey.
2. Accuracy requirements were met as specified by the Hydrographic Manual and Field Procedures Manual.
3. Equipment serial numbers appear as part of the header information on each day's data print out. The GPS receivers on board are Ashtech OEM sensors, serial numbers 700417131012, 70041781195, and 70041781004 on launch MI-3 all with 1E89D-P eeproms. The differential receivers are Magnavox MX50R receivers. The serial number for DGPS receiver 1 is 079, receiver 2 is 077, and receiver MI-3 is A002412.

4. The DGPS beacons used for this survey were the USCG beacons located at Cape Henry, VA (289 kHz), Cape Henlopen, DE (298 kHz) and Alexandria, VA (305 kHz).

5. Performance checks using both DGPS positions (Cape Henry, Cape Henlopen, or Alexandria) were conducted on the HECK using the SHIPDIM program. These checks compare positions computed by two DGPS beacons and compare their subsequent position differences. The performance checks were sent to Atlantic Hydrographic Section N/CG244 as part of the data.

Performance checks for the survey launch MI-3 were conducted by placing the GPS receiver antenna within 5 meters of a known survey benchmark and using HDAPS to compare the positions with a known range and bearing. The survey mark identified as "CONDO", position 36°51'00.13621" N 076°17'50.86856", W was used for the comparison.

6. For Differential GPS positioning, the maximum allowable HDOP was set at 3.0 for the Cape Henry, Cape Henlopen, and Alexandria beacons to avoid EPE's in excess of the allowable 15 meters established for this scale survey. Data not meeting these requirements were examined and either accepted, smoothed or rejected.

7. a. No unusual methods of operating or calibrating electronic equipment were used.
- b. There were no significant problems with receiving the DGPS signal from either the Cape Henry or Cape Henlopen beacon.
- c. No unusual atmospheric conditions were noted and did not effect our reception of the DGPS signals.
- d. The positioning accuracy using the DGPS beacons was not compromised at all during the survey.
- e. No systematic errors were discovered.
- f. and g. All survey offsets were applied on-line using the HDAPS Offset Table 1.

J. SHORELINE

Shoreline verification, not assigned for this project, was conducted along Newport News Shipbuilding and coal piers due to the many discrepancies between the chart and what was observed by the hydrographer. Fix 903 to 921 consist of detached positions made along the shoreline from pier 9, Newport News coal pier, northwest to the floating dry dock,

Newport News Shipyard. A phone conversation between the Commanding Officer and Captain Tommy Bishop (Newport News Ship Yard Senior Tug Master 804-380-7723) on April 26, 1995 provided additional information on some parts of the waterfront modifications in the last decade as shown in the remarks below. Photographs accompany each detached position. Below is a list of the detached position moving from south to north along the Newport News waterfront:

<u>Detached Position</u>	<u>Charted Feature</u>	<u>Remarks</u>
903	Pier # 9	✓ Retain as charted <i>concur</i>
904	Pier w/ Markers	✓ Remove charted pier <i>concur</i>
905, 906	Container Pier	✓ Remove extension <i>DO NOT concur</i>
907, 908	Large pier with Building	Chart as shown on smooth sheet ✓ Retain as charted <i>concur</i>
909	Short pier with dolphins	✓ Retain as charted <i>concur</i>
910	Wooden tug and barge pier	✓ Retain as charted <i>concur</i>
911	Newport News Shipyard pier #2	✓ Retain as charted <i>concur</i>
912	Newport News Shipyard pier #3	✓ Replace charted pier with ruins marked by white danger buoys ¹ <i>concur</i>
913	Newport News Shipyard pier #4	✓ Retain as charted <i>concur</i>
914	Newport News Shipyard pier #5	✓ Retain as charted <i>concur</i>
915	Newport News Shipyard pier #6	✓ Retain as charted <i>concur</i>
916	Newport News Shipyard pier #7	✓ Remove charted pier between drydocks ² <i>concur</i>
920	Ruins of Newport News Shipyard piers #8, #9	✓ Remove ruins, area has been dredged ³ <i>concur</i>
919	Newport News Shipyard barge pier	Retain pier as charted, remove dolphin <i>concur</i>
921	Newport News Shipyard floating drydock	✓ Retain as charted <i>concur</i>

Remarks:

¹ Captain Bishop confirms this pier destroyed and white buoys mark the outer end of the ruins.

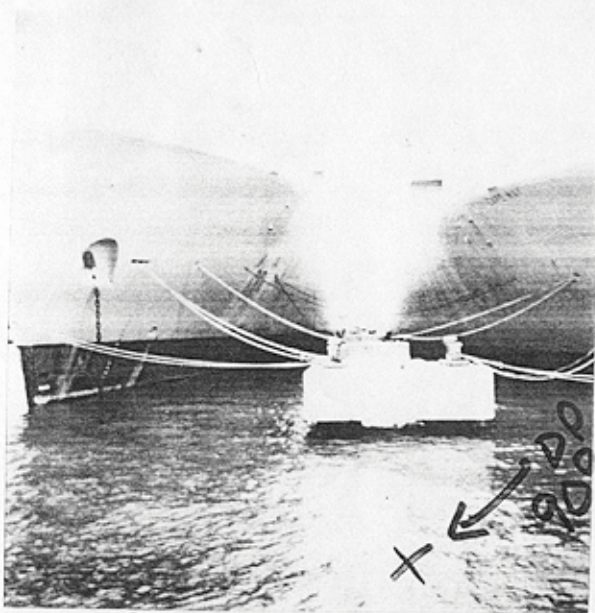
² Captain Bishop confirms this pier destroyed and dredged.

³ Captain Bishop confirms this area was dredged.

More extensive detached positions were not possible due to the close quarters of the piers and the HECK's maneuverability. The hydrographer recommends that this area be further addressed by a field party.

NEWPORT NEWS SHORELINE

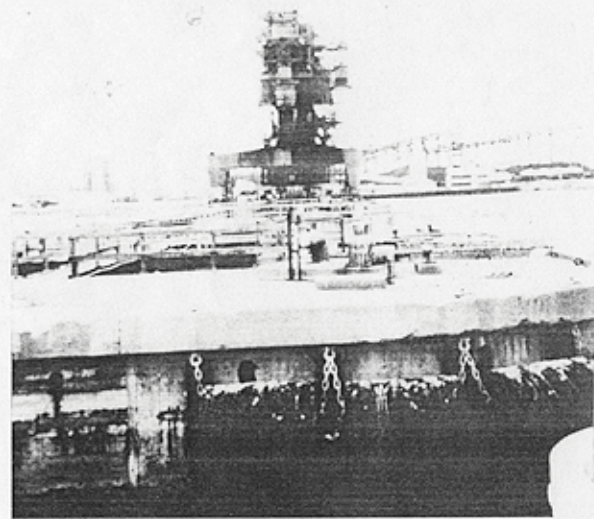
CHARTED FEATURE	D.P. #	DESCRIPTION
Pier #9	903	RETAIN AS CHARTED D.P. DISTANCE = 10M Θ : 045° T.
Pier w/ Markers	904	REMOVE CHARTED PIER D.P. DISTANCE: N/A Θ : 043° T
LG CONTAINER PIER	905	REMOVE EXTENSION JUST A FLAT FACED PIER SOUTH SIDE Θ : 058° T D = 10m
	906	" " " " NORTH SIDE Θ : D = 10m
Virginia Int Terminals	907	LG PIER BUILDING B SOUTH SIDE D = 8 m Θ = 057
Newport News Marine Term	908	" " " " NORTH SIDE D = 7 m Θ = 063
Empty Pier	909	MSC SHIPS TIED UP. PIER w/ 2 SHIPS - actually very short pier w/ 4 TIE-OFFS / DOCKPIERS. Θ : 061° T D: = 20m.
WOODEN TUG & BARGE PIER	910	CORRECTLY CHARTED Θ : 075° T D = 12 m.
uncharted ^{@ Corner} Dolphin Pier #2	911	Chart Dolphin Θ : 067° T D = 15 m
the Pier #3	912	NO PIER JUST RUINS BUOYS MARK END OF RUINS. Θ : 065° T D: 25m
Pier #4	913	RETAIN AS CHARTED Θ : 069° T D: 10M
Pier #5	914	RETAIN AS CHARTED Θ : 066° T D: 10m
Pier #6	915	RETAIN AS CHARTED Θ : 067° T D: 10M
Pier @ Drydocks btwn #7 and ruins	916	REMOVE PIER btwn Drydocks Θ : 064° T D: N/A
OLD PIER #8	917 ^{LET} (920)	REMOVE RUINS AREA DRYDOCK Θ : 065° T D: N/A
ARGES PIER #8	918 ^{LET} (919)	RETAIN AS CHARTED - REMOVE DOLPHIN. FROM CHART Θ : 067° T D: 13m
LOADING Drydock	921	RETAIN AS CHARTED Θ : 067° T D: 10M.



SKINNY PIER w/ DOLPHINS
 D.P. # 909 D: 20M Θ : 061 $^{\circ}$ T
 MSC MOORING BLOCKS

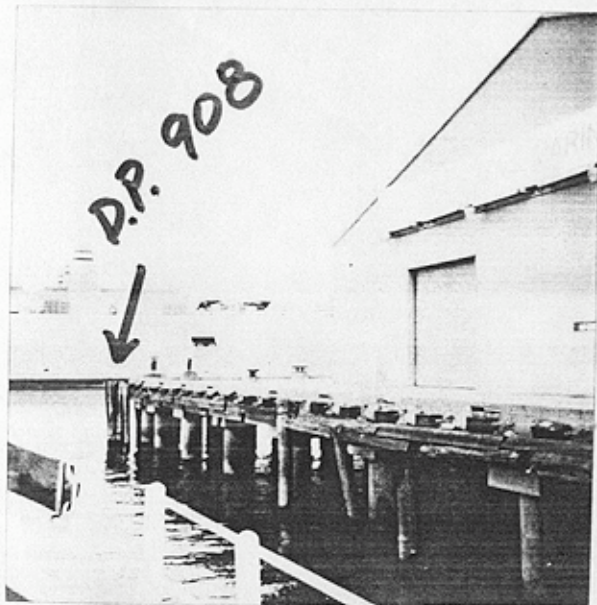


VIRGINIA INTERNATIONAL Terminal
 BLDG B SOUTH SIDE OF
 D.P. 907 DISTANCE: 8M PIER
 Θ : 057 $^{\circ}$ T

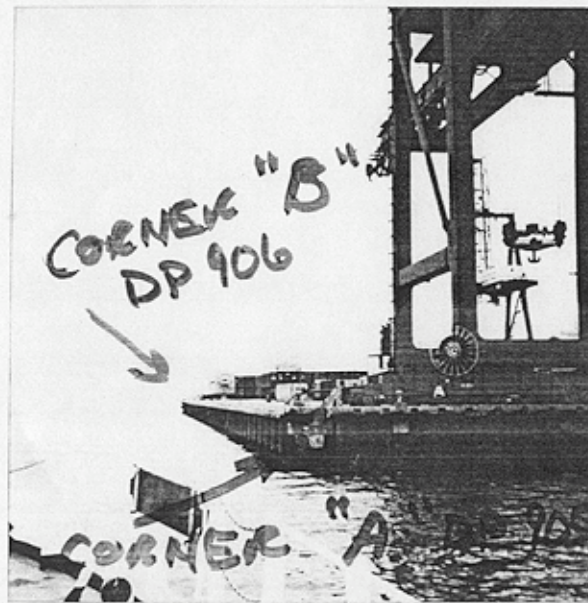


NEWPORT NEWS PIER # 9
 Θ 045 $^{\circ}$ T DP # 903

DISTANCE: 10M

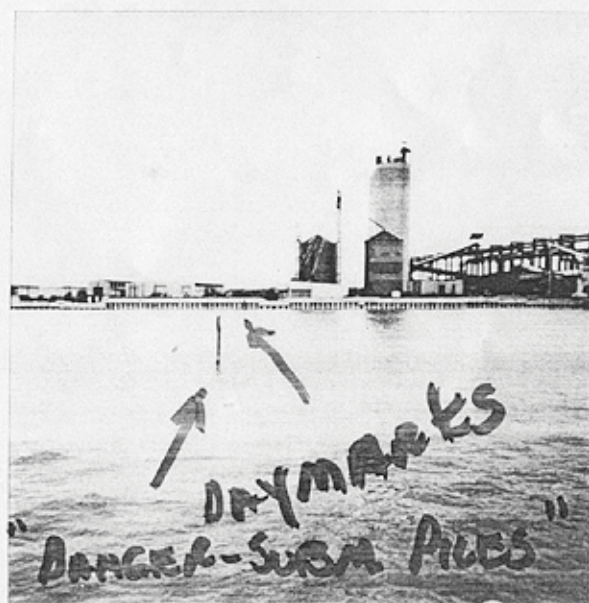


NEWPORT NEWS MARINE TERMINAL
 BLDG B NORTH SIDE OF PIER
 D.P. 908 DISTANCE: 7M
 Θ : 063 $^{\circ}$ T



LG CONTAINER PIER w/o CHARTERED
 EXTENSION
 D.P. 905 (SOUTH CORNER) 906 (NORTH CORNER)

DISTANCE = 10M FOR BOTH DP'S



NON EXISTANT CHARTERED PIER w/
 DAYMARKS
 D.P. 904 DISTANCE: 10M
 Θ 043 $^{\circ}$ T



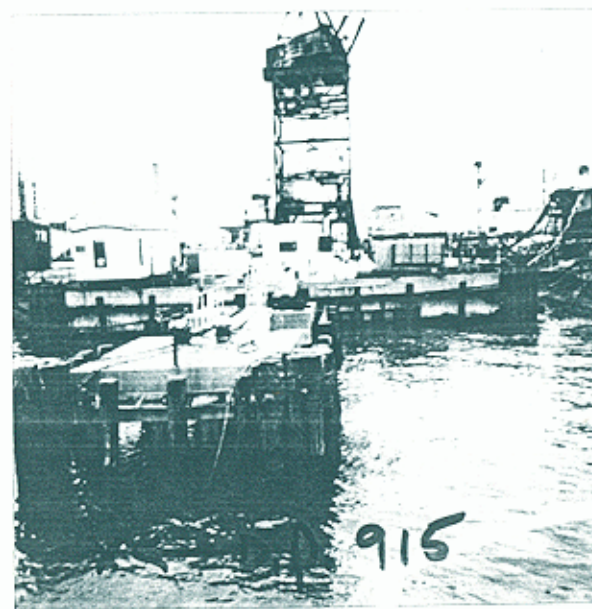
PIER #4 CORRECTLY CHARTED
D.P. 913 DISTANCE: 10M
θ: 069°T



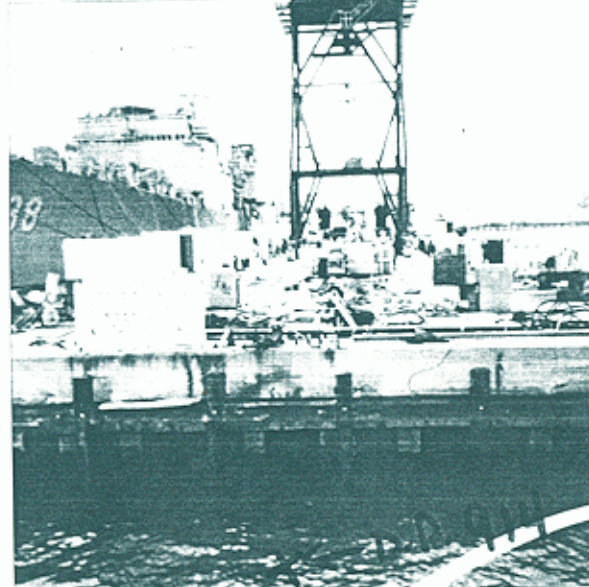
BUOYS SAY "DANGER"
CHARTED PIER NOW RUINS. BUOYS
MARK END OF SUBMERGED RUINS
D.P. 912 DISTANCE: 25M
θ: 065°T



WOODEN TUG & BARGE PIER
D.P. # 910 DISTANCE: 12M
θ: 075°T



PIER #6 CORRECTLY CHARTED
D.P. 915 DISTANCE: 10M
θ: 067°T



PIER #5 CORRECTLY CHARTED
D.P. # 914 DISTANCE: 10M
θ: 066°T



UNCHARTED DOLPHIN @ Corner Pier
D.P. 911 DISTANCE: 15M
θ: 067°T



FLOATING DRYDOCK CORRECTLY CHARTED
 D.P. 921 $\Theta: 067^{\circ}T$ DISTANCE: 10M



OLD PIER #8 CHARTED AS RUINS
 AREA HAS BEEN DREDGED NO MORE
 RUINS DP 917 $\Theta: 065^{\circ}T$



PIER BTWN DRYDOCK #1 & #2
 OLD PIER #7
 D.P. 916 $\Theta: 064^{\circ}T$

DISTANCE: N/A



OLD PIER #8 CHARTED AS RUINS
 AREA HAS BEEN DREDGED NO MORE
 RUINS 920
 D.P. 917 $\Theta: 065^{\circ}T$



BARGE PIER #8 ~~CHARTED~~
 CHARTED DOLPHIN DOES NOT EXIST
 D.P. 919 $\Theta: 067^{\circ}T$ DISTANCE: 13M

K. CROSSLINES

Not applicable as per project instructions.

L. JUNCTIONS

Not applicable as per Project Instructions (section 6.9).

M. COMPARISON WITH PRIOR SURVEYS *See Evaluation Report*

The Atlantic Hydrographic Section HECK processing team is completing survey comparisons as agreed upon at the start of this project.

N. ITEM INVESTIGATION REPORTS

N1. SUMMARY OF ITEMS INVESTIGATED

AWOIS NO. TGT #	SECTION	STATUS	RECOMMENDATION
869	N2	Disproved	Delete Wreck
887	N3	Disproved	Delete Wreck
9346	N4	Disproved	Delete Shoal
9347	N5	Disproved	Delete Obstruction
9348	N6	Disproved	Delete Obstruction
9382	N7	Disproved	Delete Obstruction
#84.30 (TGT)	N8	Found	Chart Sounding
#105.22 (TGT)	N9	Found	Chart Obstruction
#444.04 (TGT)	N10	Found	Chart Obstruction
#446.255 (TGT)	N11	Found	Chart Obstruction
#480.70 (TGT)	N12	Found	Chart Shoal
#512.45 (TGT)	N12	Found	Chart Shoal
#589.555 (TGT)	N14	Found	Chart Sounding
#760.58 (TGT)	N15	Found	Do Not Chart

N2. AWOIS ITEM 869

1. Area of Investigation

Reported Position:
 Latitude: 36°57'54.53" N
 Longitude: 076°25'56.31" W
 Datum: NAD 83
 Depth: 48 feet
 Feature: Wreck

2. Description of Item

This item is listed as a wreck of an oyster boat located with 46 ft over it in 1947. The wreck was hung during a wire drag survey in 1967 at 41 ft and cleared to 48 ft.

3. Survey Requirements

Survey requirements specify determining the existence of this item through 400% side scan coverage over a 200 meter radius.

4. Method of Investigation

400% side scan coverage was completed on March 2, 1995 (DOY 061).

5. Results of Investigation

The item was not found. No significant contacts were found within the AWOIS circle limits.

Recommendation: Delete Wreck (⁴⁸35 feet) from chart at Latitude 36°57'54.53" N, Longitude 076°25'56.31" W. *Concur*

N3. AWOIS ITEM 887

1. Area of Investigation

Reported Position:

Latitude: 36°59'00.53" N

Longitude: 076°26'58.81" W

Datum: NAD 83

Depth:

Feature: Wreck

2. Description of Item

This item is listed as a 26 foot sailing vessel reported sunk in 1976 and could not be located.

3. Survey Requirements

Survey requirements specify determining the existence of this item through 200% side scan coverage over a 500 meter radius.

4. Method of Investigation

200% side scan coverage was completed on March 16, 1995 (DOY 118).

5. Results of Investigation

Three contacts were discovered within the assigned limits of the search radius. The contacts are #444.04, #105.22, and #446.255, each further discussed in sections N9, N10, and N11 respectively. No contacts fitting the description of a

26 ft sailing vessel were found.

Recommendation: Delete Wreck from the chart at Latitude 36°59'00.53" N, Longitude 076°26'58.81" W. *Concur*

N4 AWOIS ITEM 9346

1. Area of Investigation

Reported Position:

Latitude: 36°57'55.53" N

Longitude: 076°26'23.81" W

Datum: NAD 83

Depth: 24

Feature: Shoal

2. Description of Item

This item is where a wire drag grounded in 25 ft during a 1966 survey. The wire cleared at 24 ft with currents too strong for dive operations. The grounding was charted as a shoal cleared to 24 ft.

3. Survey Requirements

Survey requirements specify determining the existence of this item through 200% side scan coverage over a 200 meter radius.

4. Method of Investigation

200% side scan coverage was completed on March 27, 1995 (DOY 086).

5. Results of Investigation

No contacts were discovered within the survey radius. The survey depths were found to conform with charted bottom contours. No shoaling was observed in this area.

Recommendation: Delete Shoal (24ft) from the chart at Latitude 36°57'55.53" N, Longitude 076°26'23.81" W. *Concur*

N5 AWOIS ITEM 9347

1. Area of Investigation

Reported Position:
Latitude: 36°58'15.03" N
Longitude: 076°26'31.81" W
Datum: NAD 83
Depth: 32
Feature: Obstruction

2. Description of Item

This item is where a wire drag grounded in 36 ft during a 1966 survey. The wire cleared at 32 ft. The grounding was charted as an obstruction cleared to 32 ft.

3. Survey Requirements

Survey requirements specify determining the existence of this item through 200% side scan coverage over a 200 meter radius.

4. Method of Investigation

200% side scan coverage was completed on March 14, 1995 (DOY 073).

5. Results of Investigation

One contact, #84.30 discussed in section N8, was discovered within the survey radius. No contacts fitting the description of a 32 ft obstruction were found within the survey radius.

Recommendation: Delete Obstruction (32ft) from the chart at Latitude 36°58'15.03" N, Longitude 076°26'31.81" W. *concur*

N6 AWOIS ITEM 9348

1. Area of Investigation

Reported Position:
Latitude: 36°58'36.53"
Longitude: 076°26'30.81"
Datum: NAD 83
Depth: 47 41
Feature: Obstruction

2. Description of Item

This item is where a wire drag grounded in 47 ft during a

1966 survey. The wire cleared at 41 ft and hung on an obstruction. With currents too strong for dive operations, the grounding was charted as an obstruction cleared to 47 ft.

3. Survey Requirements

Survey requirements specify determining the existence of this item through 400% side scan coverage over a 200 meter radius.

4. Method of Investigation

400% side scan coverage was completed on March 27, 1995 (DOY 086).

5. Results of Investigation

Three contacts, #480.70, #512.45, and #589.555, were discovered within the survey radius and are further discussed in sections N12, N13, and N14 respectively. No contacts or soundings were discovered within the survey radius that fit the description of a 47 ft obstruction.

Recommendation: Delete Obstruction (⁴¹47ft) from the chart at Latitude 36°58'36.53" N, Longitude 076°26'30.81" W. *cancel*

N7 AWOIS ITEM 9382

1. Area of Investigation

Reported Position:
Latitude: 36°57'45.69" N
Longitude: 076°20'13.19" W
Datum: NAD 83
Depth: 49.5 ft
Feature: Obstruction

2. Description of Item

The item is described as a 6 ft by 2ft concrete slab with a 5 ft, 18 in diameter wooden pile protruding out of the center. With a least depth of 49.5 ft, the item was identified by contract divers while investigating four contacts from a prior survey associated with U. S. Army Corps of Engineers channel surveys.

3. Survey Requirements

Survey requirements specify determining the existence of this item through 400% side scan coverage over a 100 meter radius.

4. Method of Investigation

400% side scan sonar coverage of the survey area was completed on April 10, 1995, (DOY 100).

5. Results of Investigation

No contacts were discovered during the survey within the survey radius. The survey depths were found to conform with charted bottom contours. Outside the survey radius contact #760.58 was located and developed. This contact is further discussed in section N14.

Recommendation: Do not chart obstruction (49.5 ft). *concur*

N8. CONTACT NO. 84.30

Contact #84.30, listed in contact table #1, was discovered within the limits of the AWOIS #9347 search radius. This contact was developed by echosounder with a line spacing of five meters. The results of the echosounder development was the discovery of a shoal extending for 40 m. The least depth for the shoal was located at fix #704.1. Both the least depth and position are listed in the table below.

Pos No:	704.1 684.2
Date:	07 ⁵ April, 1995 (097) ⁵
Time (UTC):	16:22:45 20:10:12
Depth (low frequency):	12.4m
Depth (high frequency):	12.1m 14.7m
Tide Corrector:	-0.4m
Sound Velocity Corrector:	-0.2m
Draft Corrector:	2.2m .1
Heave Corrector:	0.0m
Corrected Least Depth:	13.7m 16.2 m (53 Ft)

LAT: 36°58'18.987" N^{20.518}
LON: 076°26'25.436" W 24.287"
E: 5237.8 66.4
N: 22851.1 98.2
Datum: NAD 1983

Recommendation: Chart shoal, least depth ^{16.2m (53 Ft)} 13.7m based on predicted tides at the position of fix #704.1. Lat 36.158/20.518, Lon 76.126/24.287
actual
(The fath trace at Fix 704.1 reveals garbage. There was a good hit on shoal at FN 684.2)

N9. CONTACT NO. 105.22

Contact #105.22, listed in contact table #1, was discovered within the limits of the AWOIS #877 search radius. This contact was developed by echosounder with a line spacing of five meters. The contact, an obstruction located within the Newport News Shipyard security zone, as illustrated by

echosounder and side scan sonar records, resembles a pile standing vertically off the bottom. A phone conversation between the Commanding Officer and Captain Tommy Bishop (Newport News Shipyard senior tug master 804-380-7723) determined that this is most likely the isolated remains of a marine railway structure which use to exist at the outer edge of the presently charted pier #9 ruins. This item is not considered a danger to navigation by Captain Bishop. The least depth of this obstruction was located at fix #884.0. Both the least depth and position are listed in the table below.

Pos No:	884.0
Date:	24 April, 1995 (114)
Time (UTC):	17:06:29
Depth (low frequency):	12.2m
Depth (high frequency):	10.2m
Tide Corrector:	-0.7m ^S -0.4
Sound Velocity Corrector:	-0.1m ^S -0.1
Draft Corrector:	2.2m ^l
Heave Corrector:	0.0m
Corrected Least Depth:	12.0m 11.8m (38ft)

LAT: 36°59'10.015" N
 LON: 076°26'42.895" W
 E: 4812.5
 N: 24425.9
 Datum: NAD 1983

Recommendation: Chart ~~a submerged pile~~ ^{an obstruction}, least depth ~~12.0m~~ ^{11.8m (38feet)} based on ~~predicted tides~~ ^{actual} at the ~~position of fix #884.0~~ ^{Lat 36°59'10.015N, Lon 76°26'42.895" W} ~~convcur~~

N10. CONTACT NO. 444.04

Contact #444.04, listed in contact table #2, was discovered within the limits of the AWOIS #877 search radius. This contact was developed by echosounder with the wagon wheel pattern and further developed by five meter line spacing. An obstruction extending less than 5m along the bottom was found. The position and least depth for the obstruction was located at fix #641.1 and is listed below.

Pos No:	641.1
Date:	05 April, 1995 (095)
Time (UTC):	17:51:54 ²⁴
Depth (low frequency):	14.8m
Depth (high frequency):	13.6m 14.0
Tide Corrector:	-0.7m -0.6
Sound Velocity Corrector:	-0.2m
Draft Corrector:	2.1m
Heave Corrector:	0.0m
Corrected Least Depth:	14.8m 15.3m (50ft)

LAT: 36°58'53.820" N
LON: 076°26'45.027" W
E: 4757.7
N: 23926.9
Datum: NAD 1983

Recommendation: Chart an obstruction, least depth ~~14.8m~~^{15.3} (50ft)
based on ~~predicted~~^{actual} tides at ~~the position of fix #641.1.~~ ^{CONCUR}
Lat 36°58'53.820"N, Lon 76°26'45.027"W

N11. CONTACT NO. 446.255

Contact #446.255, listed in contact table #2, was discovered within the limits of the AWOIS #877 search radius. This contact was developed by echosounder with a line spacing of five meters. Similar to contact #105.22, this contact is located within the Newport News Shipyard security zone and as illustrated by echosounder and side scan sonar records, also resembles a pile standing vertically off the bottom. A phone conversation between the Commanding Officer and Captain Tommy Bishop (Newport News Shipyard senior tug master 804-380-7723) determined that this is most likely the isolated remains of a marine railway structure which use to exist at the outer edge of the presently charted pier #9 ruins. This item is not considered a danger to navigation by Captain Bishop. The least depth of this obstruction was located at fix #901.0. Both least depth and position are listed in the table below.

Pos No:	901.0
Date:	24 April, 1995 (114)
Time (UTC):	18:40:40
Depth (low frequency):	8.0m
Depth (high frequency):	7.5m ✓
Tide Corrector:	-0.4m -0.5
Sound Velocity Corrector:	0.0m
Draft Corrector:	2.1m
Heave Corrector:	0.0m
Corrected Least Depth:	9.2m (30ft)

LAT: 36°59'12.073" N
LON: 076°26'44.418" W
E: 4775.1
N: 24489.5
Datum: NAD 1983

Recommendation: Chart an ~~submerged pile~~^{obstruction}, least depth ~~9.2m~~^{9.1m (30ft)}
based on ~~predicted~~^{actual} tides at ~~the position of fix #901.0~~
Lat 36°59'12.073"N, Lon 76°26'44.418"W

N12. CONTACT NO. 480.70

Contact #480.70, listed in contact table #2, was discovered within the limits of the AWOIS #9348 search radius. This

contact was developed by echosounder with a line spacing of five meters. The results of the echosounder development was the discovery of a shoal extending southwest to northeast approximately 40 m. Several bottom samples of this shoal were taken (D.P.s 926, 933-943) where most were empty grabs with an occasional sample of broken shells with small amounts of grey mud and coal. These samples confirmed the hard bottom type listed on the chart and suggest the possibility of a coal pile. The least depth for the shoal was located at fix #728.0. Both the least depth and position are listed in the table below.

Pos No:	728.0
Date:	07 April, 1995 (097)
Time (UTC):	17:41:15
Depth (low frequency):	14.3m
Depth (high frequency):	14.0m
Tide Corrector:	-0.6m -0.4
Sound Velocity Corrector:	-0.2m
Draft Corrector:	2.2m
Heave Corrector:	0.0m
Corrected Least Depth:	15.4m (51ft)

LAT: 36°58'35.911" N
 LON: 076°26'30.107" W
 E: 5124.4
 N: 23373.3
 Datum: NAD 1983

Recommendation: Chart shoal, least depth 15.4m based on predicted tides at the position of fix #728.0. ^{6 (51ft)} CONCUR
 actual Lat 36/58/35.911N, Lon 76/26/30.107W

N13. CONTACT NO. 512.45

Contact #512.45, listed in contact table #2, was discovered within the limits of the AWOIS #9348 search radius. This contact was developed by echosounder with a line spacing of five meters. The results of the echosounder development was the discovery of a shoal extending less than 10 m. The least depth for the shoal was located at fix #670.0. Both the least depth and position are listed in the table below.

Pos No:	670.0
Date:	05 April, 1995 (095)
Time (UTC):	19:30:57
Depth (low frequency):	15.4m
Depth (high frequency):	15.1m 14.7m
Tide Corrector:	-0.6m -0.5m
Sound Velocity Corrector:	-0.2m
Draft Corrector:	2.2m
Heave Corrector:	0.0m
Corrected Least Depth:	16.5m (53ft)

16.2

LAT: 36°58'36.995" N
LON: 076°26'29.066" W
E: 5150.3
N: 23406.6
Datum: NAD 1983

Recommendation: Chart sounding (16.5m) ^{2 (53ft)} based on ~~predicted~~ ^{actual} tides at the ~~position of fix #670.0 concur.~~
~~Lat 36°58'26.995"N, Lon 76°26'29.066 W~~

N14. CONTACT NO. 589.555

Contact #589.555, listed in contact table #11, was discovered within the limits of the AWOIS #9348 search radius. This contact was developed by echosounder with a line spacing of five meters. The results of the echosounder development was the discovery of a shoal extending less than 10 m. The least depth for the shoal was located at fix #876.23. Both the least depth and position are listed in the table below.

Pos No:	876.23
Date:	24 April, 1995 (114)
Time (UTC):	16:35:43
Depth (low frequency):	16.3m
Depth (high frequency):	15.1m
Tide Corrector:	-0.1m -0.4m
Sound Velocity Corrector:	-0.1m
Draft Corrector:	2.1m
Heave Corrector:	0.0m
Corrected Least Depth:	17.0m 16.7m (55ft)

LAT: 36°58'35.823" N
LON: 076°26'34.336" W
E: 5019.8
N: 23371.0
Datum: NAD 1983

Recommendation: Chart sounding (17.0m) ^{16.7 (55ft)} based on ~~predicted~~ ^{actual} tides at the ~~position of fix #876.23 concur~~
~~Lat 36°58'35.823 N, Lon 76°26'34.336 W~~

N15. CONTACT NO. 760.585

Contact #760.58, listed in contact table #9, was discovered outside the limits of the AWOIS #9382 search radius. This contact was developed by echosounder with a line spacing of five meters. The results of the echosounder development was the discovery of a bottom feature extending 100m in length. Two least depth positions were taken on this bottom feature, fixes #817.2 and #821.3, corrected depths of 16.0m and 15.9m respectively. The bottom feature lies within the Norfolk Reach Channel, depths maintained by the Army Corps of

Engineers, and when compared to surrounding depths and the latest channel survey depths, the feature is found to be insignificant. In a conversation between the Commanding Officer and Mr. Chris Rowley (U.S. Army Corps of Engineers Survey Section 804-441-7482) it was determined this feature is the remains of an old degaussing installation across the channel.

Recommendation: The Hydrographer does not recommend charting the bottom feature if the feature does not rise above the 50 ft. project depth for the outbound half of the Norfolk Reach Channel.

*Concur
DONOR*

0. COMPARISON WITH THE CHART *See also Evaluation Report*

1. The Atlantic Hydrographic Section HECK processing team is completing comparisons with current editions of the following NOS charts as agreed upon at the start of this project:

<u>CHART</u>	<u>EDITION</u>	<u>DATE</u>	<u>SCALE</u>
12222	37 th	01 APR 95	1:40,000
12245	52 nd	12 FEB 94	1:20,000
12248	33 rd	01 APR 95	1:40,000

2. No Danger to Navigation reports have been submitted during the course of this survey.

3. a. The charted soundings are consistent with the survey depths with exceptions to the shoals discovered during this survey.

b. No shoaling or deepening has been observed with the areas surveyed with the exceptions of shoals discovered. The depths from this survey should replace all prior depths in the area.

c. No extraordinary hydrographic features were noted.

d and e. The AWOIS items surveyed were located within the James River and Norfolk Reach Channel. The depths of the survey were found to agree with the tabulated controlling depths for the areas that are maintained.

4. There are no non-sounding features other than those mentioned in Section N in this report.

5. No changes are recommended to scale coverage or format of published charts within the survey area.

P. ADEQUACY OF SURVEY *See also Evaluation Report*

1. This survey meets or exceeds 1:10,000 specifications, and is adequate to supersede all prior surveys for the purposes of charting the depths and hazards to navigation within the survey area.
2. No portion of this survey has been identified as substandard or incomplete with the exception of the shoreline investigation conducted at Newport News Ship Yard as discussed in Section J.

Q. AIDS TO NAVIGATION

1. No correspondence was initiated with the Coast Guard regarding floating aids to navigation.
2. Buoys marking Norfolk Reach Channel were located within the survey limits of this field examination. No detached positions were taken but their locations were observed while online and during confidence checks. Their locations agreed with charted positions. All buoys in Hampton Roads are closely maintained on station by U.S.C.G.
3. There were no aids to navigation not shown in the Light List noted in the survey area.
4. No bridges or overhead cables are close to the survey area.
5. No submarine cables, submarine pipelines, or ferry routes were noted with exception of the ruins of a degaussing range in Norfolk Reach Channel, discussed in section N15.
6. There are no uncharted ferry terminals within this survey area.

R. STATISTICS

<u>ITEM</u>	<u>AMOUNT</u>
a. Square NM Hydrography	0.769 NMi ²
b. Days of Production	18 Days
c. Detached Positions	17
d. Bottom Samples	5
e. Tide Stations Established	None
f. Current Stations Established	None
g. Velocity Casts Performed	8 Casts
h. Magnetic Stations Established	None

S. MISCELLANEOUS

See also Evaluation Report

1. a. No unusual silting conditions were observed in the survey area.
 - b. No unusual submarine features were noted.
 - c. No unusual tide conditions were observed.
 - d. No current observations were made. No unusual current conditions were observed.
 - e. No magnetic anomalies were noted.
2. Bottom samples were not required for this survey as per project instructions. Five bottom samples were taken to determine the bottom type of the shoal developed as TGT# 480.70.

T. RECOMMENDATIONS

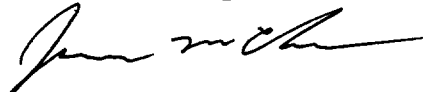
1. It is recommended a hydrographic field party further examine the shoreline of Newport News the next time they are working in the area.
2. No salvage or dredging operations should interfere with the results of this survey.
3. No further investigation of unusual features or sea conditions is recommended.

U. REFERRAL TO REPORTS

1. User Evaluation Reports were submitted to N/CG241 and N/CG244 at the end of this project.
2. A Coast Pilot Report will be submitted to N/CG244 and N/CG222 at the end of this project.
3. No horizontal control report or electronic control report will be submitted for this survey.

SUBMISSION

Respectfully Submitted,

A handwritten signature in cursive script, appearing to read "James M. Crocker".

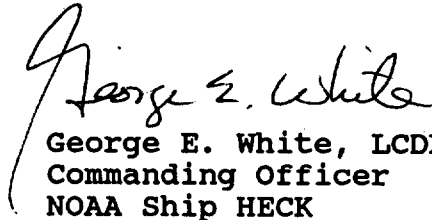
James M. Crocker, ENS, NOAA
NOAA Ship HECK

CONTROL STATION TABLE FOR FE-408

No	Latitude	Longitude	Cart	Name
100	036:55:36.000	076:00:24.000	250	CAPE HENRY DGPS STATION
200	038:46:36.000	075:05:18.000	250	CAPE HENLOPEN DGPS STATION
300	036:51:00.136	076:17:50.869	250	BENCHMARK "CONDO"-NAUTICUS

LETTER OF APPROVAL

Field operations contributing to the accomplishment of this survey were conducted under my direct supervision with daily personal checks of progress and data quality. This report, field sheets, and data records have been closely reviewed and are complete and adequate for charting.

A handwritten signature in cursive script that reads "George E. White". The signature is written in dark ink and is positioned above the typed name and title.

George E. White, LCDR, NOAA
Commanding Officer
NOAA Ship HECK



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Office of Ocean and Earth Sciences
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: September 27, 1995

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-E696-HE

HYDROGRAPHIC SHEET: FE-408SS

LOCALITY: Virginia, Chesapeake Bay, 1.5 Nautical Miles NW
of Newport News Point

TIME PERIOD: March 1 - May 8, 1995

TIDE STATION USED: 863-8610 Hampton Roads, Va.
Lat. $36^{\circ} 56.8'N$ Lon. $76^{\circ} 19.8'W$

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 4.01 ft.

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.6 ft.

REMARKS: RECOMMENDED ZONING

Apply a +24 minute correction for times and a X1.05 range ratio to heights using Hampton Roads, Va. (863-8610).

Note: Times are tabulated on Eastern Standard Time.

William M. Huber

CHIEF, DATUMS SECTION



GEOGRAPHIC NAMES

FE-408

Name on Survey

A ON CHART NO. 12245, 12222, 12248
B ON PREVIOUS SURVEY NO.
C ON U.S. QUADRANGLE MAPS
D FROM LOCAL INFORMATION
E ON LOCAL MAPS
F P.O. GUIDE OR MAP
G RAND McNALLY ATLAS
H U.S. LIGHT LIST
K

Name on Survey	A	B	C	D	E	F	G	H	K
CHESAPEAKE BAY (title)	X		X						1
HAMPTON ROADS	X		X						2
JAMES RIVER	X		X						3
NEWPORT NEWS	X		X						4
NEWPORT NEWS CHANNEL	X		X						5
NEWPORT NEWS POINT	X		X						6
VIRGINIA (title)	X		X						7
									8
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									25

Approved _____

Clara C. Lay
Chief Geographer

JAN 16 1996

01/23/96

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: FE-408

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	17
NUMBER OF SOUNDINGS	126

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	29	11/20/95
VERIFICATION OF FIELD DATA	70	12/07/95
QUALITY CONTROL CHECKS	0	
EVALUATION AND ANALYSIS	6	
FINAL INSPECTION	6	12/20/95
COMPILATION	33	01/02/96
TOTAL TIME	144	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		12/22/95

N/CS33-40-96

LETTER TRANSMITTING DATA

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY
(Check):

ORDINARY MAIL AIR MAIL

REGISTERED MAIL EXPRESS

GBL (Give number) _____

TO:

CHIEF, DATA CONTROL GROUP, N/CS3x1
NOAA/National Ocean Service
SSMC3, STATION 6813
1315 EAST-WEST HIGHWAY
SILVER SPRING, MARYLAND 20910

DATE FORWARDED

JAN 23, 1996

NUMBER OF PACKAGES

1 (ONE) TUBE

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

FE-408

VIRGINIA, CHESAPEAKE BAY, 1.5 NM NORTHEAST OF NEWPORT NEWS POINT

1 TUBE CONTAINING:

- 1 SMOOTH SHEET
- 1 ORIGINAL DESCRIPTIVE REPORT
 - MYLAR H-DRAWING FOR NOS CHART 12245
 - MYLAR H-DRAWING FOR NOS CHART 12248
- 1 PAPER COMPOSITE DRAWING FOR NOS CHART 12245
- 1 PAPER COMPOSITE DRAWING FOR NOS CHART 12248

FROM: (Signature)

DEBORAH A. BLAND



RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

ATLANTIC HYDROGRAPHIC BRANCH
N/CS331
439 WEST YORK STREET
NORFOLK, VA 23510-1114

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR FE-408 (1995)

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.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

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

AutoCAD, Release 12
Hydrographic Processing System
MicroStation, version 5.0
NADCON, version 2.10

H. CONTROL STATIONS

7. Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83). Office processing of this survey is based on these values.

To place this survey on the NAD 27 datum move the projection lines 0.532 seconds (16.382 meters or 1.64 mm at the scale of the survey) north in latitude, and 1.194 seconds (29.55 meters or 2.96 mm at the scale of the survey) east in longitude.

M. COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not performed. This is in accordance with section 4. of the memorandum titled "Changes to Hydrographic Survey Processing", dated May 24, 1995.

N. ITEM INVESTIGATION REPORTS

N15. Contact No. 760.58

An uncharted obstruction with a least depth of 52 feet, in Latitude 36°57'50.89"N, Longitude 76°20'05.16"W, was located by the field unit. The obstruction is believed to be the remains of an old degaussing installation. The obstruction is located inside the outbound half of the Norfolk Reach Channel. The least depth is deeper than the 50 foot project depth for the channel. It is recommended that this feature be charted as shown on the present survey.

- O. COMPARISON WITH CHART 12222 (36th Edition, Mar. 19/94)
12245 (52nd Edition, Feb. 12/94)
12248 (33rd Edition, Apr. 1/95)

The hydrographer makes adequate chart comparisons in sections N. and O. of the Descriptive Report.

The present survey is adequate to supersede the charted hydrography within the common area.

P. ADEQUACY OF SURVEY

3. This is an adequate side scan sonar survey. Additional work is recommended by the hydrographer in Section J., page 9 of the Descriptive Report.

S. MISCELLANEOUS

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

HECK PROCESSING TEAM

Deborah A. Bland for
Douglas V. Mason
Cartographic Technician

Deborah A. Bland
Deborah A. Bland
Cartographer

76° 20' 30"

76° 20' 00"

36° 58' 00"

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52                58        55
50                55 57    58 55
50 50             58 57    57 55
50 50 52 53 55 57 58 59 57 55
50 50 51 52 52 55 57 58 59 57 55
50 49 50 50 51 53 54 53 57 58 54 53
49 49 50 52 53 55 58 57 55
50 50 51 52 54 56 56 55 55
50 50 51 52 54 55 55 54
50 51 53 54 55 56 55 53
49 49 51 52 53 53 55 56 54 54 53
48 48 49 51 53 54 55 56
52 53 55 55 54
52 53 53
52 53 54

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Obstr

36° 57' 30"

FE-408
VIRGINIA
CHESAPEAKE BAY
1.5 NM NORTHWEST OF NEWPORT NEWS POINT
10 APR TO 14 APR 1995
1:10,000
VERTICAL DATUM: SOUNDINGS IN FEET AT MLLW
HORIZONTAL DATUM: NAD 83
SHEET 2 OF 2
AWOIS ITEM NUMBER 9382

APPROVAL SHEET
FE-408

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing. A final sounding printout of the survey has been made. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Deborah A. Bland

Deborah A. Bland
Cartographer
Atlantic Hydrographic Branch

Date: 12-22-95

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

Nicholas E. Perugini

Nicholas E. Perugini,
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: 12-22-95

Final Approval:

Approved: Andrew A. Armstrong III

Andrew A. Armstrong III
Captain, NOAA
Chief, Hydrographic Surveys Division

Dated: 1-24-96

