

H11222

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey **Basic Hydrographic**

Registry No. **H11222**

LOCALITY

State/Territory Florida

General Locality St. Johns River

Sub-locality Flint Point to Murphys Cove

2004

CHIEF OF PARTY
David B. Elliott -Team Leader

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 U.S. DEPARTMENT OF COMMERCE
(11-72) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

H11222

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 NUMBER: N/A

State/Territory: **Florida**
General Locality: **St. Johns River**
Sub-Locality: **Flint Point to Murphys Cove**
Scale: **1:10,000** Date of Survey: Aug.10, 2004 to Oct 14, 2004
Instructions Dated: **05 May 2003** Project Number: **OPR-G443-NRB**
Vessel: **NOAA Launch 1210**
Chief of Party: **David B. Elliott - Team Leader**
Surveyed by: **David Elliott, Robert Ramsey & Laurie Brennan (NRT2)**
Soundings by: **Innerspace 448**
Graphic record scaled by: **DE, RR, LB**
Graphic record checked by: **DE, RR, LB**
Hewlett Packard Design Jet 2500 CP (office)
Protracted by: **N/A** Automated Plot: **HP-750C (field)**
Verification by: **Atlantic Hydrographic Branch Personnel**
Soundings in: **Meters Feet at MLLW**

Remarks: ***Bold, red italic noted in the Descriptive Report (DR) were made during office processing.***

1) All Times are UTC.

2) This is a basic Hydrographic Survey under the Navigable Area Concept.

3) Projection is UTM Zone 17.

TABLE OF CONTENTS

A. AREA SURVEYED	2
B. DATA ACQUISITION AND PROCESSING	4
B.1. EQUIPMENT	4
B.2. QUALITY CONTROL	4
B.3. CORRECTIONS TO ECHO SOUNDING	6
C. VERTICAL AND HORIZONTAL CONTROL.....	6
D. RESULTS AND RECOMMENDATIONS	7
D.1. CHART COMPARISON	8
D.2. ADDITIONAL RESULTS	8
E. APPROVAL SHEET.....	9

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SURVEY H11222

Scale of Survey: 1:10,000

Year of Survey: 2004

Navigation Response Team 2 - Launch 1210

David B. Elliott- Team Leader

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Port Letter Instructions for project OPR-G443-NRB, Brunswick Georgia to Jacksonville, Florida. The instructions are dated May 5, 2003 and change dated June 17, 2004.

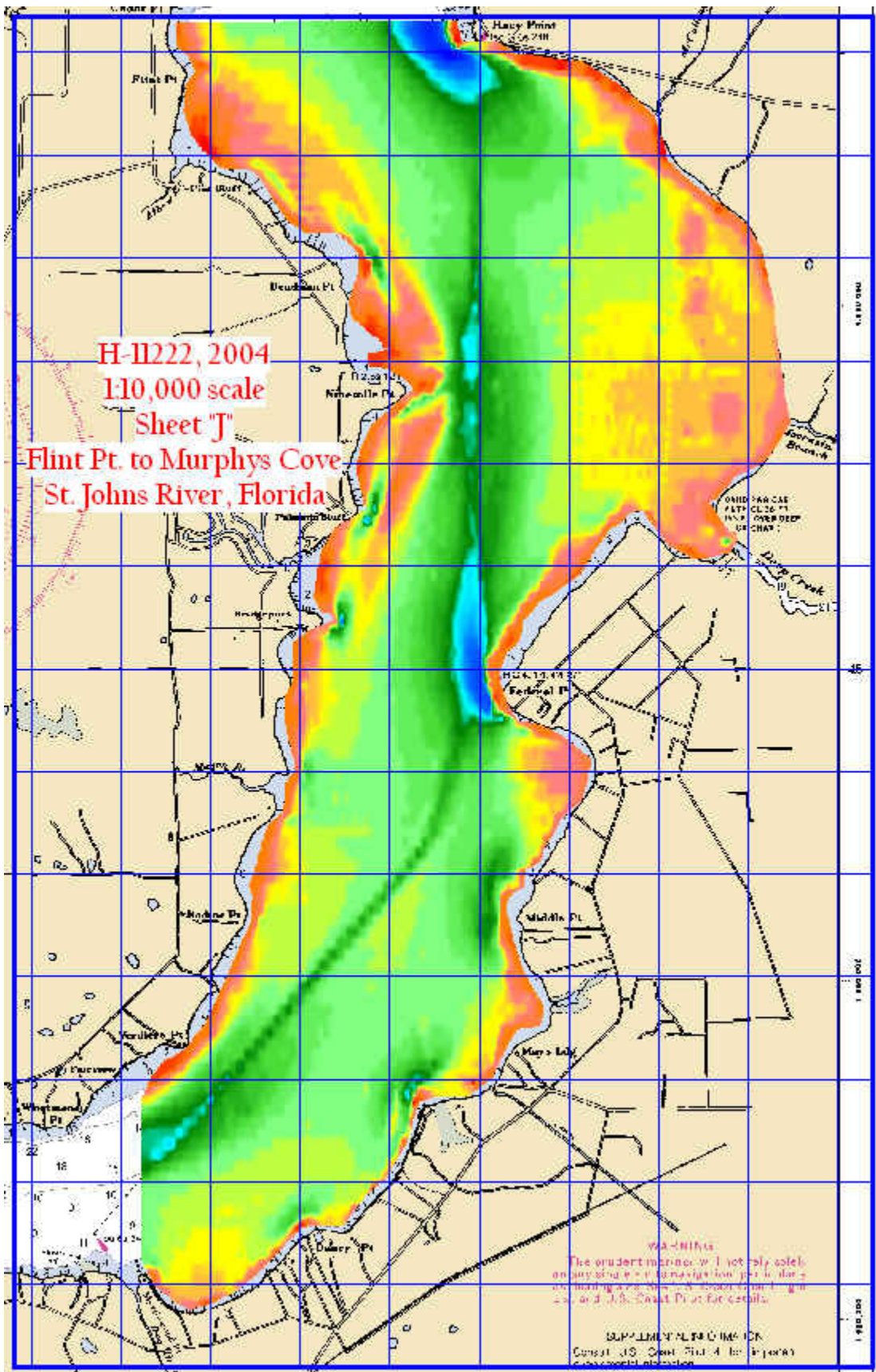
The purpose of this project is to collect new hydrography in support of the NOAA led Coastal Storms Initiative and to update National Ocean Service (NOS) charts on the St. Johns River in the vicinity of Jacksonville, FL. Results from the investigations will also serve as a chart evaluation for NOS Electronic Nautical Charts (ENC). The hydrographic data from this project will help ensure navigational safety through updated critical nautical charts and provide new information for emergency response organizations to use in the event of a marine casualty or coastal storm.

Survey Limits for Sheet "J" - H11222 are as follows:

29° 41' 36" N
081° 30' 49" W
29° 48' 10" N
081° 35' 33" W

Survey Dates: August 10, 2004 (DN: 223) to October 14, 2004 (DN: 288)

Survey limits are displayed graphically in the chartlet on the following page .



H-11222, 2004
1:10,000 scale
Sheet 'J'
Flint Pt. to Murphys Cove
St. Johns River, Florida

WARRANTY
The undersigned will not be held
responsible for any damage or loss of
property or life resulting from the
use of this chart. Consult the U.S.
Coast Pilot for details.

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilot 4 for a
current cross-current observation.

B. DATA ACQUISITION AND PROCESSING *See Also The Evaluation Report*

B.1. EQUIPMENT

Data were acquired by Navigation Response Team 2 and survey Launch 1210. The vessel was configured as described in the Data Acquisition and Processing Report (DAPR)* for this project. Major data acquisition systems are summarized below. * *Filed at the Atlantic Hydrographic Branch (AHB).*

An Innerspace model 455 depth sounder, S/Ns 189 was used to collect all echo soundings on this survey. A standard lead line calibrated in meters, S/N 1210, was used during this survey for comparison with the echo sounder. No problems were encountered with any of the sounding equipment.

A Klein 3110 side scan sonar recorder (S/N 315) with a model 3210 towfish (S/N 414), was used throughout this survey. The side scan sonar equipment was used to investigate AWOIS items.

A Trimble DGPS Beacon Receiver (S/N 0220261525) was used as the primary navigation station on launch 1210.

A Trimble Pathfinder ProXRS (S/N 0224010201) and antenna (S/N 0220170250) were used for all ENC high accuracy positioning and establishment of calibration points.

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler, model 19-03, S/N 198671-1477.

NOAA launch 1210, a 27-foot SeaArk with a draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

B.2. QUALITY CONTROL

The integrity of the survey data for H11222 has been insured by following the Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, June 2003.

The lead line for launch 1210 was calibrated using a steel tape on March 25, 2003(DN:084). No corrections were necessary. A static draft of 0.5 meters was applied to the sounding plots by the Carris program. The draft was measured by subtracting the difference from a punch mark on the side of launch 1210, 0.6 meter above the transducer, to the water surface.

Settlement and squat measurements for launch 1210 were taken on March 25, 2003(DN:084) These measurements were conducted in Jacksonville, FL on the St. Johns River using the level method. Settlement and squat correctors were applied to the sounding plots using the Carris program.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4.4 by comparing the DGPS position of the vessel to a high accuracy (1st order) calibration point.

Side Scan Sonar Quality Control

Daily confidence checks were conducted by observing side scan imagery in the vicinity of known contacts, such as buoys or sand waves. Side scan data were considered satisfactory if these contacts could be distinguished throughout the entire range of the side scan trace. The confidence checks were performed daily at 100kHz.

A coverage of 200% was obtained wherever possible in the required survey areas and AWOIS items where water depth and/or hazards permitted. Side scan sonar coverage was conducted to the 12-foot depth curve and single beam reduced line spacing was performed in other areas where warranted. The towfish was deployed off the starboard quarter of the vessel, which proved very stable. Distorted images caused by strong tidal currents were seen periodically. All contacts and shadows were scaled and entered into Carris HIPS/SIPS to determine the height off the bottom. The significant contacts were then compared by position, as well as common depth and relationship to channels to determine if further investigations were needed. All areas surveyed were track line/swath line plotted to insure complete coverage.

The system frequencies used were 100kHz and 500kHz. The recorder was set on one of either 50/75/100-meter range scales. There were no water depths greater than 35 meters.

When operating in shoaler waters (e.g. less than 30 meters deep), a short tow was required for the Klein system. When cable-out was approximately 7 meters or less, minor degradation of the side scan imagery and Innerspace echosounder traces were noted due to cross-talk between the two systems.

Crossline and mainscheme sounding data were compared using MAPINFO 5.1, with no significant discrepancies observed.

Junctions *See also the Evaluation Report.*

This survey H11222 junctions with survey H11223, Sheet "K" 2004 to the south. The survey soundings compared favorably within one to two feet. *Concur.*

B.3. CORRECTIONS TO ECHO SOUNDING

A table detailing all sound velocity casts is contained in Separates III* - Sound Velocity Profile Data. Sound velocity data has been submitted with the digital data package. Cast data is organized on the digital media as follows: vessel / day of cast / cast data.

There are no deviations to be discussed in this section.

C. VERTICAL AND HORIZONTAL CONTROL

The instrument used for determining corrections for the speed of sound through the water column was a Seabird-Seacat Velocity Profiler. The manufacturer calibrated this unit on December 19, 2003. Data quality assurance tests were performed after each cast. Program VELOCWIN was used for computing the correctors. Corrections were applied to the sounding plot using the Carris HIPS.

Field tide reduction of soundings is based on unverified actual water levels from the NOAA Co-Ops site. The values are from I-295 Bridge station 872-0357, Red Bay Point station 872-0503, Racy Point station 872-0625, Palatka station 872-0774 and are in six minute intervals. Values and correctors were applied at the perspective locations of Hydrography from the Zone files provided by CO-OPS/RDD. *Approved tides and zones were applied to the present survey during office processing.*

All elevations and soundings on survey H11222 are based on MLLW unless otherwise specified.

A Request for Approved Tides letter was sent to N/OPS1 on Oct. 15, 2004 (Appendix IV).*

Horizontal Control *See also the Evaluation Report.*

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 17. The control reference station used for this survey was the USCG DGPS Station at Savannah, GA (Station ID #818), located at 32°08.3156' N, 081°41.7798' W.

Horizontal dilution of precision (HDOP) was monitored on Hypack daily on all survey platforms. Neither value exceeded 4.00, and adequate satellite coverage was maintained throughout the survey period. All positioning equipment was operated in a manner consistent with the manufacturer's requirements and as described in the DAPR**. There were no equipment malfunctions which affected the positional quality of the data.

* *Filed with the original field data.*

** *Filed at AHB.*

D. RESULTS AND RECOMMENDATIONS

There is ~~one~~ *are two* charts affected by this survey:

11487, 19th edition, Nov. 24, 2001 1:40,000
11492, 19th edition, Nov. 24, 2001 1:40,000

General Agreement with Charted soundings

In general survey soundings compared with the charted soundings within one to two feet. The smooth tides may resolve some of these soundings. All charted soundings should be superseded by this survey.

Note: Due to the nature of this survey for the Coastal Storms Initiative (CSI) and primary need for contemporary bathymetry, extensive shoreline investigations were not conducted. However visual identifications conducted by NRT2 found regions alongshore in the form of Dols, piles and piers to be adequately charted. Unless otherwise noted in the sections below all features along shore visible or submerged should remain as charted.

The following is a list of notable sounding discrepancies on the chart:

- 1.) The general vicinity of Pine Bluff at 29° 47' 38.3" N, 081° 34' 17.4 W, the six foot contour has migrated seaward 380 meters east. *Concur.*
- 2.) The general vicinity at 29° 46' 42.7" N, 081° 33' 22.1 W, the six-foot contour has migrated seaward 300 meters east. *Concur.*
- 3.) There are now 3 foot soundings centered at 29° 46' 00" N, 081° 33' 24" W. This area is now an isolated six-foot contour approximately one-quarter mile long where 8-foot soundings are currently charted. *Present survey soundings are 4 to 5 feet after application of approved tides during office processing.*
- 4.) There is shoaling to two feet at 29° 43' 00" N, 081° 33' 02" W, seaward of the six foot contour. *Concur.*
- 5.) The isolated six-foot sounding at 29° 43' 07.4" N, 081° 32' 57.2" W, does not exist. *Concur. Present survey depths are seven to eight feet.*
- 6.) The six-foot contour at 29° 44' 30" N, 081° 32' 30.2" W, has migrated seaward 300 meters west. *Concur.*

- 7.) The isolated six-foot sounding at 29° 46' 39" N, 081° 31' 32" W, does not exist. **Concur. Present survey depths are seven feet.**
- 8.) A notable deep scour now exists offshore of Racy Point at 29° 48' 00" N, 081° 33' 14.8" W, the depths range to 32-33 feet deep where 17 feet is currently charted. **Concur.**

The following is a list of items that were investigated or disproved by 200% side scan sonar:

There was no side scan conducted on H11222.

The following is a list of Charted sounding notations that were investigated by echo sounder.

- 1.) The 13-foot centerline of June 2001 at 29° 47' 12" N, 081° 32' 58" W, is now reflecting depths of 14 to 15 feet. **Hydrography was conducted perpendicular to the centerline. Retain the notation 13 FT CENTERLINE JUNE 2001.**
- 2.) The 13-foot centerline of June 2001 at 29° 43' 34" N, 081° 33' 51" W, is now reflecting depths of 14 to 15 feet. **Hydrography was not conducted parallel to the centerline. Retain the notation 13 FT CENTERLINE JUNE 2001.**

The following is a list of Charted items that were visually investigated.

- 1.) The foul area at 29° 48' 06.5" N, 081° 33' 03.8" W, exists as charted. **Concur. Retain as charted.**
- 2.) The pipe at 29° 42' 57.3" N, 081° 33' 18.1" W, exists as charted. **Concur. Retain as charted.**
- 3.) The submerged wreck at 29° 42' 16.9" N, 081° 34' 01.9" W, exists as charted. **Concur. Retain as charted.**
- 4.) The stakes reported at ~~29° 43' 35.7" N, 081° 34' 15.4" W~~ **29° 43' 16.50" N, 081° 34' 30.00" W**, do not exist and should be removed from the chart. **Concur. Delete the note, Stakes rep.**
- 5.) The stakes reported at ~~29° 43' 35.7" N, 081° 34' 15.4" W~~ **29° 43' 01.02" N, 081° 34' 47.31" W**, do not exist and should be removed from the chart. **Concur. A charting recommendation is discussed on page 9, paragraph 16.), in the Descriptive Report for H11223 (2004).**
- 6.) The ruins at 29° 46' 16" N, 081° 33' 27.2" W, do not exist and should be removed from the chart. **Concur. Delete the ruins.**

Note: All currently charted foul areas within the confines of H11222 should remain as charted.

AWOIS Item Investigations

There were no AWOIS items within the survey limits. *Concur.*

Dangers to Navigation

There were no DTONS within the confines of H11222. *Concur.*

D. 2. ADDITIONAL RESULTS

Aids to Navigation and Other Detached Positions

All Navigation Aids serve their intended purpose. Charted positions should be superseded by new survey positions. *Concur.*

All fixed ranges were not positioned during H11222 due to being positioned by ENC methods and submitted as a stand-alone document at the FTP site for ELRIC.NCD.NOAA.GOV. Located under NRB Uploads for NRT2, SJR.

Ferry Routes

There are no Ferry routes within the confines of H11222. *Concur.*

Submarine Cables and Pipelines

There are no submerged cable crossings, there are no submerged pipeline crossings and only one overhead cable crossing area within the confines of H11222. The crossing is charted adequately and the overhead clearance was verified by NRT2. *Concur.*

Bridges

There are no bridges within the confines of H11222. *Concur.*

E. APPROVAL SHEET

**OPR-G443-NRB
St. Johns River
Jacksonville, FL
Survey Registry No. H11222**

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, this Descriptive Report, and all accompanying records and data are approved.

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Submitted:



**David B. Elliott - Team Leader
Navigation Response Team 2**



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: April 28, 2005

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-G443-NRT2-2004
HYDROGRAPHIC SHEET: H11222

LOCALITY: Flint Point to Murphys Cove, St. Johns River, FL
TIME PERIOD: August 10 - October 14, 2004

TIDE STATION USED: 872-0774 Palatka, FL
Lat. 29° 38.6'N Lon. 81° 37.9'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.416 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: SJR56, SJR57, SJR57A & SJR58.

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.

Thomas N. Hess 4/29/05

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



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**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT FOR H11222 (2004)**

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.

B. DATA ACQUISITION AND PROCESSING

B.1 EQUIPMENT

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

Hydrographic Processing System
MicroStation J, version 07.01.04.16
I/RAS B, version 07.01.000.18
MapInfo, version 6.5
CARIS HIPS/SIPS 5.4
PYDRO, version 5.3.3rc5

Junctions

H11221 (2004) to the north
H11223 (2004) to the southwest

A standard junction was effected between the present survey and surveys H11221 (2004) and H11223 (2004).

C. VERTICAL AND HORIZONTAL CONTROL

Horizontal Control

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM Zone 17N. Office processing of this survey is based on these values.

D. RESULTS AND RECOMMENDATIONS

**CHART COMPARISONS 11487 (19th Edition, Nov 24/01)
11492 (20th Edition, Apr 07/05)**

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes an

adequate chart comparison in section D. of the Descriptive Report. The following should be noted:

The shoreline on the east side of the river from Latitude 29°46'06"N, to Latitude 29°47'00"W has receded to the east. It is recommended that the shoreline application in this area be deferred to Marine Charting Division (MCD) for review and disposition.

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

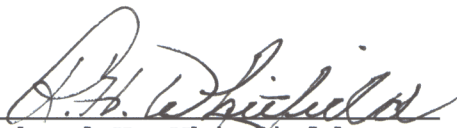
ADEQUACY OF SURVEY

This is an adequate hydrographic survey. No additional work is recommended.

MISCELLANIOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. The following NOS charts were used for compilation of the present survey.


- 11487 (19TH Edition, Nov 24/01)
- 11492 (20th Edition, Apr 07/05)

A handwritten signature in cursive script, appearing to read "R. H. Whitfield". The signature is written in dark ink and is positioned above a horizontal line.

Richard H. Whitfield
Cartographer
Verification of Field Data
Evaluation and Analysis

APPROVAL SHEET
H11222 (2004)



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



Norris A. Wike, Cartographer,
Atlantic Hydrographic Branch

Date: 8/26/05

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.

Approved: 
 P. Tod Schattgen
Commander, NOAA
Chief, Atlantic Hydrographic Branch

Date: 28 SEPTEMBER 2005

