W00469

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Survey

DESCRIPTIVE REPORT

Type of Survey:	External Source Data
Registry Number:	W00469

LOCALITY

State(s):	U.S. Virgin Islands
General Locality:	St. Thomas
Sub-locality:	Crown Bay

2019

Arc Surveying & Mapping, Inc.

LIBRARY & ARCHIVES

Date:

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

REGISTRY NUMBER:

HYDROGRAPHIC TITLE SHEET

W00469

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(s):	**U.S. Virgin Islands**
General Locality:	**St. Thomas**
Sub-Locality:	**Crown Bay**
Scale:	**5000**
Dates of Survey:	**02/17/2019 - 02/18/2019**
Project Number:	**ESD-AHB-19**
Data Source:	**Arc Surveying & Mapping, Inc.**
Chief of Party:	**Richard J. Sawyer**
Soundings by:	**Multibeam Echo Sounder**
Imagery by:	**N/A**
Verification by:	**Atlantic Hydrographic Branch**
Soundings Acquired in:	**Meters at Mean Lower Low Water**

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via https://www.ncei.noaa.gov/.

Arc Surveying & Mapping, Inc.
5202 San Juan Avenue
Jacksonville, Florida 32210

SURVEYOR'S REPORT
Hydrographic Survey – Crownbay
Tropical Shipping – St Thomas USVI
Survey No. ARC 190129

Report of Survey: Richard J. Sawyer, PSM, ACSM Certified Hydrographer, Arc Surveying and Mapping, Inc., 5202 San Jun Ave., Jacksonville, Florida - 32210.

Project: Crownbay, Tropical Shipping Examination Survey

Location: St Thomas, U S Virgin Islands

Date of Survey: February 17_18, 2019

Right of Access: There were no issues of access for this project.

Personnel: Hydrographer: Patrick Sawyer
Survey Technician: Johnny Cogdell

Datum: Horizontal coordinates are referenced to UTM North Zone 20, Meters
Elevations were referenced to MLLW meters utilizing the verified tides from Arc New 1 and referenced to NOAA Tidal Station 9751639 Charlotte Amalie VI and A-1000

Survey Site Control:

975 1639 G NOS BRASS CAP
Northing: 2028277.869
Easting: 297166.004
Elevation: MLLW 2.47

ARC New 1 X-CUT @Crown Bay Marina fuel dock
Northing: 628100.4653
Easting: 1259846.78
Elevation: MLLW 1.684

A 1000 NOS MONUMENT
Northing: 2028738.647
Easting: 294405.518
Elevation:VIV09 4.668

Field Instrumentation:

Survey Vessel:	Blue Witch 26' Safe Boat
Data Acquisition Software:	HYPACK and HYSWEEP version 2018
Multibeam Sounder:	Reson T20 (Multibeam) operating @ 200 kHz
Vessel Positioning:	Applanix PosMV WaveMaster
	Trimble R-10 Base/ Reciever / TT 450s Base Radio
IMU:	Applanix PosMV WaveMaster
SVP:	Teledyne Odom Digibar Pro
SVP @ Transducer	AML Smart Probe

Field Procedures: The survey was performed utilizing Real-Time Kinematic (RTK) GPS surveying procedures for horizontal positioning. Control point ARC New 1 was established from NOS Monument 975 1639 and NOS Monument A 1000 and a OPUS solution based a 6-hour occupation. A bar check and Patch test were performed prior to the start of the survey. The base receiver occupied survey point ARC New 1 a set x-cut at the crown bay marina fuel docks for the duration of the survey. Positional accuracy verification was documented at the beginning and end of each day of survey data acquisition. The verified tides were used from RTK corrections broadcast from the base unit to the vessel during survey operations. Sound velocity profiles were obtained during the course of the survey. The Swath width was set to 110 degrees and line spacing maintained at an interval to assure 200% bottom coverage. Cross lines were taken throughout the survey area to verify the patch test. Survey field log containing positional verifications, water surface verifications and multibeam data acquisition coverage were logged.

Data Processing: The survey data was processed using the continuous observed tide readings from Arc New 1. Sounding spikes were removed and quality assurance was performed during HYSWEEP processing by examining differences in overlapping lines as well as overlapping segments. XYZ (asci) files were produced at a .3x.3min and an unsorted file.

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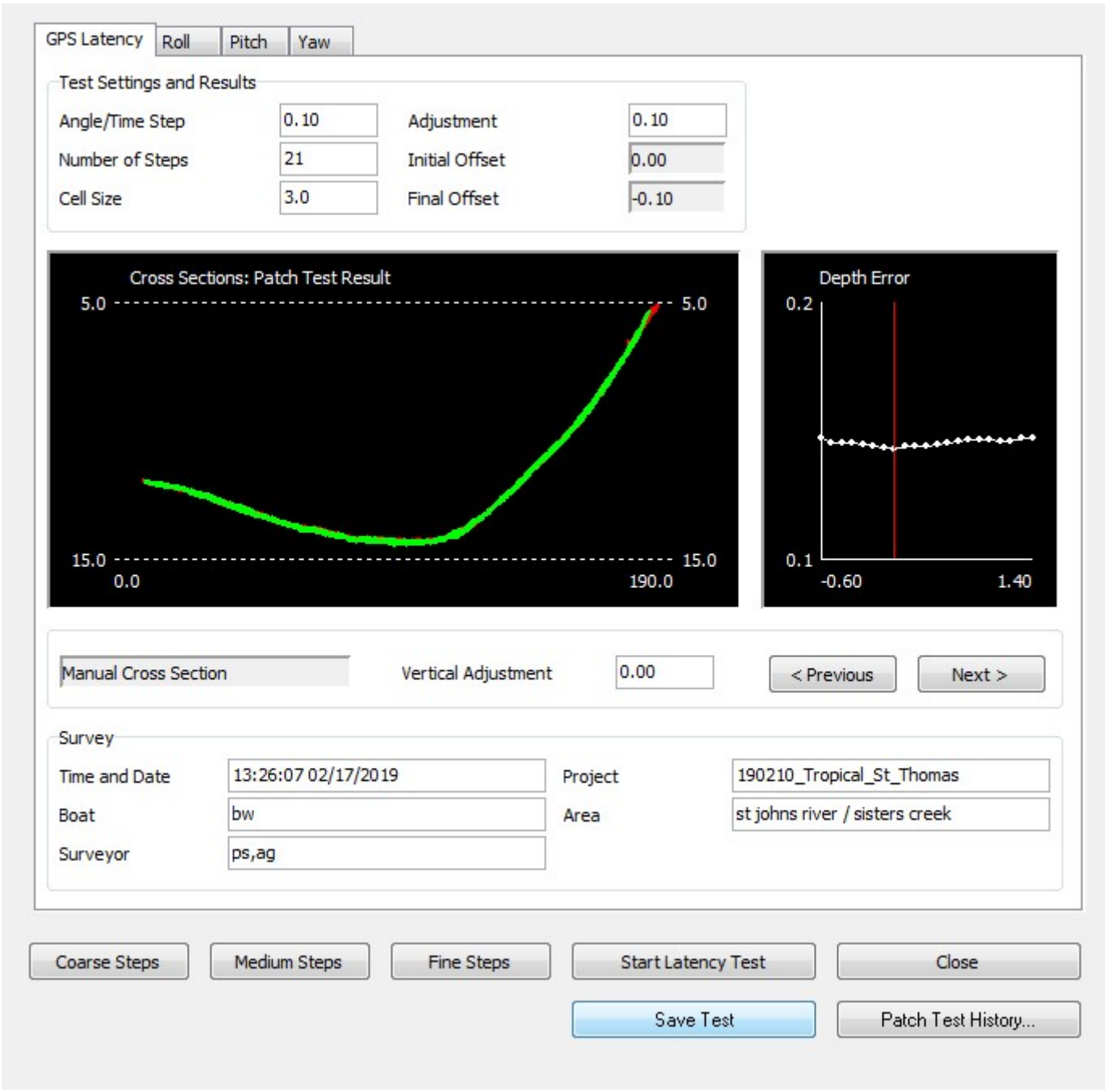
Richard J. Sawyer, ACSM Certified Hydrographer No. 194
Professional Surveyor and Mapper No. 6131

2/17/2019


GPS Latency
Roll
Pitch
Yaw
Test Settings and Results
Angle/Time Step
0.10
Adjustment
0.10
Number of Steps
21
Initial Offset
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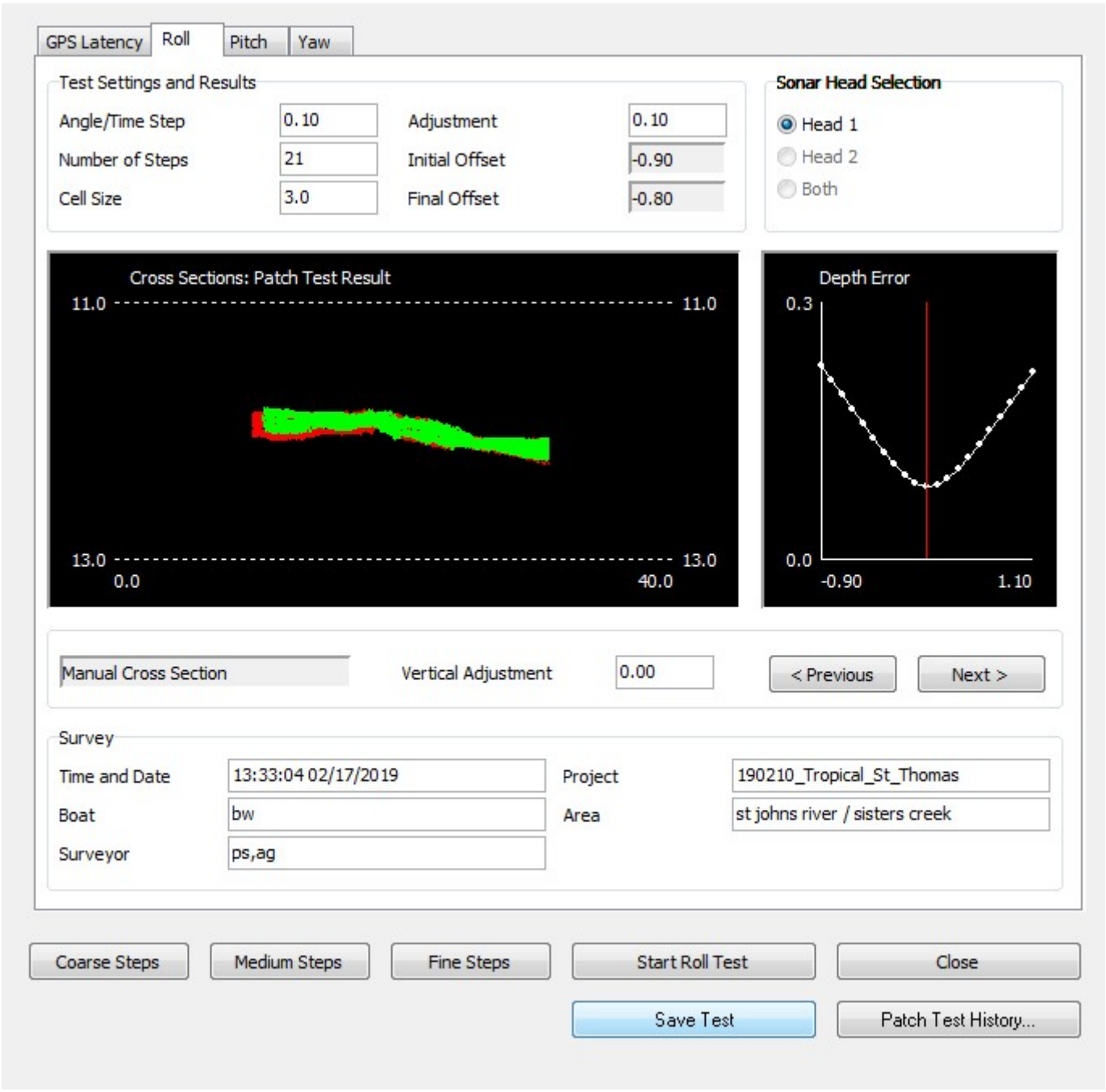
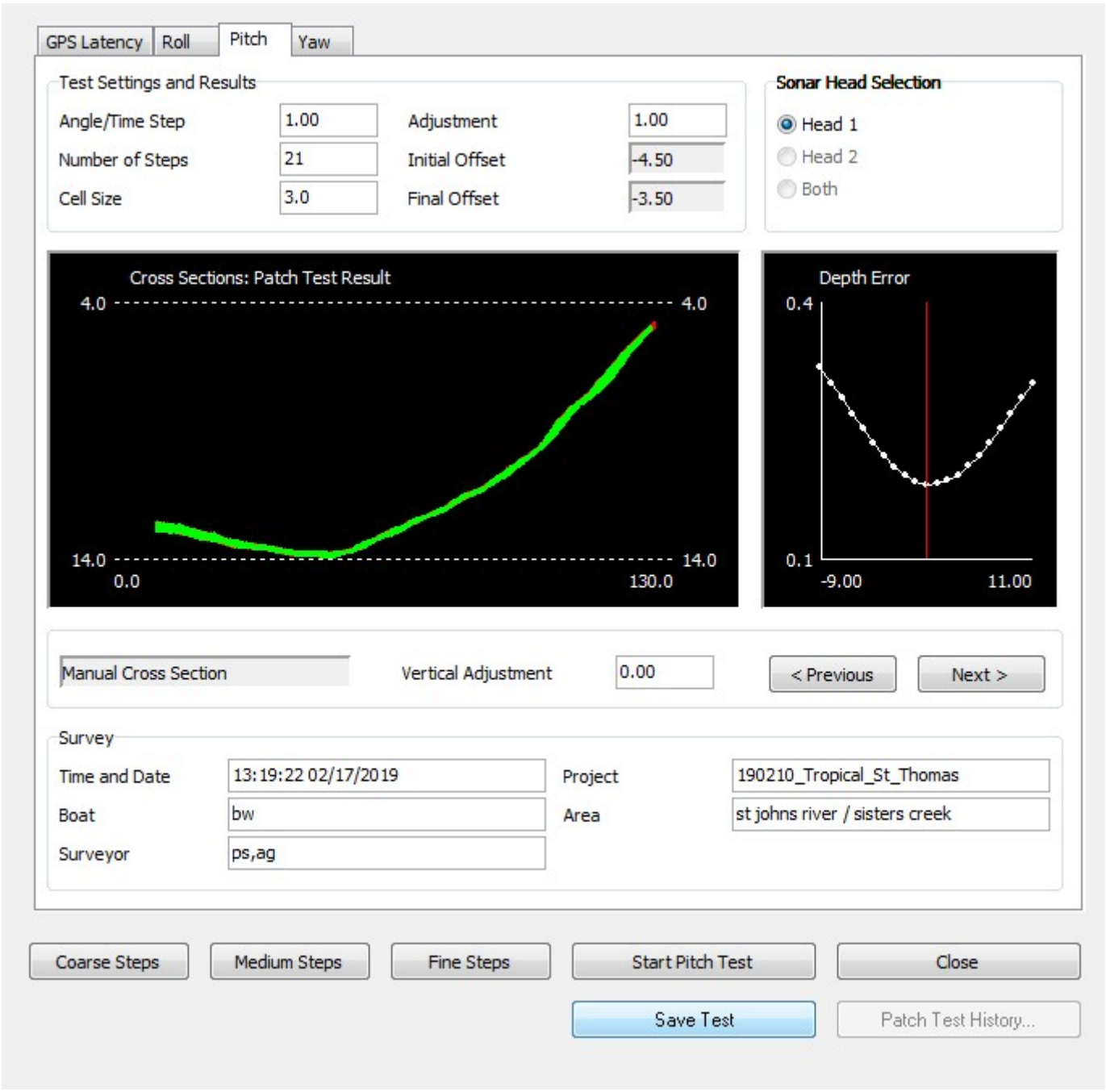
Cell Size
3.0
Final Offset
-0.10
Cross Sections: Patch Test Result
5.0
5.0
15.0
15.0
0.0
190.0
Depth Error
0.2
0.1
-0.60
1.40
Manual Cross Section
Vertical Adjustment
0.00
< Previous
Next >
Survey
Time and Date
13:26:07 02/17/2019
Project
190210_Tropical_St_Thomas
Boat
bw
Area
st johns river / sisters creek
Surveyor
ps,ag
Coarse Steps
Medium Steps
Fine Steps
Start Latency Test
Close
Save Test
Patch Test History...

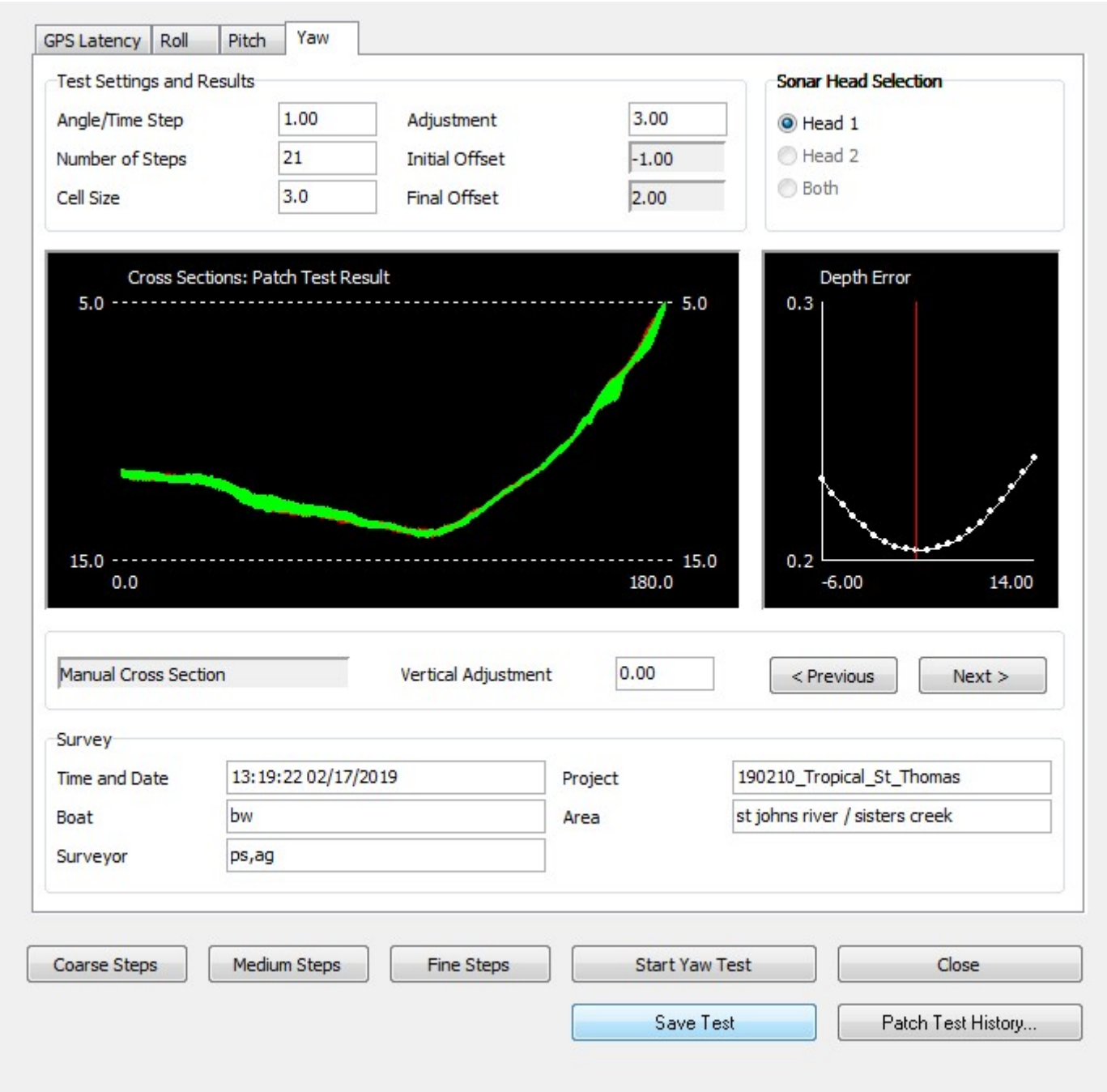
2/17/2019


GPS Latency
Roll
Pitch
Yaw
Test Settings and Results
Angle/Time Step
0.10
Adjustment
0.10
Number of Steps
21
Initial Offset
-0.90
Cell Size
3.0
Final Offset
-0.80
Sonar Head Selection
Head 1
Head 2
Both
Cross Sections: Patch Test Result
11.0
11.0
13.0
13.0
0.0
40.0
Depth Error
0.3
0.0
-0.90
1.10
Manual Cross Section
Vertical Adjustment
0.00
< Previous
Next >
Survey
Time and Date
13:33:04 02/17/2019
Project
190210_Tropical_St_Thomas
Boat
bw
Area
st johns river / sisters creek
Surveyor
ps,ag
Coarse Steps
Medium Steps
Fine Steps
Start Roll Test
Close
Save Test
Patch Test History...

2/17/2019


GPS Latency
Roll
Pitch
Yaw
Test Settings and Results
Angle/Time Step
1.00
Adjustment
1.00
Number of Steps
21
Initial Offset
-4.50
Cell Size
3.0
Final Offset
-3.50
Sonar Head Selection
Head 1
Head 2
Both
Cross Sections: Patch Test Result
4.0
4.0
14.0
14.0
0.0
130.0
Depth Error
0.4
0.1
-9.00
11.00
Manual Cross Section
Vertical Adjustment
0.00
< Previous
Next >
Survey
Time and Date
13:19:22 02/17/2019
Project
190210_Tropical_St_Thomas
Boat
bw
Area
st johns river / sisters creek
Surveyor
ps,ag
Coarse Steps
Medium Steps
Fine Steps
Start Pitch Test
Close
Save Test
Patch Test History...

2/17/2019


GPS Latency
Roll
Pitch
Yaw
Test Settings and Results
Angle/Time Step
1.00
Adjustment
3.00
Number of Steps
21
Initial Offset
-1.00
Cell Size
3.0
Final Offset
2.00
Sonar Head Selection
Head 1
Head 2
Both
Cross Sections: Patch Test Result
5.0
5.0
15.0
15.0
0.0
180.0
Depth Error
0.3
0.2
-6.00
14.00
Manual Cross Section
Vertical Adjustment
0.00
< Previous
Next >
Survey
Time and Date
13:19:22 02/17/2019
Project
190210_Tropical_St_Thomas
Boat
bw
Area
st johns river / sisters creek
Surveyor
ps,ag
Coarse Steps
Medium Steps
Fine Steps
Start Yaw Test
Close
Save Test
Patch Test History...

APPENDIX I

TIDES AND WATER LEVELS

Survey W00469 does not include supplemental tide or water level information.

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

Survey W00469 does not include supplemental survey records or correspondence.

APPROVAL PAGE

W00469

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NCEI for archive

- Descriptive Report
- Single resolution BAG
- Processed survey data and records
- GeoPDF of survey products

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Digitally signed by
PARKER.CASTLE.E.1365864280
Date: 2019.03.12 13:01:41
-04'00'

Approved:_____

Commander Briana W. Hillstrom, NOAA
Chief, Atlantic Hydrographic Branch

Signing for AHB Chief:
Castle Eugene Parker
Hydrographic Team Lead / Physical Scientist
Atlantic Hydrographic Branch