

F00720

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

DESCRIPTIVE REPORT

Type of Survey: Field Examination

Registry Number: F00720

LOCALITY

State(s): North Carolina

General Locality: NC Coastline

Sub-locality: 18 NM Offshore of Currituck Beach

2018

CHIEF OF PARTY
Christiaan van Westendorp,
CDR/NOAA

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

F00720

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): **North Carolina**

General Locality: **NC Coastline**

Sub-Locality: **18 NM Offshore of Currituck Beach**

Scale: **1:10,000**

Dates of Survey: **05/01/2018**

Project Number: **OPR-D304-TJ-18**

Field Unit: **NOAA Ship Thomas Jefferson**

Chief of Party: **Christiaan van Westendorp, CDR/NOAA**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Multieam Echo Sounder Backscatter**

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/>.

The field unit collected data and produced products in World Geodetic System (WGS) 1984 Horizontal Datum. In congruence with products archived at NCEI, all products have been regenerated in the North American Datum (NAD) 1983 Horizontal Datum.

Descriptive Report Summary F00720	
Project	OPR-D304-TJ-18
Survey	F00720
State	North Carolina
Locality	NC Coastline
Sub Locality	18 NM Offshore of Currituck Beach
Scale of Survey	1:10,000
Sonars Used	Kongsberg EM2040 (MBES) Kongsberg EM710 (MBES)
Horizontal Datum	World Geodetic System (WGS) 1984
Vertical Datum	Mean Lower Low Water
Vertical Datum Correction	VDatum
Projection	Universal Transverse Mercator (UTM) Zone 18 North
Field Unit	NOAA Ship <i>Thomas Jefferson</i>
Survey Dates	05/01/2018
Chief of Party	CDR Christiaan van Westendorp, NOAA

A. Area Surveyed

This hydrographic survey was acquired in accordance with the requirements defined in the OPR-D304-TJ-18 Project Instructions.

Data were acquired within the following survey limits (Table 1 and Figure 1):

Northwest Limit	Southeast Limit
36° 27' 55" N 75° 26' 9" W	36° 25' 29" N 75° 23' 42" W

Table 1: F00720 survey limits

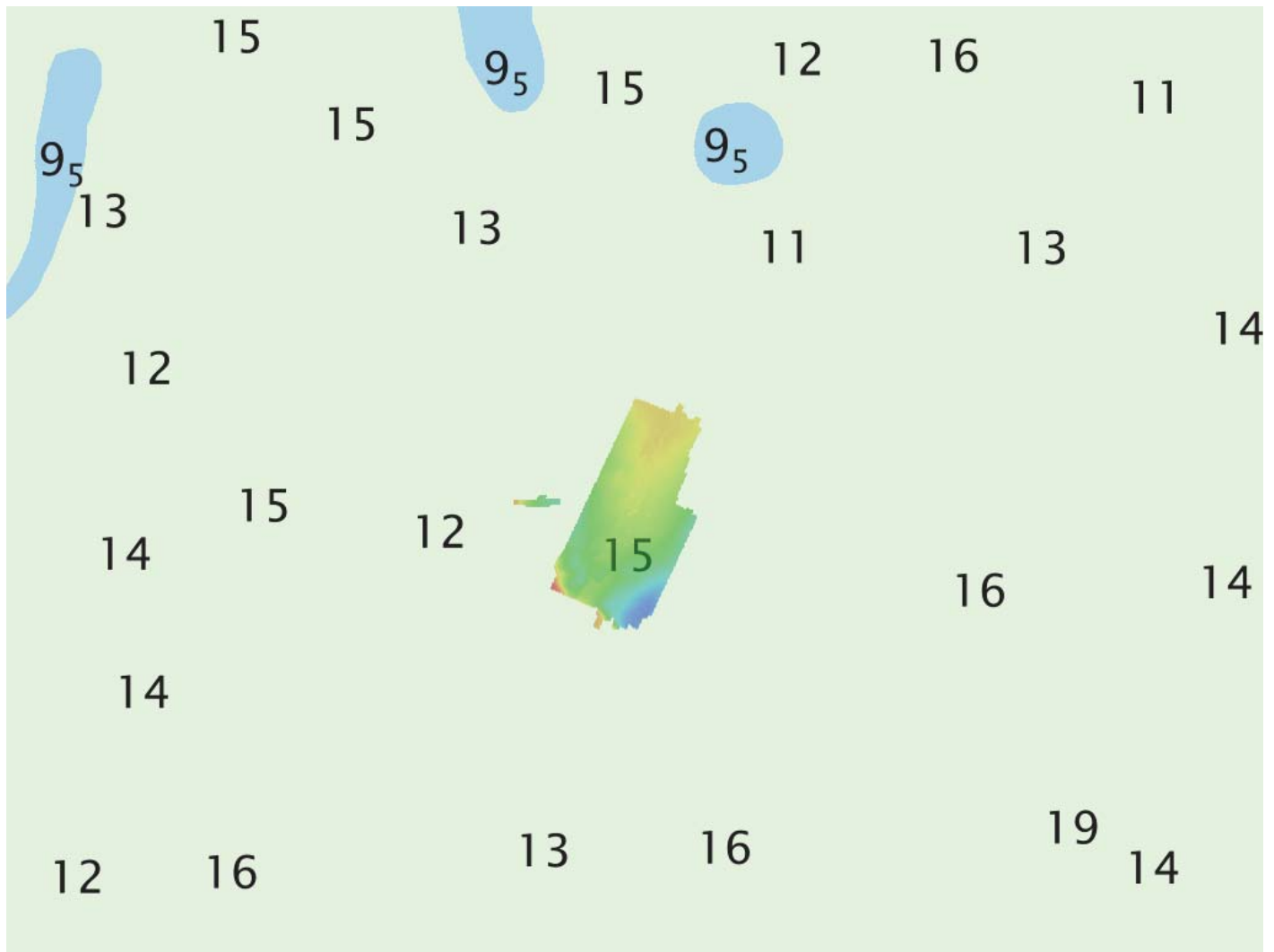


Figure 1: F00720 survey area

B. Survey Purpose

On 03/04/2018, Maersk vessel *Shanghai* lost 76 shipping containers overboard during a storm. A previous search for the submerged containers was conducted from 03/14/2018 - 03/16/2018 using side scan sonar, which identified 61 contacts associated with the containers. The purpose of survey F00720 was to investigate the side scan targets and determine the least depths of the shipping containers using object detection multibeam.

C. Intended Use of Survey

The entire survey is adequate to supersede previous data.

Although this survey is adequate to supersede previous data, it is recommended to archive the survey without applying chart updates.

D. Data Acquisition and Processing

Refer to the OPR-D304-TJ-18 Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition systems, survey vessels, quality control procedures, and data processing methods.

E. Uncertainty

The values used to calculate Total Propagated Uncertainty (TPU) are listed below. Refer to the DAPR for more information regarding uncertainty methods.

Real-time MarineStar corrected vertical position uncertainty: 0.080 m

Ellipsoidal Referenced Survey (ERS) separation model uncertainty (via VDatum): 0.090 m

Sound speed measured: 2.000 m/s

Sound speed surface: 0.200 m/s

The finalized surface was examined using Pydro QC Tools version 2 (Figures 2 and 3). The surface complies with all requirements in the 2018 Hydrographic Surveys Specifications and Deliverables (HSSD).

Uncertainty Standards

Grid source: F00720_MB_1m_MLLW_Final

99.5+% pass (7,177,146 of 7,177,520 nodes), min=0.39, mode=0.46, max=2.43

Percentiles: 2.5%=0.43, Q1=0.45, median=0.47, Q3=0.48, 97.5%=0.55

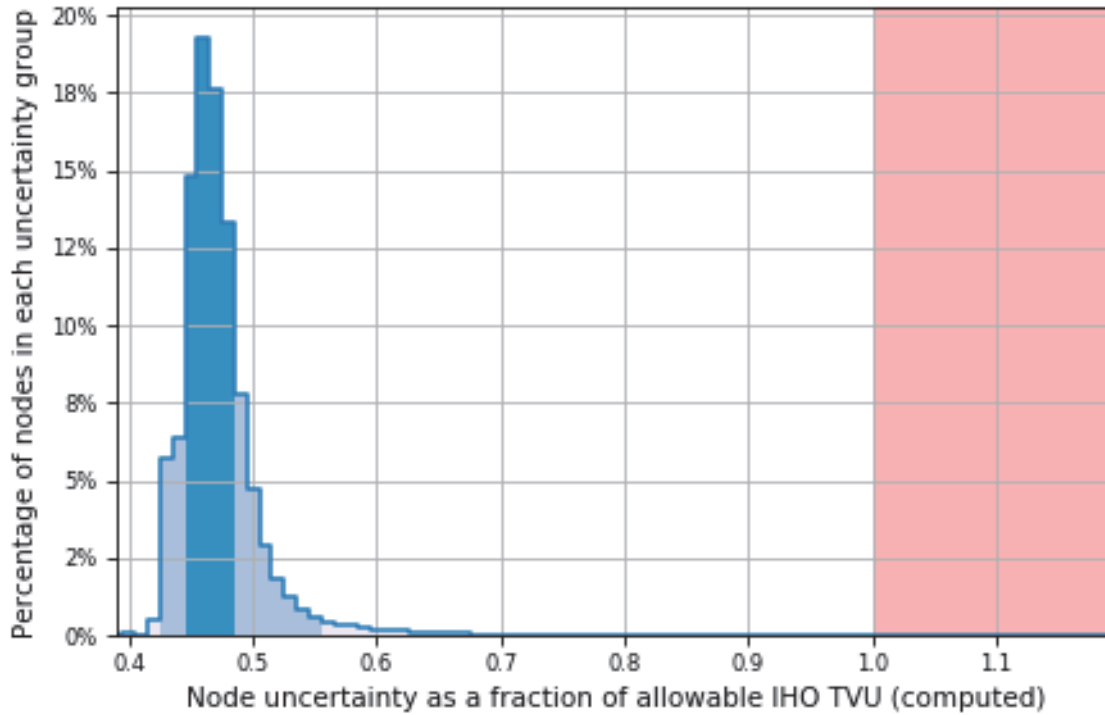


Figure 2: More than 99.5% of nodes in the finalized surface meet HSSD uncertainty requirements

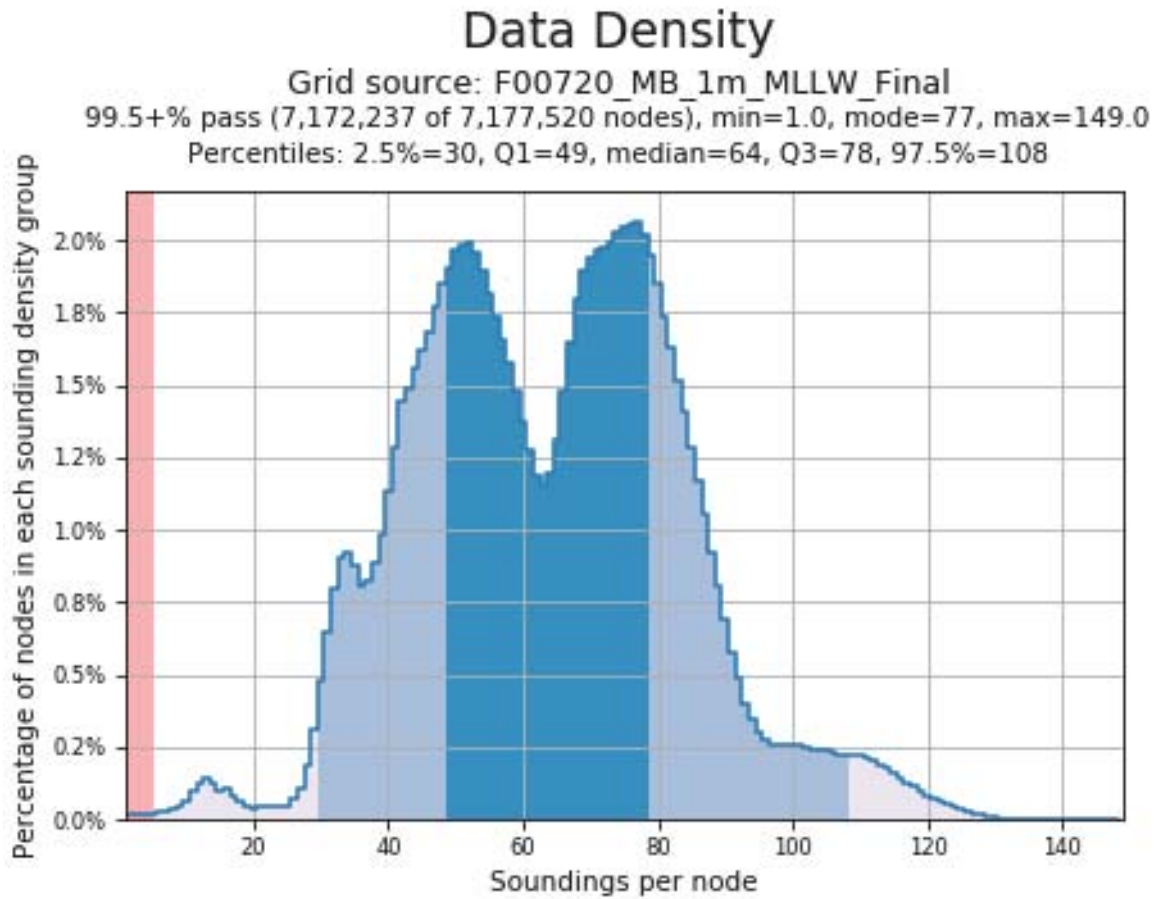


Figure 3: More than 99.5% of nodes in the finalized surface meet HSSD density requirements

F. Results and Recommendations

The following are the largest scale Electronic Navigational Charts (ENCs) that cover the survey area (Table 2):

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US3DE01M	1:419,706	21	12/01/2017	04/26/2018	NO

Table 2: Largest scale ENCs within the survey area

A chart comparison was conducted using survey-scale soundings. The surveyed soundings are consistent with charted depths (Figure 4).

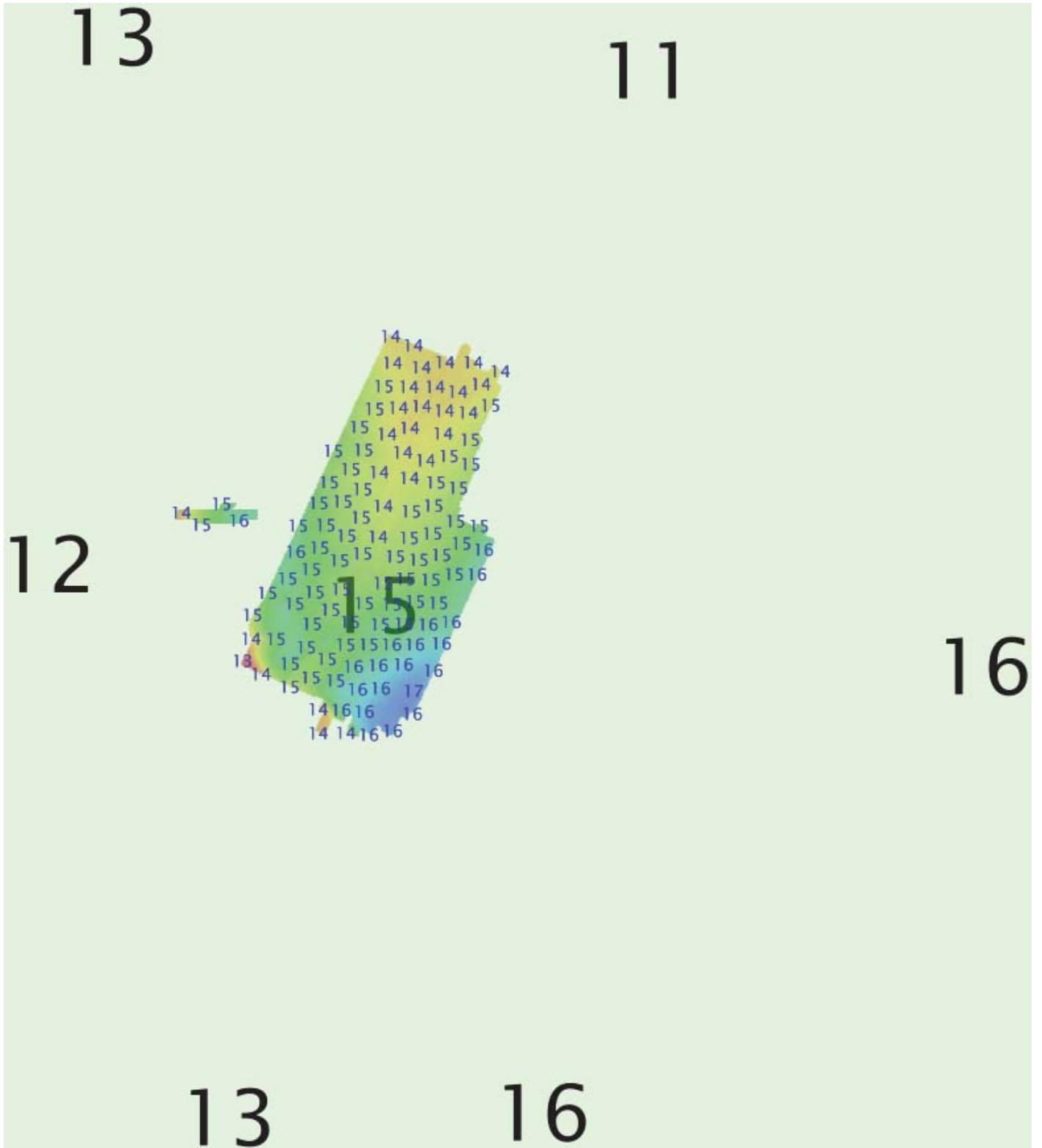


Figure 4: Surveyed soundings (blue) are consistent with charted depths on the largest scale ENC (US3DE01M)

The following surfaces and/or BAGs were submitted to the Hydrographic Branch (Table 3):

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
F00720_MB_1m_MLLW	CUBE	1.000 m	24.124 m - 32.292 m	NOAA_1m	MB Object Detection Surface
F00720_MB_1m_MLLW_Final	CUBE	1.000 m	24.124 m - 32.292 m	NOAA_1m	Finalized MB Object Detection Surface
F00720_MBAB_1m_S222_70kHz_1of2	Floating Point GeoTIFF	1.000 m	-	EM710 at 70kHz	MB Acoustic Backscatter Mosaic
F00720_MBAB_1m_S222_300kHz_2of2	Floating Point GeoTIFF	1.000 m	-	EM2040 at 300kHz	MB Acoustic Backscatter Mosaic

Table 3: Surfaces and mosaics included in the survey deliverables

G. Vertical and Horizontal Control

The vertical datum for this project is Mean Lower Low Water.

The vertical control method used for this survey was VDatum.

Refer to the DAPR for a complete description of vertical control procedures.

The horizontal datum for this project is World Geodetic System (WGS) 1984. The projection used for this survey is UTM Zone 18 North.

Refer to the DAPR for a complete description of horizontal control procedures.

H. Additional Results

Object detection multibeam was acquired over the 61 assigned side scan targets with an additional buffer of approximately 300 meters. No significant features were detected along the margins of the survey area, so it was not necessary to expand the search radius. The survey confirmed the presence of 28 intact shipping containers on the seafloor. The data also revealed approximately 400 smaller objects that appear to be broken container fragments and debris. All the containers and debris are embedded within deep scours, thereby limiting their prominence to less than ~1.5 meters above the surrounding seafloor (Figures 5 - 7). None of the objects are navigationally significant at the depth range of the survey area (24 - 32 meters), nor do they affect charted depths.

This survey was compared to prior surveys H12840 and H12841, which were acquired in 2015 by the NOAA Ship *Ferdinand R. Hassler* (OPR-D304-FH-15). The objects and associated scours were not present in the 2015 survey data. Junction analysis showed only minor differences between survey depths (Figures 8 and 9).

Before survey F00720 commenced, an obstruction area encompassing the side scan contacts was submitted as a Danger to Navigation (DTON) on 04/19/2018. This obstruction area has been applied to the current edition of the ENC (US3DE01M). After review of the object detection multibeam data from survey F00720, it is clear the shipping containers are not navigationally significant. In response, an Anti-DTON report was submitted to Nautical Data Branch (NDB) on 05/07/2018 recommending the removal of the obstruction area from the affected charts. No additional chart updates are recommended. Refer to Appendix II for DTON correspondence.

Multibeam acoustic backscatter data was acquired and processed as described in the DAPR. The raw multibeam acoustic backscatter files (.all), processed GSF files, and floating point geoTIFF mosaics are included in the survey deliverables. Where possible, crosslines were excluded from the mosaics. Two separate mosaics were created for each sensor and frequency (DR Section F). Both mosaics exhibit unusual linear artifacts that are not associated with crosslines, depth changes, or sediment transitions (Figure 10). Information regarding these artifacts was forwarded to the Mid-Atlantic Navigation Manager and the Hydrographic Systems Technology Branch. Refer to Appendix II for relevant correspondence.

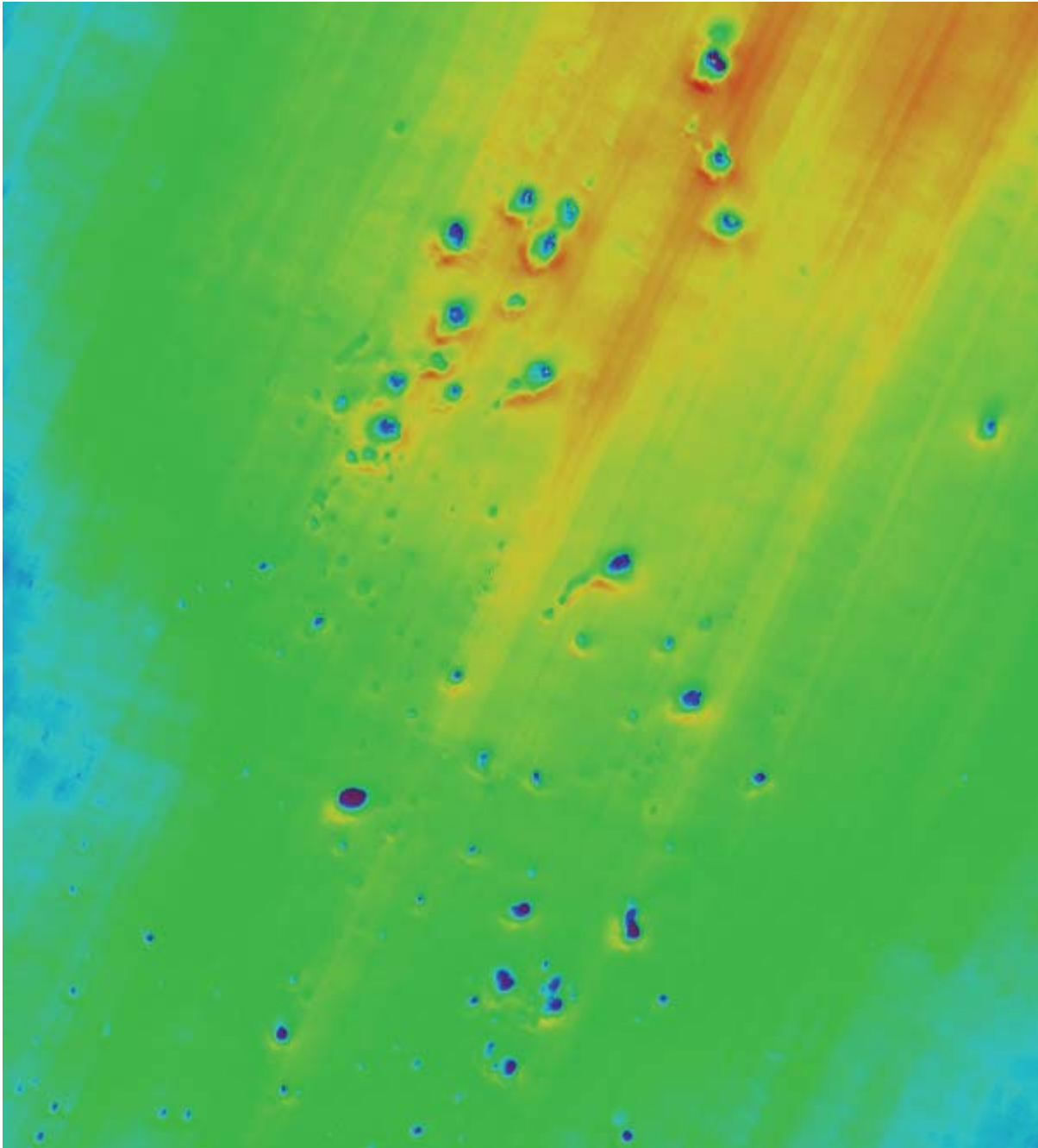


Figure 5: Example of scours associated with submerged shipping containers and debris in the vicinity of 36-27-14.25N, 075-24-25.89W

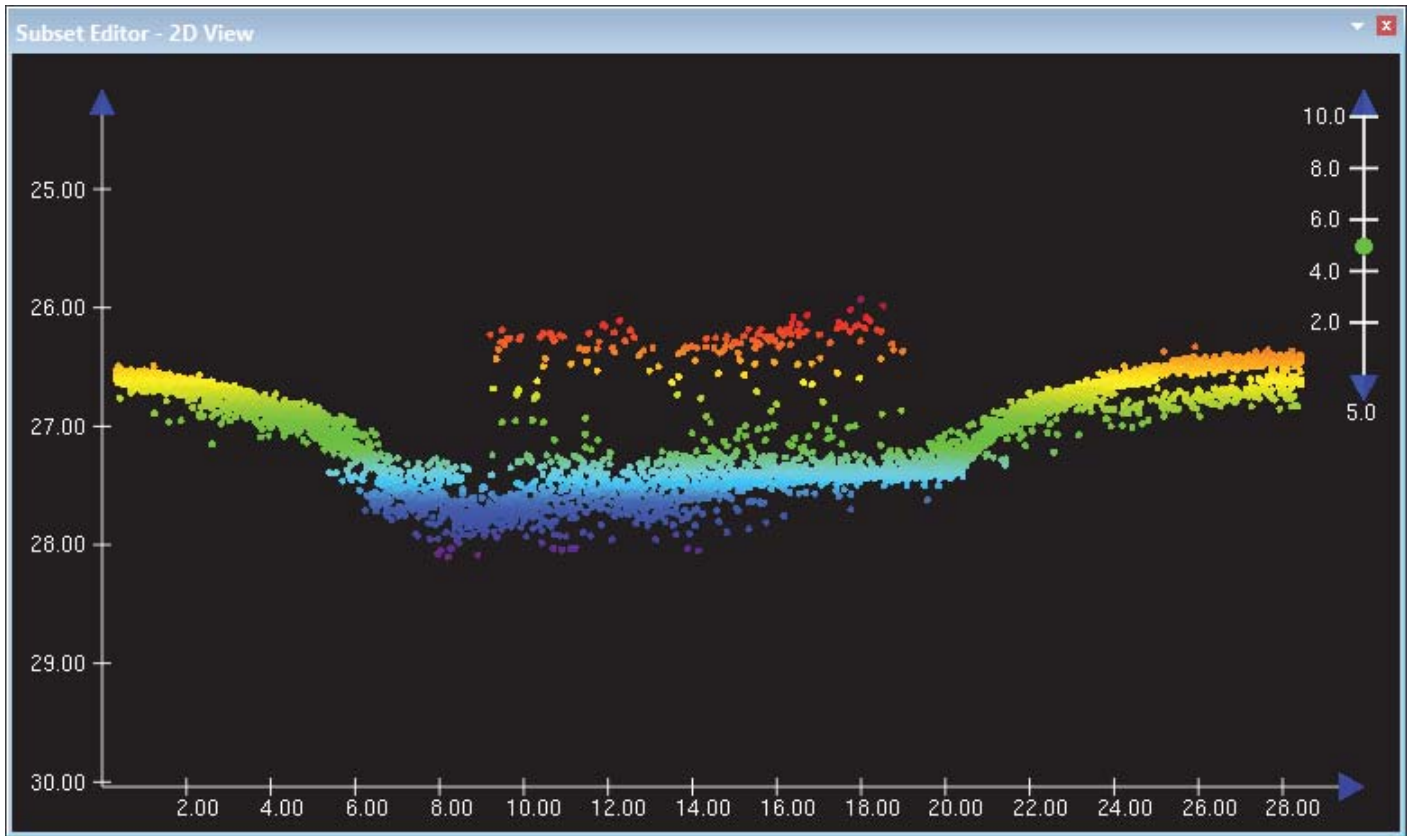


Figure 6: Example of intact shipping container embedded within deep scour at 36-27-25.58N, 075-24-19.79W

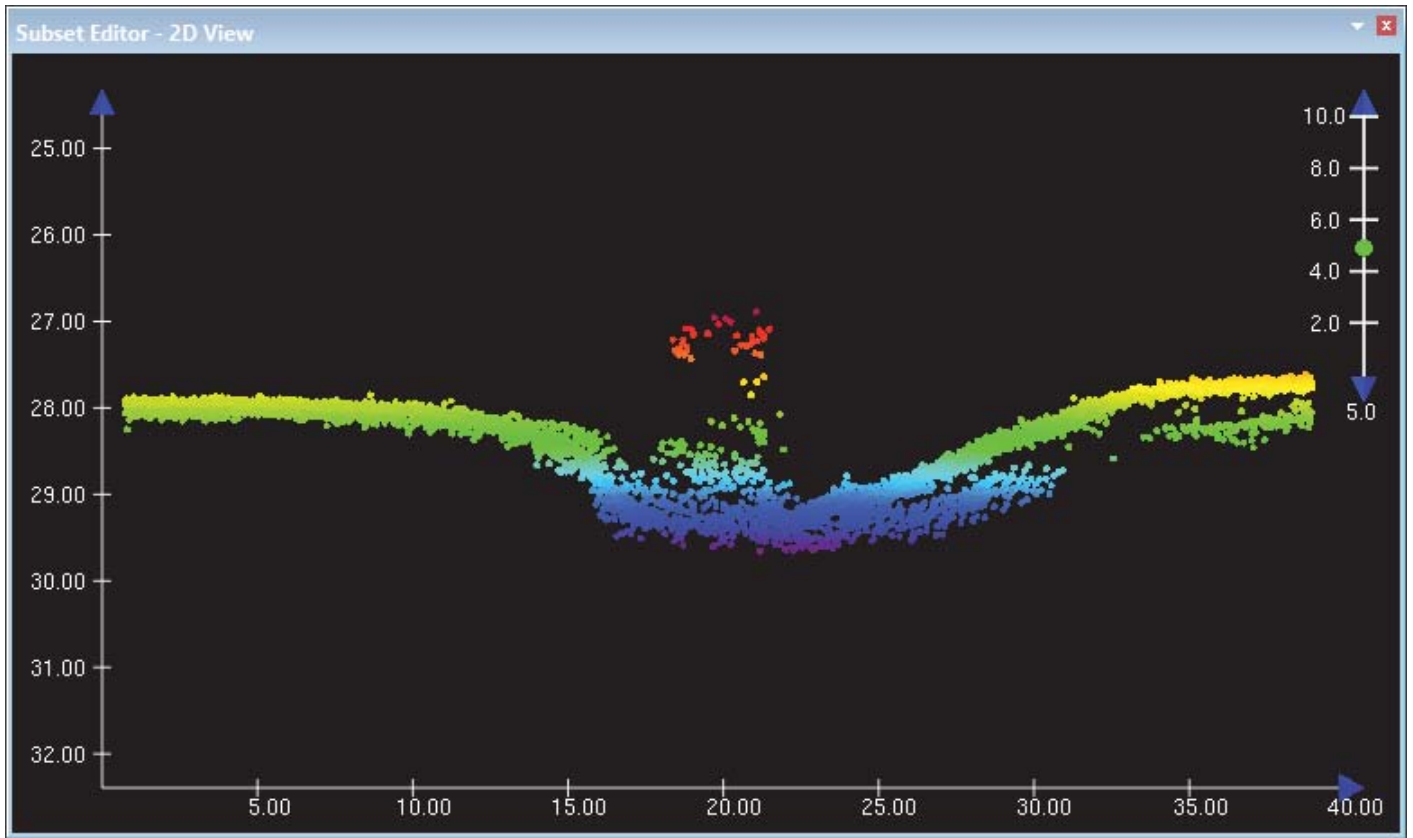


Figure 7: Example of shipping container fragment or debris embedded within deep scour at 36-26-25.73N, 075-24-36.64W

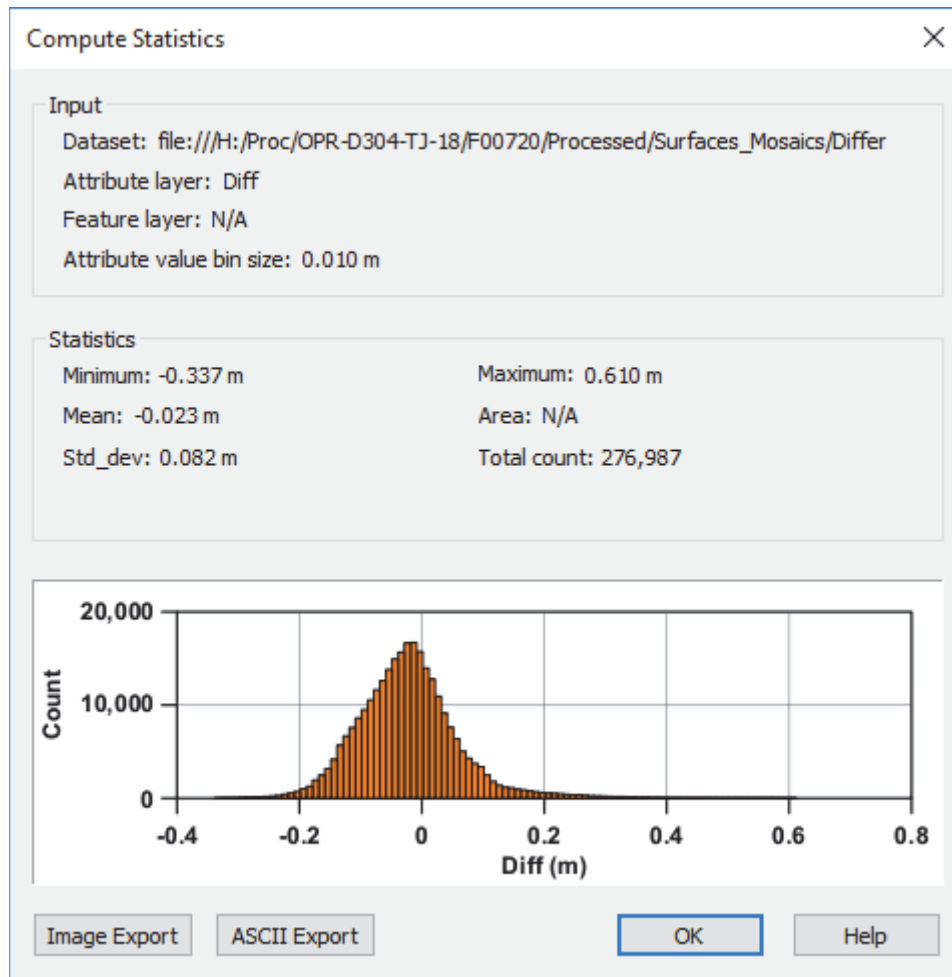


Figure 8: Junction comparison between surveys F00720 and H12840

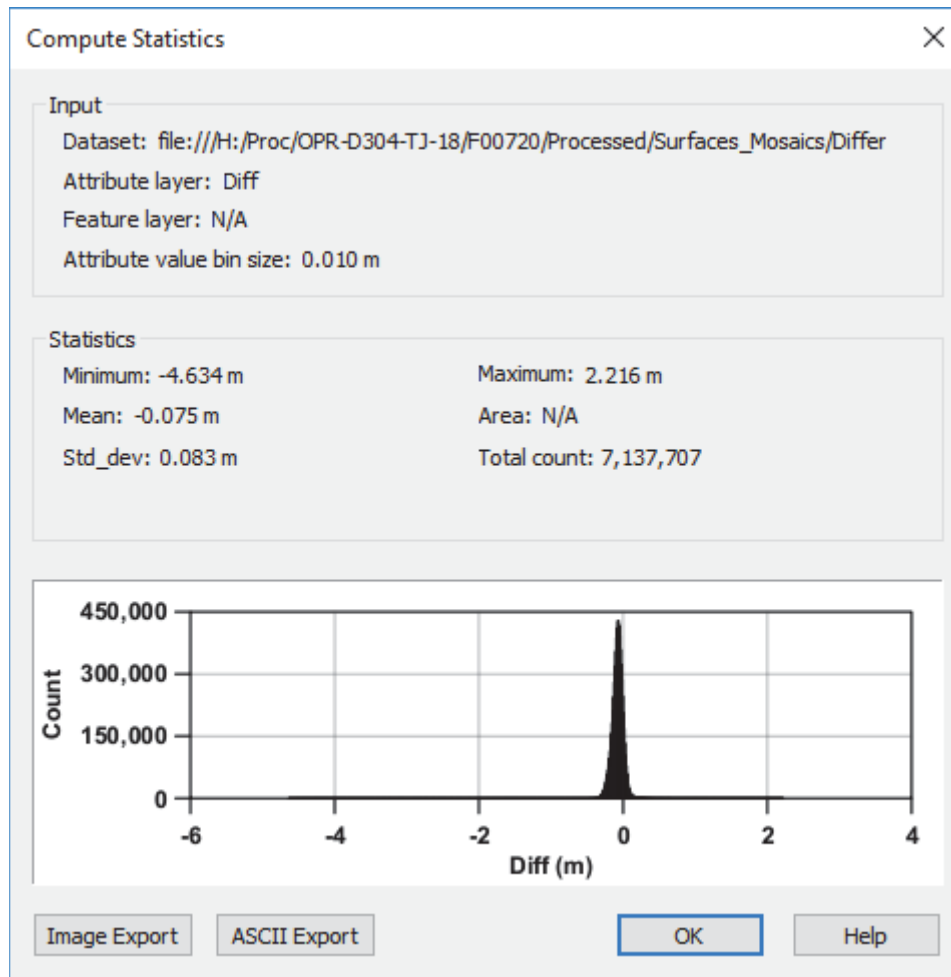


Figure 9: Junction comparison between surveys F00720 and H12841

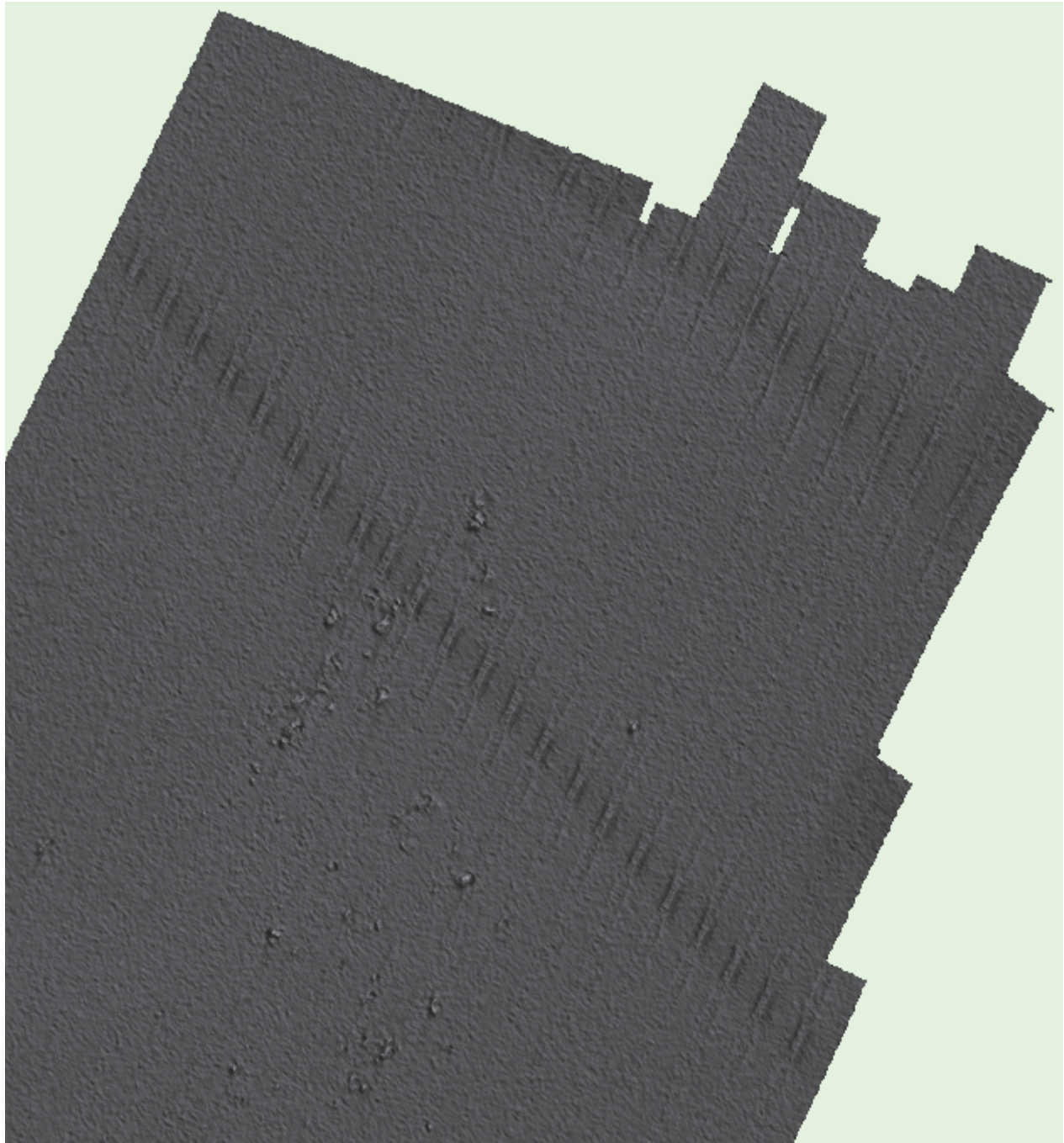


Figure 10: Both multibeam acoustic backscatter mosaics (EM710 and EM2040) exhibit a pair of linear artifacts trending diagonally northwest-southeast. The artifacts are not associated with crosslines, depth changes, or sediment transitions.




I. Approval

As Chief of Party, field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

This report and all accompanying records and data are approved. All records are forwarded to the Hydrographic Branch for archival at the National Centers for Environmental Information (NCEI).

The survey meets or exceeds requirements as set forth in the Hydrographic Surveys Specifications and Deliverables, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. This survey is complete and no additional work is required.

The survey is adequate to supersede previous data. However, depths in the area have not changed, and the shipping containers and associated debris are not navigationally significant. It is recommended to archive this survey without applying chart updates.

Approver Name	Title	Date	Signature
CDR Christiaan van Westendorp, NOAA	Chief of Party	05/17/2018	 VAN WESTENDORP.CHRISTIAAN.HENRY.1012828175 c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=VAN WESTENDORP.CHRISTIAAN.HENRY.1012828175 2018.05.30 18:03:28 -05'00'
LT Anthony Klemm, NOAA	Field Operations Officer	05/17/2018	 Digitally signed by KLEMM.ANTHONY.ROSS.1392701601 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=KLEMM.ANTHONY.ROSS.1392701601 Date: 2018.05.30 17:54:59 -05'00'
James Miller	Sheet Manager	05/17/2018	 MILLER.JAMES.JEFFREY.II.1 399283295 2018.05.30 08:40:41 -04'00'

APPENDIX I
TIDES AND WATER LEVELS

This page is left intentionally blank. No tide and water level information provided by the field.

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS
AND CORRESPONDENCE



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations
NOAA Ship *Thomas Jefferson* (S222)
439 West York St, Norfolk, VA 23510

3/29/2018

MEMORANDUM FOR: Corey Allen
Acting Chief, Operations Branch
Hydrographic Surveys Division

FROM: Commander Christiaan van Westendorp, NOAA
Commanding Officer, NOAA Ship *Thomas Jefferson*

SUBJECT: Waiver request – WGS84 Datum, CY2018 Projects

VAN
WESTENDORP.CHRISTIAAN.HENRY.1012828175
c=US, ou=U.S. Government, ou=DoD, ou=PKI,
ou=NOAA, cn=VAN
WESTENDORP.CHRISTIAAN.HENRY.1012828175
2018.03.30 09:57:32 -0400'

Thomas Jefferson requests a waiver of the HSSD 2017 and HSSD 2018 Section 2.2 Horizontal Datum requirement to acquire and submit survey data in WGS84 rather than NAD83 for all projects in calendar year 2018.

Justification

Retaining the current procedure and configurations will reduce the possibility of errors.

Decision

Waiver is: _____
Granted

_____ Denied

cc: OPS, *Thomas Jefferson*
HCST, *Thomas Jefferson*





F00720 Summary (OPR-D304-TJ-18)

Douglas Wood - NOAA Federal <douglas.wood@noaa.gov>

Fri, May 4, 2018 at 6:39 PM

To: "James J. Miller" <james.j.miller@noaa.gov>

Cc: Ryan Wartick <ryan.wartick@noaa.gov>, Corey Allen <corey.allen@noaa.gov>, _OMAO MOA CO Thomas Jefferson <co.thomas.jefferson@noaa.gov>, _OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, _OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>, Briana Hillstrom - NOAA Federal <Briana.Hillstrom@noaa.gov>, Jacklyn James - NOAA Federal <jacklyn.c.james@noaa.gov>

Hi James,

concur, and thank you and and thank the crew of the *TJ*. To me this looks like a great start to the season's acquisition!

Doug

On Fri, May 4, 2018 at 5:19 PM, James J. Miller <james.j.miller@noaa.gov> wrote:

Doug and Ryan,

Survey F00720 was a success. The TJ acquired object detection multibeam coverage over all 61 side scan targets. The side scan contacts are positively correlated with objects in the multibeam data. No features were detected along the margins of the planned survey limits, so it was not necessary to expand the search area.

The multibeam data confirms the presence of 28 intact containers. None of the containers are standing vertically on end. The data also revealed approximately 400 smaller objects that appear to be broken container fragments and debris. All the containers and debris are embedded within deep scours, thereby limiting their prominence to less than ~1.5 meters above the surrounding seafloor. None of the objects are navigationally significant at the depth range of the area (24 - 32 meters).

The data was compared to prior FH surveys H12840 and H12841 (OPR-D304-FH-15). The containers, debris, and associated scours were not present in the 2015 survey data. Junction analysis showed only minor differences between survey depths from 2015 (mean difference of 0.075 meters with a standard deviation of 0.083 meters).

Depths in the area have not significantly changed, and the containers and debris are not navigationally significant. It is recommended to proceed as follows:

- TJ submits the survey to AHB according to the Project Instructions
- TJ submits Anti-DTON report to remove the obstruction area DTON that was submitted to NDB on 04/19/2018 (DD-29449)
- AHB does not conduct RSA, SAR, or HCell compilation (no chart updates)
- AHB submits the survey to NCEI for archival

We are preparing the survey data and reports for submission to AHB. It is anticipated the survey will be ready for final submission by the end of the leg (May 17).

Respectfully,
James

James J. Miller
Physical Scientist
NOAA Office of Coast Survey
Atlantic Hydrographic Branch
[439 W York St | Norfolk, VA | 23510](#)
[757-364-7465](#)



DTON Report - Maersk Shipping Containers

OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Tue, Apr 24, 2018 at 10:10 AM

To: "James J. Miller" <james.j.miller@noaa.gov>

Cc: Tara Wallace - NOAA Federal <tara.wallace@noaa.gov>, Ryan Wartick <ryan.wartick@noaa.gov>, Corey Allen <corey.allen@noaa.gov>, Briana Hillstrom - NOAA Federal <Briana.Hillstrom@noaa.gov>, Castle Parker <castle.e.parker@noaa.gov>, _NOS OCS PBA Branch <ocs.pba@noaa.gov>, _NOS OCS PBB Branch <ocs.pbb@noaa.gov>, _NOS OCS PBC Branch <ocs.pbc@noaa.gov>, _NOS OCS PBD Branch <ocs.pbd@noaa.gov>, _NOS OCS PBE Branch <ocs.pbe@noaa.gov>, _NOS OCS PBG Branch <ocs.pbg@noaa.gov>, Charles Porter - NOAA Federal <charles.porter@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, Ken Forster <Ken.Forster@noaa.gov>, Kevin Jett - NOAA Federal <kevin.jett@noaa.gov>, Matt Kroll <Matt.Kroll@noaa.gov>, Michael Gaeta <Michael.Gaeta@noaa.gov>, Nautical Data Branch <OCS.NDB@noaa.gov>, NSD Coast Pilot <coast.pilot@noaa.gov>, PHB Chief <PHB.Chief@noaa.gov>, Chris Libeau <Chris.Libeau@noaa.gov>

DD-29449 has been registered by the Nautical Data Branch and directed to Product Branches C and E for processing.

The DtoN reported is an uncharted obstruction area (submerged shipping containers from vessel Maersk Shanghai) located approximately 20 NM east of Currituck Beach, NC in the North Atlantic Ocean.

The following charts are affected:

12200 kapp 526
13003 kapp 2156

The following ENC's are affected:

US3DE01M
US2EC03M

Reference:

H12841

This information was discovered by Maersk and was submitted by AHB.

Nautical Data Branch/Marine Chart Division/
Office of Coast Survey/National Ocean Service/

Contact: ocs.ndb@noaa.gov



On Thu, Apr 19, 2018 at 5:08 PM, James J. Miller <james.j.miller@noaa.gov> wrote:

Good day,

On 03/04/2018 the vessel Maersk Shanghai lost multiple shipping containers overboard during a storm. The submerged shipping containers were located by a side scan survey 03/14/2018 - 03/16/2018. The side scan contact report (PDF) was provided to NDB and registered in DREG sometime around 03/27/2018, but MCD charting action was put on hold so that HSD could conduct further analysis (email correspondence attached)

After reviewing the side scan and comparing to recent multibeam data from the Ferdinand Hassler, HSD prepared the attached DTON Report. The report recommends charting an obstruction area that encompasses the submerged shipping containers.

If you have any questions, please contact me via email or phone 757-364-7465. Thank you for your assistance with this matter.

Respectfully,
James

James J. Miller
Physical Scientist

NOAA Office of Coast Survey
Atlantic Hydrographic Branch
439 W York St | Norfolk, VA | 23510
757-364-7465

2 attachments



Maersk_DTON_Report.zip
452K



Maersk Email Correspondence.pdf
156K



James Miller - NOAA Federal <james.j.miller@noaa.gov>

F00720 Survey Outline

James J. Miller <james.j.miller@noaa.gov>

Sat, May 5, 2018 at 12:32 PM

To: _NOS OCS Survey Outlines <survey.outlines@noaa.gov>

Cc: _OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, _OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>, Douglas Wood - NOAA Federal <douglas.wood@noaa.gov>, Jacklyn James - NOAA Federal <jacklyn.c.james@noaa.gov>, Ryan Wartick <ryan.wartick@noaa.gov>

Good day,

Please find attached the survey outline for F00720.

James J. Miller
Physical Scientist
NOAA Office of Coast Survey
Atlantic Hydrographic Branch
439 W York St | Norfolk, VA | 23510
757-364-7465

 **F00720_Survey_Outline.000**
152K



Anti-DTON F00720 OPR-D304-TJ-18

OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>

Wed, May 9, 2018 at 3:00 PM

To: Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

Cc: James Miller <james.j.miller@noaa.gov>, Douglas Wood <douglas.wood@noaa.gov>, Briana Welton - NOAA Federal <Briana.Hillstrom@noaa.gov>, Corey personal cell Allen <corey.allen@noaa.gov>, Ryan Wartick - NOAA Federal <ryan.wartick@noaa.gov>, _OMAO MOA CO Thomas Jefferson <co.thomas.jefferson@noaa.gov>, _OMAO MOA OPS Thomas Jefferson <ops.thomas.jefferson@noaa.gov>, _NOS OCS PBA Branch <ocs.pba@noaa.gov>, _NOS OCS PBB Branch <ocs.pbb@noaa.gov>, _NOS OCS PBC Branch <ocs.pbc@noaa.gov>, _NOS OCS PBD Branch <ocs.pbd@noaa.gov>, _NOS OCS PBE Branch <ocs.pbe@noaa.gov>, _NOS OCS PBG Branch <ocs.pbg@noaa.gov>, Castle E Parker <Castle.E.Parker@noaa.gov>, Charles Porter - NOAA Federal <charles.porter@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, Ken Forster <Ken.Forster@noaa.gov>, Kevin Jett - NOAA Federal <kevin.jett@noaa.gov>, Matt Kroll <Matt.Kroll@noaa.gov>, Michael Gaeta <Michael.Gaeta@noaa.gov>, Nautical Data Branch <OCS.NDB@noaa.gov>, NSD Coast Pilot <coast.pilot@noaa.gov>, PHB Chief <PHB.Chief@noaa.gov>, Tara Wallace <Tara.Wallace@noaa.gov>, Chris Libeau <Chris.Libeau@noaa.gov>

DD-29486 has been registered by the Nautical Data Branch and directed to Product Branches C and E for processing.

The Anti-Dton reported is the disapproval of a charted obstruction area (submerged shipping containers), located approximately 18 NM offshore of Currituck Beach, NC in the North Atlantic Ocean.

The following charts are affected:

12200 kapp 526
13003 kapp 2156

The following ENC's are affected:

US3DE01M
US2EC03M

References:

F00720
OPR-D304-TJ-18

This information was discovered and submitted by the crew of the NOAA Ship *Thomas Jefferson*.

Nautical Data Branch/Marine Chart Division/
Office of Coast Survey/National Ocean Service/
Contact: ocs.ndb@noaa.gov



On Tue, May 8, 2018 at 3:03 PM, Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov> wrote:

Good afternoon,

Attached is the Anti-DTON Report for F00720 (Container Search).

Please let me know if you have any questions.

Best regards,

LT Anthony Klemm, NOAA
Field Operations Officer
NOAA Ship *Thomas Jefferson*
439 W York Street
Norfolk, VA 23510
757-647-0187

Learn about NOAA nautical charts - www.nauticalcharts.noaa.gov



F00720_Anti_DTON.zip

78K



James Miller - NOAA Federal <james.j.miller@noaa.gov>

NOAA Office of Coast Survey Profile Data accession 0173327 published

NCEI archive manager <archivist@nodc.noaa.gov>
To: NODC.submissions@noaa.gov, james.j.miller@noaa.gov
Cc: John.Relph@noaa.gov

Fri, May 18, 2018 at 8:05 AM

NCEI has archived and published the following NOAA Office of Coast Survey Profile data set:

Oceanographic profile data collected from sound velocimeter - moving vessel profiler casts aboard THOMAS JEFFERSON as part of project OPR-D304-TJ-18 in the North Atlantic Ocean on 2018-05-01 (NODC Accession 0173327)

You can find your new data set and associated metadata at
<https://accession.nodc.noaa.gov/0173327>



James Miller - NOAA Federal <james.j.miller@noaa.gov>

OPR-D304-TJ-18 NODC Submission

1 message

James J. Miller <james.j.miller@noaa.gov>

Mon, May 14, 2018 at 6:50 PM

To: _NODC Submissions <nodc.submissions@noaa.gov>


Cc: Douglas Wood - NOAA Federal <douglas.wood@noaa.gov>, Erin Weller - NOAA Federal <erin.weller@noaa.gov>, _OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>, _OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>

Good day,

Attached is the NODC submission for project OPR-D304-TJ-18. These files have been prepared and submitted in accordance with 2018 HSSD Section 8.3.6.

Respectfully,
James

James J. Miller
Physical Scientist
NOAA Office of Coast Survey
Atlantic Hydrographic Branch
439 W York St | Norfolk, VA | 23510
757-364-7465

 **OPR-D304-TJ-18_20180514.zip**
47K



James Miller - NOAA Federal <james.j.miller@noaa.gov>

Thomas Jefferson Marine Mammal Reports 30 Apr - 17 May 2018

Jacquelyn Putnam - NOAA Federal <jacquelyn.putnam@noaa.gov>

Thu, May 17, 2018 at 12:16 PM

To: _NOS OCS ECC <ocs.ecc@noaa.gov>, Douglas Wood - NOAA Federal <douglas.wood@noaa.gov>, _NMFS AFSC NMML POP INFORMATION <pop.information@noaa.gov>

Cc: Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>, James Miller - NOAA Federal <james.j.miller@noaa.gov>

Good Afternoon,

Attached are marine mammal sighting reports from NOAAS *Thomas Jefferson*. These reports cover sightings during our first leg of Approaches to Galveston (30 April - 17 May).

Thank you in advance,

**ENS Jacquelyn Putnam, NOAA
Junior Officer, NOAA Ship *Thomas Jefferson***










Ship Land Line: 757-441-6322

Ship Cell: 757-647-0187

Ship Iridium: 808-434-2706

Jacquelyn.Putnam@noaa.gov

9 attachments

-  Thomas Jefferson_20180430204001_MARINE_MAMMAL.txt
1K
-  Thomas Jefferson_20180501195840_MARINE_MAMMAL.txt
1K
-  Thomas Jefferson_20180503215717_MARINE_MAMMAL.txt
2K
-  Thomas Jefferson_20180507143116_MARINE_MAMMAL.txt
1K
-  Thomas Jefferson_20180508201956_MARINE_MAMMAL.txt
2K
-  Thomas Jefferson_20180512190725_MARINE_MAMMAL.txt
1K
-  Thomas Jefferson_20180512190735_MARINE_MAMMAL.txt
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-  Thomas Jefferson_20180514164218_MARINE_MAMMAL.txt
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-  Thomas Jefferson_20180514164231_MARINE_MAMMAL.txt
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APPROVAL PAGE

F00720

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
- Data Acquisition and Processing Report
- Single resolution bathymetric grid (BAG)
- Processed survey data and records
- GeoPDF of survey products
- Collection of Backscatter mosaics

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.

Approved: _____

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