

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. David Evans and Associates, Inc.
Registry No. H12467

LOCALITY

State Mississippi
General Locality Approaches to Mississippi Sound
Sub-locality 9nm S of Dauphin Island

2012

CHIEF OF PARTY

Jonathan L. Dasler, David Evans and Associates, Inc.

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NOAA Form 77-28 (11 72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET		H12467
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:	Mississippi	
General Locality:	Approaches to Mississippi Sound	
Sub-Locality:	9nm S of Dauphin Island	
Scale:	1:40,000	
Date of Survey:	June 27, 2012 to October 4, 2012	
Instructions Dated:	April 16, 2012	
Project Number:	OPR-J348-KR-12	
Field Unit:	R/V <i>Westerly</i>	
Chief of Party:	Jonathan L. Dasler, PE, PLS, CH	
Soundings by:	RESON 7125	
Imagery by:	EdgeTech 4200-FS	
Verification by:	Atlantic Hydrographic Branch	
Soundings Acquired in:	meters at Mean lower low water	
Remarks:	<p><i>NAD 83, UTM Zone 16, Meters, Times are UTC. The purpose of this contract is to provide NOAA with modern, accurate hydrographic survey data with which to update nautical charts of the assigned area.</i></p>	

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 Geophysical Data Center (NGDC) and can be retrieved via <http://www.ngdc.noaa.gov/>.

TABLE OF CONTENTS

A. AREA SURVEYED.....	1
A.1 Survey Limits	1
A.2 Survey Purpose.....	1
A.3 Survey Quality.....	1
A.4 Survey Coverage	1
A.5 Survey Statistics	3
A.6 Shoreline.....	3
A.7 Bottom Samples	3
B. DATA ACQUISITION AND PROCESSING.....	4
B.1 Equipment and Vessels.....	4
B.1.1 Vessels	4
B.1.2 Equipment	5
B.2 Quality Control.....	5
B.2.1 Crosslines.....	5
B.2.2 Uncertainty.....	6
B.2.3 Junctions	7
B.2.4 Sonar QC Checks	8
B.2.5 Equipment Effectiveness.....	8
B.2.6 Factors Affecting Soundings.....	9
B.2.7 Sound Speed Methods.....	9
B.2.8 Coverage Equipment and Methods	9
B.2.9 Density	9
B.3 Echo Sounding Corrections	10
B.3.1 Corrections to Echo Soundings.....	10
B.3.2 Calibrations	10
B.4 Backscatter	10
B.5 Data Processing	10
B.5.1 Software Updates	10
B.5.2 Surfaces.....	10
C. VERTICAL AND HORIZONTAL CONTROL	11
C.1 Vertical Control	11
C.2 Horizontal Control.....	11
D. RESULTS AND RECOMMENDATIONS.....	12
D.1 Chart Comparison.....	12
D.1.1 Raster Charts.....	12
D.1.2 Electronic Navigational Charts	16
D.1.3 AWOIS Items.....	19
D.1.4 Charted Features	19
D.1.5 Uncharted Features	19

D.1.6 Dangers to Navigation	19
D.1.7 Shoal and Hazardous Features	19
D.1.8 Channels.....	19
D.2 Additional Results	19
D.2.1 Shoreline	19
D.2.2 Prior Surveys.....	20
D.2.3 Aids to Navigation	20
D.2.4 Overhead Features	20
D.2.5 Submarine Features.....	20
D.2.6 Ferry Routes and Terminals	20
D.2.7 Platforms	20
D.2.8 Significant Features.....	21
D.2.9 Construction and Dredging	21
E. APPROVAL SHEET.....	21
F. TABLE OF ACRONYMS.....	23

List of Figures

Figure 1. H12467 Survey Outline.....	2
Figure 2. Sediment Migration Pre (Blue) and Post (Purple & Salmon) Hurricane Isaac	6
Figure 3. Sounding Discrepancies between 11373 and US4MS12M.....	13
Figure 4. Sounding Discrepancies between 11376 and US4AL11M	14
Figure 5. Sounding Discrepancies between 11360 and US3CG05M.....	15
Figure 6. Depth Difference between H12467 and chart US4AL11M US4MS12M.....	17
Figure 7. Depth Difference between H12467 and charts US3GC04M and US3GC05M.....	18
Figure 8. Full Water Column Investigation on CALLON-102-11.....	21

List of Tables

Table 1. Survey Limits.....	1
Table 2. H12467 Hydrographic Survey Statistics.....	3
Table 3. H12467 Days of Acquisition.....	3
Table 4. Vessel Specifications	4
Table 5. Equipment Used.....	5
Table 6. TPU Values for Tide and Sound Speed.....	6
Table 7. CUBE Uncertainty	7
Table 8. H12467 Junction Surveys	7
Table 9. H12467 Junction Analysis Results.....	8
Table 10. H12467 Multibeam Surfaces.....	10
Table 11. H12467 Side Scan Mosaics.....	11
Table 12. Tide Stations	11
Table 13. HIPS Water Level Files.....	11
Table 14. HIPS Zoning Files	11
Table 15. RNCs Compared to H12467	12
Table 16. ENC's Compared to H12467.....	16

Descriptive Report to Accompany Hydrographic Survey H12467

Project OPR-J348-KR-12

Locality: Approaches to Mississippi Sound, Mississippi

Sub-locality: 9nm S of Dauphin Island

Scale 1:40,000

June 2012 – October 2012

David Evans and Associates, Inc.

Chief of Party: Jonathan L. Dasler, PE, PLS, CH

A. AREA SURVEYED

David Evans and Associates, Inc (DEA) conducted hydrographic survey operations in the Approaches to Mississippi Sound, MS, 9nm S of Dauphin Island. Survey H12467 was conducted in accordance with the *Statement of Work* (April 2, 2012) and *Hydrographic Survey Project Instructions* (April 16, 2012) for OPR-J348-KR-12.

A.1 Survey Limits

The extents of the H12467 survey limits are listed in Table 1.

Table 1. Survey Limits

Northeast Limit	Southwest Limit
30.108266 N	30.008282 N
88.156917 W	88.328235 W

A.2 Survey Purpose

The purpose of this survey is to provide National Oceanic Atmospheric Administration (NOAA) with modern, accurate hydrographic survey data with which to update nautical charts of the assigned area.

A.3 Survey Quality

The entire survey is adequate to supersede previous surveys.

A.4 Survey Coverage

The survey consisted of 200% side scan sonar coverage with concurrent multibeam. The survey polygon depicted in the Project Reference File (PRF) *OPR-J348-KR-12_PRF.000*, which was included with the *Hydrographic Survey Project Instructions* (April 16, 2012), was used to define the limits for each survey. The survey was conducted over 180-meter set line spacing per 100% coverage (100-meter side scan sonar range). Automated Wreck and Obstruction Information System (AWOIS) items and significant side scan contact investigations were acquired to meet object detection coverage requirements for multibeam surveys. The coverage area (Figure 1) totaled 29.8 square nautical miles using a combination of side scan and multibeam survey methods.

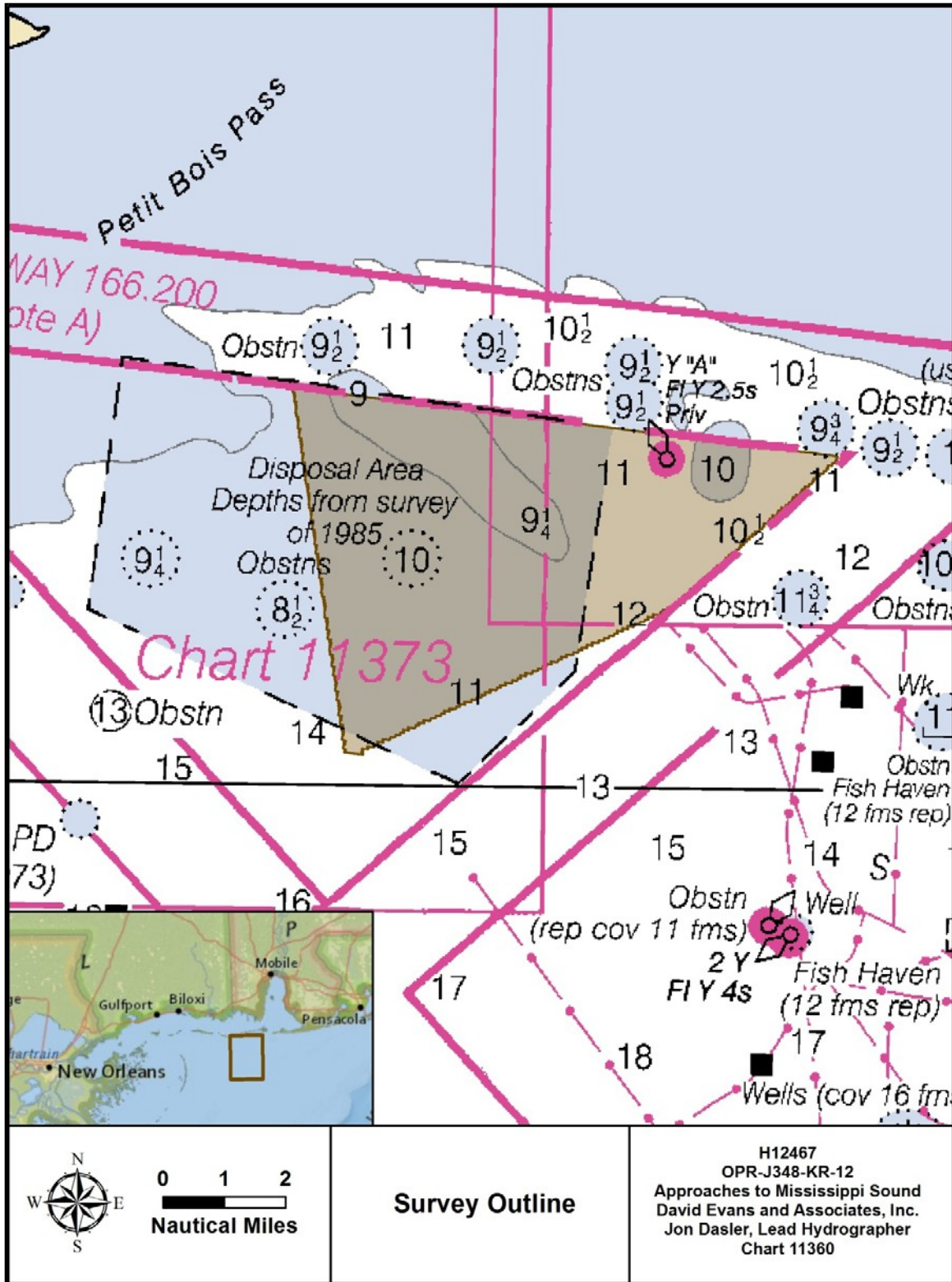


Figure 1. H12467 Survey Outline

A.5 Survey Statistics

Detailed survey statistics for H12467 are provided in Table 2.

Table 2. H12467 Hydrographic Survey Statistics

Survey Statistics	Combination MBES/SSS Mainscheme
MBES/SSS main scheme (nm)	620.0
Crosslines (MBES nm)	54.5
Additional full coverage MBES (nm)	0
Additional full coverage MBES crosslines (nm)	0
Number of item investigations that required additional survey effort	0
Number of bottom samples	4
Total number of square nautical miles	29.8

Data acquisition was conducted from June 27, 2012 (DN 179) to October 4, 2012 (DN 278). Table 3 lists specific dates of survey and patch test data acquisition. Patch test data used to determine system biases in support of the survey are also included with the digital deliverable. Survey data was not collected on patch test days unless also listed under dates of acquisition.

Table 3. H12467 Days of Acquisition

Dates of Acquisition	
June	27-30
July	1-12, 24
August	3-5
September	6
October	3-4
Dates of Patch Test Acquisition	
May	23
July	2, 16
August	16
September	29

A.6 Shoreline

Shoreline investigation was not required for OPR-J348-KR-12.

A.7 Bottom Samples

Four (4) bottom samples were acquired on July 24, 2012 (DN 206). Approximate sample locations were included in the file PRF provided by the Hydrographic Surveys Division (HSD). The final sampling plan primarily used the provided locations with some modification of position to better characterize changes in bottom type delineated in the side scan imagery and to avoid sampling in the vicinity of submerged infrastructure such as pipelines or platforms. Results are included in Appendix II *Supplemental Survey Records and Correspondence*.

B. DATA ACQUISITION AND PROCESSING


B.1 Equipment and Vessels

The OPR-J348-KR-12 *Data Acquisition and Processing Report* (DAPR), submitted under separate cover, details equipment and vessel information as well as data acquisition and processing procedures used during this survey. There were no vessel or equipment configurations used during data acquisition that deviated from those described in the DAPR.

B.1.1 Vessels

The vessel used during this survey is listed in Table 4.

Table 4. Vessel Specifications

R/V <i>Westerly</i>	
	
IMO Number	1AR38CATK011
Official Number (O/N)	1231991
Builder	Armstrong Marine
Design	Catamaran
Year Built	2011
Weight	13 gross tons, 10 net tons
Length Overall	38'
Beam	16.5'
Draft, Maximum	4.6'
Cruising Speed	26 knots
Max Survey Speed	9 knots

B.1.2 Equipment

Equipment systems used during data acquisition are listed in Table 5.

Table 5. Equipment Used

Type	Manufacturer	Model
Multibeam Echosounder	RESON	7125-SV2
Side Scan Sonar	Edgetech	4200-FS
Surface Sound Speed	AML	Micro X / SV Xchange
Primary Sound Speed Profiler	Brooke Ocean	MVP-30 with AML Micro SVPT
Secondary Sound Speed Profiler	Sea-Bird	SEACAT SBE-19 CTD Profiler
Positioning & Attitude	Applanix	POS/MV 320 v4

B.2 Quality Control

Survey data show good internal consistency. As shown in Appendix II of the DAPR, the average weekly bar check difference was 0.004 meters with a standard deviation of 0.012 meters. Results from both crossline analysis and final Combined Uncertainty and Bathymetry Estimator (CUBE) surface uncertainty also indicate good internal consistency of the multibeam data.

B.2.1 Crosslines

A total of 54.5 nautical miles of crosslines, or 8.8% of all survey lines, were run for analysis of survey accuracy. Crosslines were run in a direction perpendicular to main scheme lines across the entire surveyed area, providing a good representation for analysis of consistency. All crosslines were used for crossline comparisons.

Crossline analysis was performed using the CARIS Hydrographic Information Processing System (HIPS) Quality Control (QC) Report tool, which compares crossline data to a gridded surface and reports results by beam number. Crosslines were compared to a 2-meter CUBE surface encompassing mainscheme data for the entire survey area. The QC Report tabular output and plot are included in Separate II *Digital Data*. The results of the analysis meet the requirements as stated in the 2012 National Ocean Service (NOS) Hydrographic Surveys Specifications and Deliverables (HSSD).

From August 26, 2012 (DN239) through September 1, 2012 (DN245) Hurricane Isaac impacted the survey area. When comparing mainscheme and crossline data collected before and after the storm, differences in depth of up to 50 centimeters were observed due to sediment migration. These discrepancies are apparent in the minimum and maximum difference statistics in the crossline report, but they do not cause any beams to fall below the required specification. An example of overlap between pre- and post-storm data, as observed in the multibeam data, is shown in Figure 2. Where differences between pre- and post-storm data exist, post-storm data is shallower than pre-storm data.

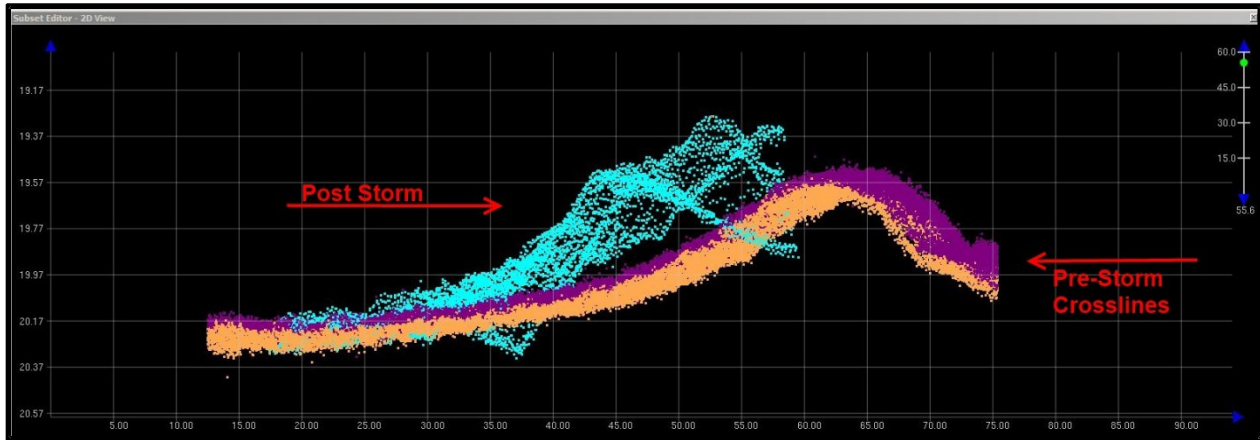


Figure 2. Sediment Migration Pre (Blue) and Post (Purple & Salmon) Hurricane Isaac

Additional crossline analysis was performed by computing a 2-meter CUBE surface from the crossline data. The surface was then differenced from a 2-meter CUBE surface comprised of all mainscheme, fill, and investigation data. The resultant difference surface was exported using the Base Surface to ASCII function and statistics were compiled on the ASCII data. The crossline analysis included 576,498 node comparisons with an average difference of 0.02 meters and standard deviation of 0.05 meters.

B.2.2 Uncertainty

Survey specific uncertainty parameters for tide and sound speed are included in Table 6. Additional discussion of these parameters is included in the DAPR.

Table 6. TPU Values for Tide and Sound Speed

Total Propagated Uncertainty Computation in CARIS HIPS*		
Tide Values	Uncertainty* (m)	Day Number Range
Tide Value Measured	0.000	-
Tide Value Zoning	0.079	-
Sound Speed Values	Uncertainty* (m/s)	
Sound Speed Measured (SN 5510)	2.000	179-183 200-224
Sound Speed Measured (SN 7710)	1.000	184-199 225-278
Surface Sound Speed	0.500	-

*All uncertainty values listed at 1 sigma.

During surface finalization in HIPS, the "greater of the two" option was selected, where the calculated uncertainty from total propagated uncertainty (TPU) is compared to the standard deviation (StdDev) of the soundings influencing the node, and where the greater value is assigned as the final uncertainty of the node. The uncertainty of the finalized surface increased

for nodes where the StdDev of the node was greater than the total propagated uncertainty. The resulting calculated uncertainty values of all nodes in the finalized surfaces range from 0.19 meters to 0.42 meters. The maximum uncertainty value is located over an exposed pipeline with a high standard deviation in the depth surface caused by gridding data over the steeply sloping feature.

To determine if surface grid nodes met International Hydrographic Organization (IHO) Order 1 specification, a ratio of the final node uncertainty to the allowable uncertainty at that depth was determined. As a percentage, this value represents the amount of error budget utilized by the uncertainty value at each node. Values over 100% fail to meet specification.

As shown in Table 7, both uncertainty and the allowable error utilized have low average values and a tight StdDev. There were no nodes within the finalized surfaces that exceeded the allowable error.

Table 7. CUBE Uncertainty

CUBE Finalized Uncertainty Statistics						
	Uncertainty (m)			Allowable error utilized		
	Average	StdDev	Maximum	Average	StdDev	Maximum
2m CUBE	0.20	0.007	0.419	37%	0.013	75%
4m CUBE	0.21	0.009	0.402	36%	0.015	70%

B.2.3 Junctions

Survey H12467 junctions with other surveys from project OPR-J348-KR-12 and with a prior NOAA survey. These junction surveys are listed in Table 8. At the time of writing, junction analysis with OPR-J348-KR-12 survey H12468 had not been completed. Junction analysis with this survey will be discussed in the H12468 Descriptive Report.

Table 8. H12467 Junction Surveys

Junction Survey Registry Number	Scale	Year	Field Unit	Junction Direction
H11547	1:20,000	2006	TerraSond, Ltd.	North, East
H12466	1:40,000	2012	David Evans and Associates, Inc.	South
H12468	1:40,000	2012	David Evans and Associates, Inc.	West

A 2-meter finalized H12467 surface, with no depth thresholds applied, was compared to the prior survey using CARIS Bathymetry DataBASE. This surface was created for quality control purposes and has not been submitted. The resultant difference surfaces were exported to ASCII and statistics compiled for the ASCII data. Statistics of each junction comparison are listed in Table 9.

H11547

Bathymetric Attributed Grids (BAG) for survey H11547 were downloaded from NOAA's National Geophysical Data Center (NGDC) and combined into a single 2-meter surface. A qualitative review of the junction showed no anomalous areas. The maximum difference occurring in the junction comparison with H12467 is located on what appears to be noise or a fish ball in the prior survey data. No feature was present within the H12467 multibeam or side scan data at this location.

H12466

The 2-meter finalized surface from survey H12466 was compared to the H12467 surface using CARIS Bathy DataBase. A qualitative review of the junction showed no anomalous areas in either junction.

Table 9. H12467 Junction Analysis Results

Junction Survey Registry Number	Number of Nodes Compared	Minimum Difference (m)	Maximum Difference (m)	Mean Difference (m)	Standard Deviation (m)
H11547	98447	-0.59	1.14	-0.20	0.07
H12466	238758	-0.19	0.26	0.00	0.06

B.2.4 Sonar QC Checks

Quality control is discussed in detail in Section B of the DAPR. The results from the positioning system comparison and bar-to-multibeam comparison are included in *Separate I Acquisition and Processing Logs*. The sound velocity profile (SVP) sensor weekly evaluation table can be found in *Separate II Sound Speed Data* of this report.

Multibeam data were reviewed at multiple levels of data processing including: CARIS HIPS conversion, subset editing, and analysis of anomalies revealed in CUBE surfaces. Submerged significant features identified during survey operations were noted in the acquisition logs, saved to Isis cursor log files, and then displayed during HIPS editing to act as a check during feature compilation. In addition to the field interpretation of side scan contacts, two independent post-processing reviews of the side scan data were conducted, and all significant contacts or potentially significant contacts tracked in a custom database.

B.2.5 Equipment Effectiveness

On July 24, 2012 (DN206) acquisition of periodic roll test lines resumed after motion artifacts were observed in the multibeam data. Roll artifacts were present when overlap between adjacent lines occurred and periodic heave-like artifacts occurred when the vessel experienced highly dynamic seas. Results from roll test lines collected on and after DN206 were added to the HIPS Vessel File (HVF) while the stability of the mount was assessed. A detailed inspection of the mount and its supports found no breaks or fractures. After the end of survey operations on August 13, 2012 (DN226) it was discovered that the R/V *Westerly's* multibeam mount had developed a failed weld at some point during the day's survey operations. The bottom of the multibeam mount has two aluminum tabs with predrilled holes that allow a multibeam system to

be bolted on to the mount. A weld fracture was discovered on one of the tabs and a hairline crack was discovered on the second tab. This damage to the mount was not visible during previous inspection and was most likely a hairline fracture difficult to detect. The mount was repaired and reinforced on August 14, 2012 (DN227) and a new patch test was run on August 16, 2012 (DN229) prior to continuing survey operations. At this time the alterations to the mount's pitch which were added on May 23, 2012 (DN144) were removed.

In order to remove roll artifacts present in data collected between June 16, 2012 (DN168) and July 23, 2012 (DN205) a daily roll correction was determined by analyzing crossings between mainscheme and crossline data. Roll corrections computed using this method deviated from the previous roll test collected on June 15, 2012 (DN167) with an average difference of 0.13 degrees (0.14-degree standard deviation) and maximum difference of 0.38 degrees.

After the mount was repaired and fully functional, daily roll test lines continued until the end of the project. Roll test results were included in the project vessel file.

B.2.6 Factors Affecting Soundings

No other factors affected the sounding data.

B.2.7 Sound Speed Methods

An ODOM Brooke Ocean Technologies' MVP30 and a SeaBird Electronics SEACAT SBE-19 CTD profiler were the primary instruments used to acquire sound speed readings during multibeam operations. Moving vessel profiler (MVP) sound speed readings were measured at approximately 20-minute intervals during survey operations. Additional discussion of sound speed methods can be found in the OPR-J348-KR-12 DAPR.

B.2.8 Coverage Equipment and Methods

Survey speeds were maintained to meet or exceed along track coverage requirements throughout the survey.

Demonstration of 200% side scan sonar coverage was achieved by producing two separate 100% 50-centimeter resolution mosaics. Mosaics were thoroughly reviewed for holidays and areas of poor quality coverage due to biomass, vessel wakes, or other factors. A fill plan was created in order to acquire data where holidays and significant poor quality coverage existed.

Multibeam data were acquired in conjunction with side scan sonar collection. A fill plan was created for all holidays greater than three nodes long that extended across the entire multibeam track line.

B.2.9 Density

The sounding density requirement of 95% of all nodes, populated with at least three soundings per node, was verified by exporting the density child layer of each CUBE surface to an ASCII text file and compiling statistics on the density values. More than 99.4% of all final CUBE surface nodes contained three or more soundings. Density statistics of individual item investigation surfaces using Object Detection requirements were reviewed and surpassed the 95% requirement.

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

Data reduction procedures for survey H12467 are detailed in the DAPR. Multibeam processing logs are included Separate I *Acquisition and Processing Logs* of this report.

B.3.2 Calibrations

No additional calibration tests were conducted beyond those discussed in the *OPR-J348-KR-12 DAPR*.

B.4 Backscatter

Multibeam backscatter was logged in Hypack 7K format but was not processed or evaluated. This data was included with the H12467 digital deliverables.

B.5 Data Processing

B.5.1 Software Updates

No software updates occurred after submission of the *OPR-J348-KR-12 DAPR*.

B.5.2 Surfaces

Bathymetric grids were created relative to Mean Lower Low Water (MLLW) in CUBE format using set line spacing and object detection resolution requirements as described in the NOS HSSD (April 2012).

Depth thresholds were applied during surface finalization as defined in the NOS HSSD (April 2012).

Table 10 lists the finalized CUBE surfaces submitted with this survey. The surface named “_INV,” is a combined surface comprised of all investigation data at object detection resolution. In addition, field sheets and surfaces were submitted for all significant individual investigations. The name of the investigation field sheets corresponds to the primary side scan sonar contact name. Least depths for all significant contact investigations were added to the final surface with a designated sounding. Additional designated soundings were added to depth surfaces as necessary in order to accurately represent the seafloor in accordance with NOS HSSD.

Table 10. H12467 Multibeam Surfaces

Surface Name	Resolution
H12467_2m_MLLW_1of4_Final	2.0m
H12467_4m_MLLW_2of4_Final	4.0m
H12467_50cm_MLLW_INV_3of4_Final	0.5m
H12467_1m_MLLW_INV_4of4_Final	1.0m

Side scan sonar mosaics were created for each 100% coverage at 50-centimeter resolution. Mosaics submitted with this survey are listed in Table 11.

Table 11. H12467 Side Scan Mosaics

Mosaic Name	Resolution
H12467_100Percent	0.5m
H12467_200Percent	0.5m

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of the horizontal and vertical control for survey H12467 can be found in the OPR-J348-KR-12 *Horizontal and Vertical Control Report (HVCR)*, submitted under separate cover. A summary of horizontal and vertical control for this survey follows.

C.1 Vertical Control

The vertical datum for this project is MLLW. Additional information related to tides and tide correctors is included in Tables 12, 13, and 14.

Table 12. Tide Stations

Station Name	Station ID
Pascagoula NOAA Lab, MS	874-1533

Table 13. HIPS Water Level Files

File Name	Status
8741533.tid	Verified

Table 14. HIPS Zoning Files

File Name	Status
REVISED_J348KR2012CORP.zdf	Revised Final Zoning

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83) projected in Universal Transverse Mercator (UTM) Zone 16. All of the real-time navigation data were collected in Differential GPS (DGPS) mode. DGPS corrections were received from the U.S. Coast Guard (USCG) beacon at English Turn, Louisiana (293 kHz) or from the secondary beacon at Eglin, Florida (295 kHz). During survey operations, some DGPS outages from the primary beacon occurred. The system was set up to automatically switch to the secondary beacon when the primary signal was lost.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

The majority of the chart comparison was performed by comparing H12467 depths to a digital surface generated from electronic navigational charts (ENCs) covering the survey area. ENCs at the same scale band were merged prior to surface creation in an attempt to build a continuous model over the survey area. A 50-meter product surface was then generated from a triangular irregular network (TIN) created from the soundings, depth contours, and depth features for each ENC scale. An additional 50-meter HIPS product surface of the entire survey area was generated from the finalized 4 meter CUBE surface. The chart comparison was conducted by creating and reviewing the resultant difference surface.

The electronic and raster versions of the relevant charts used during the comparison were reviewed to ensure that all USCG Local Notice to Mariners (LNM) issued during survey acquisition, impacting the survey area, were applied and addressed by this survey.

D.1.1 Raster Charts

The raster chart comparison was performed by comparing the raster navigational charts (RNCs) covering the survey area to the corresponding ENCs which were subsequently compared to H12467 using difference surface techniques. These RNCs are listed in Table 15.

Table 15. RNCs Compared to H12467

Chart	Scale	Edition Number	Edition Date	LNM Date	NM Date
11373	1:80,000	50	08/01/2012	10/30/2012	11/10/2012
11376	1:80,000	55	03/01/2011	10/30/2012	11/10/2012
11360	1:456,394	44	10/01/2010	10/16/2012	10/27/2012

11373

Chart 11373 was compared to US4MS12M within the H12467 survey area. As depicted in Figure 3, multiple discrepancies were discovered during this comparison where ENC soundings were one foot shoaler than the corresponding RNC sounding. This appears to be an issue with implementation of NOAA sounding rounding rules. When the ENC is set to display soundings in feet with default rounding the ENC and RNC soundings agree.

Charted differences determined by comparing surveyed depths to a digital surface of US4MS12M are discussed in Section D.1.2.

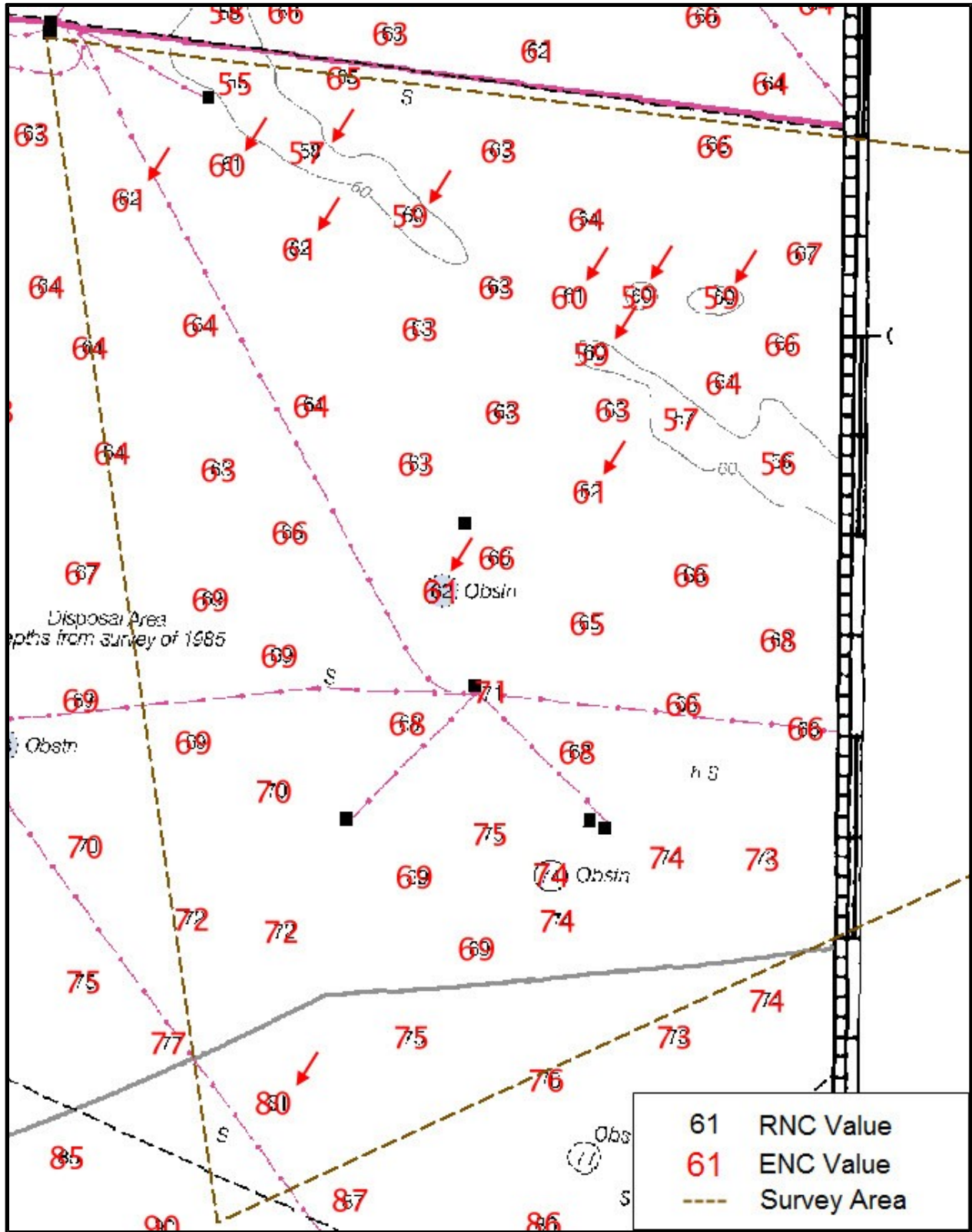


Figure 3. Sounding Discrepancies between 11373 and US4MS12M

11376

Chart 11376 was compared to chart US4AL11M within the H12467 survey area. As depicted in Figure 4, the ENC includes one sounding that is not portrayed on the corresponding RNC. In addition one ENC sounding was found to be one foot shoaler than the corresponding RNC sounding. This appears to be an issue with implementation of NOAA sounding rounding rules. When the ENC is set to display soundings in feet with default rounding the ENC and RNC soundings agree.

Charted differences determined by comparing surveyed depths to a digital surface of US4MS12M are discussed in Section D.1.2.

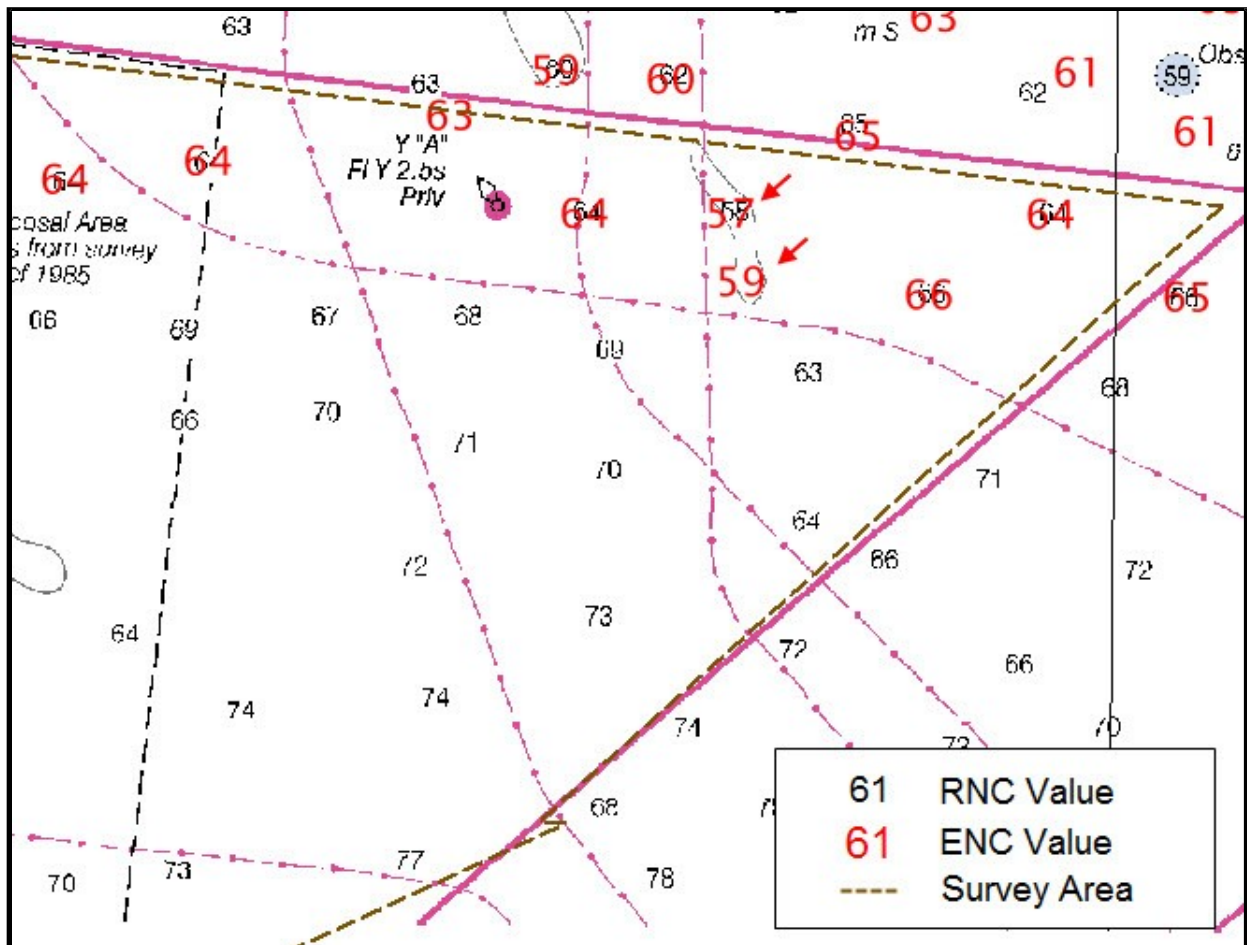


Figure 4. Sounding Discrepancies between 11376 and US4AL11M

11360

Chart 11360 corresponds to part of chart US3GC05M. Discrepancies between charted ENC and RNC soundings within the H12467 survey area (Figure 5) were also noted during this review. ENC soundings were displayed using the NOAA Fathoms rounding rule.

Five (5) pipelines charted on US3GC05M in the eastern end of the survey area are not portrayed on chart 11360.

Charted differences in this area determined by comparing surveyed depths to a digital surface of US3GC05M are discussed in Section D.1.2.

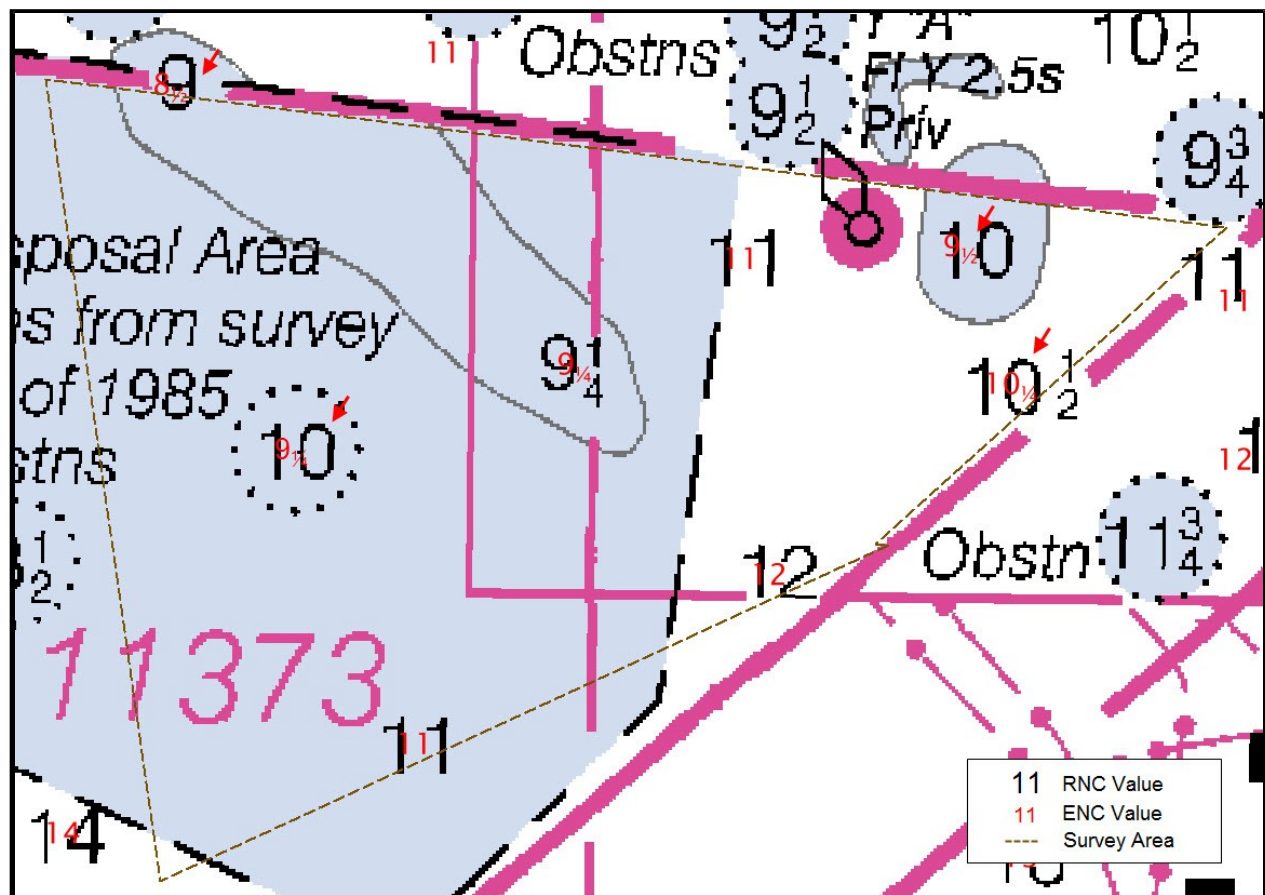


Figure 5. Sounding Discrepancies between 11360 and US3CG05M

D.1.2 Electronic Navigational Charts

Table 16 lists the ENC's compared to H12467.

Table 16. ENC's Compared to H12467

ENC Name	Scale	Edition Number	Update Application Date	Issue Date
US4AL11M	1:80,000	31	6/29/2011	12/04/2012
US4MS12M	1:80,000	19	07/27/2011	10/9/2012
US3GC04M	1: 250,000	48	11/06/2012	11/06/2012
US3GC05M	1:456,394	34	07/27/2011	09/24/2012

US4AL11M and US4MS12M

Surveyed depths from H12467 are generally 2 feet shoaler to 2 feet deeper than charted, though some areas are 2 feet to 7 feet shoaler than charted and 2 feet to 6 feet deeper than charted. Much of the survey area is covered by sand, which appears to have migrated since the area was last surveyed. Figure 6 depicts the difference in feet between H12467 and ENC's US4MS12M and US4AL11M.

US3GC04M and US3GC05M

The difference surface created from these small scale charts shows surveyed depths are generally zero to three fathoms deeper than charted (Figure 7).

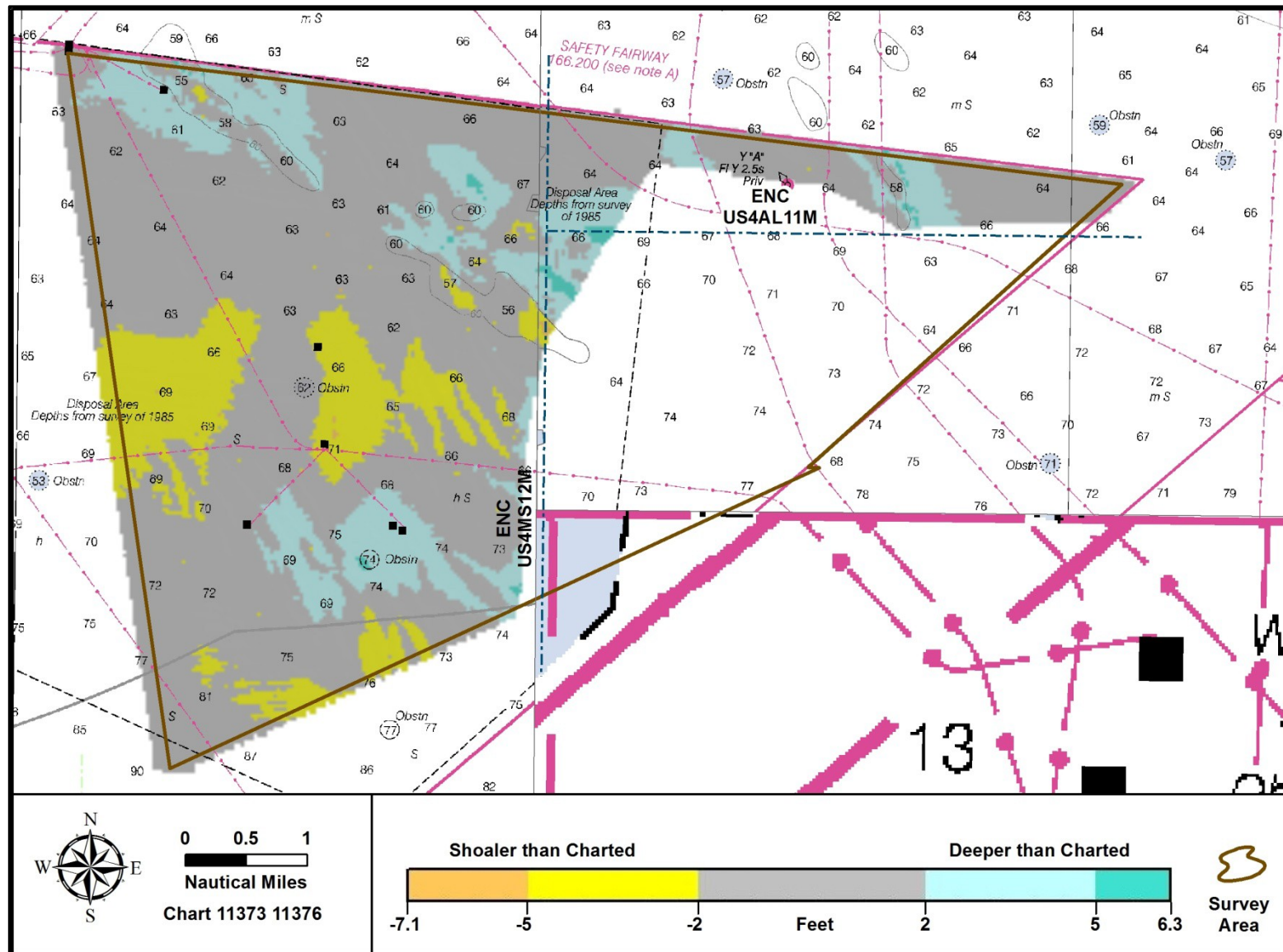


Figure 6. Depth Difference between H12467 and chart US4AL11M US4MS12M

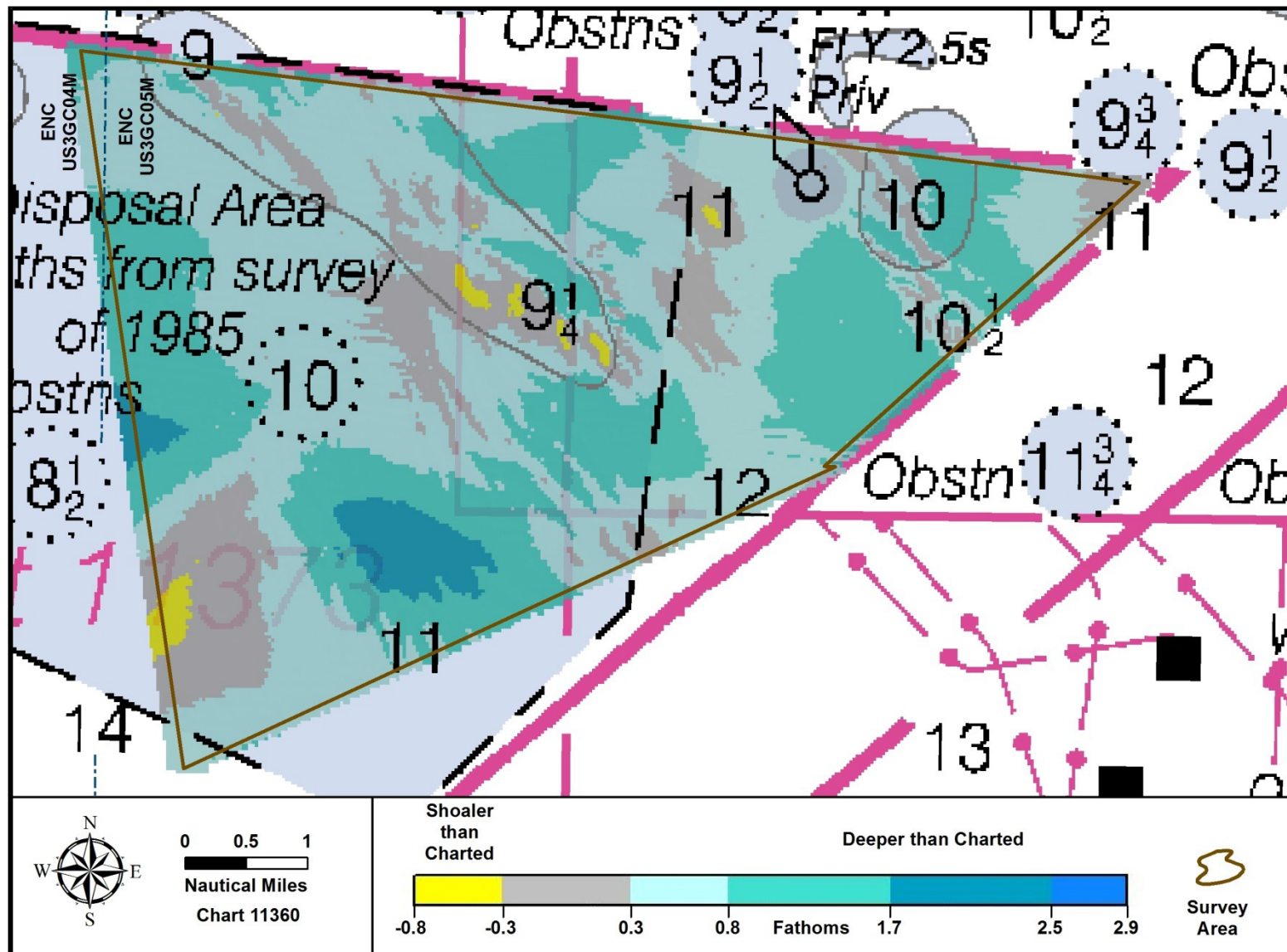


Figure 7. Depth Difference between H12467 and charts US3GC04M and US3GC05M

D.1.3 AWOIS Items

Two (2) AWOIS items were assigned for full investigation within survey H12467.

7366

The AWOIS database lists #7366 as an Obstruction from H10206/85-OPR-J217-MI-85 which was added during office processing. Survey H12467 has disproved this item with 200% side scan coverage. It is recommended that the obstruction be removed from the charts and the AWOIS database be updated with findings from the H12467 survey. The charted obstruction representing AWOIS #7366 as depicted in the Composite Source File (CSF) has been included in the Final Feature File with a description of 'Delete'.

7367

The AWOIS database lists #7367 as an Obstruction from H10206/85-OPR-J217-MI-85 which was added during office processing. Survey H12467 has disproved this item with 200% side scan coverage. It is recommended that the obstruction be removed from the charts and the AWOIS database be updated with findings from the H12467 survey. The charted obstruction representing AWOIS #7367 as depicted in the CSF has been included in the Final Feature File with a description of 'Delete'.

D.1.4 Charted Features

The survey contains no submerged charted features labeled as PD (Position Doubtful), ED (Existence Doubtful), PA (Position Approximate), or Reported. Charted features assigned in the CSF are included in the H12467 File Feature File and denoted with the Assignment Flag of 'Assigned'.

D.1.5 Uncharted Features

The H12467 Final Feature File includes 22 uncharted obstructions denoted with the description of 'New'.

D.1.6 Dangers to Navigation

No Dangers to Navigation (Dtons) were reported for this survey.

D.1.7 Shoal and Hazardous Features

No shoals or potentially hazardous features were located within the H12467 survey area.

D.1.8 Channels

The H12467 survey area does not contain any anchorage areas, maintained navigation channels or channel lines. The northern and eastern edges of H12467 border charted safety fairway (33 CFR 166.200).

D.2 Additional Results

D.2.1 Shoreline

Shoreline investigation was not assigned in the *OPR-J348-KR-12 Hydrographic Survey Project Instructions or Statement of Work*.

D.2.2 Prior Surveys

Aside from previously discussed comparison to junction survey H11547, no other comparisons with prior surveys were conducted.

D.2.3 Aids to Navigation

One (1) private Aid to Navigation (AtoN) was charted within the H12467 survey area. This buoy, Y "A" Fl Y 2.5 Priv, is included in the Final Feature File with a description of update and recommendation to chart the buoy at its surveyed location.

D.2.4 Overhead Features

There were no overhead bridges, cables, or other structures which would impact overhead clearance in the survey area.

D.2.5 Submarine Features

The H12467 survey area contains five charted pipelines. Multiple sections of these pipelines were found to be uncovered and exposed on the seafloor. This issue was directed to the Central Gulf Coast Region Navigation Manager, the project Contract Officer's Technical Representative (COTR) and staff at the Atlantic Hydrographic Branch via email on July 12, 2012. Email correspondence related to this matter is included in *OPR-J348-KR-12 Project Correspondence*.

The Navigation Manager notified the Bureau of Ocean Energy Management (BOEM). The pipeline owners are required to rebury the exposed sections. Reburial efforts will likely disturb the seafloor and could invalidate the H12467 survey surrounding these areas.

Sections of the exposed pipeline were digitized and included in the Final Feature File. It is recommended that all charted pipelines within the survey area be retained as charted.

D.2.6 Ferry Routes and Terminals

There were no ferry routes or terminals within the survey area.

D.2.7 Platforms

The H12467 survey coverage encompassed eight charted platforms. Six (6) of these platforms were disproved by both side scan coverage and visual disproval by the survey party and have been included in the Final Feature File with the recommendation to 'Delete'. The other two platforms were found to be charted correctly and are included in the feature file with recommendation to 'Retain as Charted'.

The seafloor underneath one disproved platform (Object name CALLON-102-11) was investigated with multibeam sonar multiple times due to a sonar contact and suspect multibeam soundings which digitized in the water column during both mainscheme hydrography and multibeam investigation. The data did not indicate a potential obstruction but rather a possible gas seep or line in the water. The feature was investigated again on September 6, 2012 (DN 250) and full water column data was acquired in addition to standard multibeam data. Further, the survey party searched for evidence of gas bubbles on the surface which have been observed at gas seep sites in the past. No evidence of bubbles on the sea surface was observed. The full water

column data (Figure 8) suggests the contact does not come to the surface and does not expand or spread as it rises from the seafloor, further disproving the gas seep theory and suggests the possibility of a line in the water column attached to the seafloor. This issue was brought to the attention of the Central Gulf Coast Region Navigation Manager and HSD. During a meeting with the Project COTR and Chief of the Operations Branch on November 15, 2012 it was decided that no additional action was required for this item and all suspect soundings in the water column have been deleted. Email correspondence with the Navigation Manager is included in *OPR-J348-KR-12 Project Correspondence*. The full water column collected in Reson .s7k format has been included with the H12467 digital data.

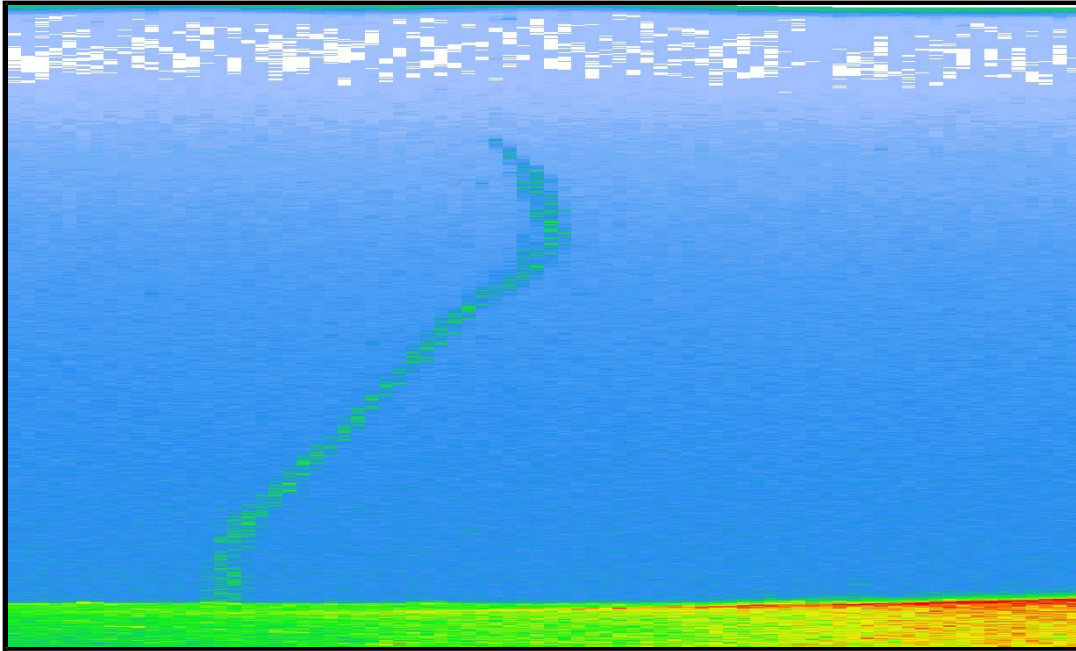


Figure 8. Full Water Column Investigation on CALLON-102-11

D.2.8 Significant Features

There was no additional information of scientific or practical value observed during the survey. No anomalous tidal or environmental conditions were observed during the survey that impacted the quality of the survey. However, from August 25, 2012 (DN 238) through September 5, 2012 (DN249) Hurricane Isaac impacted the survey area. As discussed in Section B2.1 changes in the seafloor are apparent in some areas when comparing pre-storm and post-storm multibeam data. Designated soundings were used as needed to accurately represent the least depth of the seafloor in areas of overlap between pre- and post-storm data.

D.2.9 Construction and Dredging

There were no construction or dredging activities observed during survey operations.

E. APPROVAL SHEET

The letter of approval for this report and accompanying data follows on the next page.



DAVID EVANS
AND ASSOCIATES INC.

LETTER OF APPROVAL
OPR-J348-KR-12
REGISTRY NO. H12467

This report and the accompanying data are respectfully submitted.

Field operations contributing to the accomplishment of survey H12467 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and associated data have been closely reviewed and are considered complete and adequate as per the OPR-J348-KR-12 *Statement of Work Statement* (April 2, 2012) and *Hydrographic Survey Project Instructions* dated April 16, 2012.

Digitally signed by Jon Dasler
DN: cn=Jon Dasler, o=David Evans and
Associates, Inc., ou=Marine Services
Division, email=jld@deainc.com, c=US
Date: 2013.01.28 15:48:16 -08'00'

Jonathan L. Dasler, PE, PLS, CH
ACSM/THSOA Certified Hydrographer
Chief of Party

Digitally signed by Jason Creech
DN: cn=Jason Creech, o=David Evans
and Associates, Inc., ou=Marine Services
Division, email=jasc@deainc.com, c=US
Date: 2013.01.28 15:50:20 -08'00'

Jason Creech
Lead Hydrographer

David Evans and Associates, Inc.
October 2012

F. TABLE OF ACRONYMS

ACSM	American Congress of Surveying and Mapping
ASCII	American Standard Code for Information Interchange
AtoN	Aid to Navigation
AWOIS	Automated Wreck and Obstruction Information System
BAG	Bathymetric Attributed Grids
BOEM	Bureau of Ocean Energy Management
COTR	Contract Officer's Technical Representative
CTD	Conductivity, Temperature, and Depth
CUBE	Combined Uncertainty and Bathymetry Estimator
DAPR	Data Acquisition and Processing Report
DEA	David Evans and Associates, Inc
DGPS	Differential Global Positioning System
DN	Day Number
DtoN	Danger to Navigation
ED	Existence Doubtful
ENC	Electronic Navigational Charts
GPS	Global Positioning System
HIPS	Hydrographic Information Processing System
HSD	Hydrographic Surveys Division
HSSD	Hydrographic Surveys Specifications and Deliverables
HVCR	Horizontal and Vertical Control Report
HVF	HIPS Vessel File
IHO	International Hydrographic Organization
IMO	International Maritime Organization
LNM	Local Notice to Mariners
MBES	Multibeam
MLLW	Mean Lower Low Water
MVP	Moving Vessel Profiler
NAD83	North American Datum of 1983
nm	Nautical Mile
NOAA	National Oceanic Atmospheric Administration
NOS	National Ocean Service
PA	Position Approximate
PD	Position Doubtful
PE	Professional Engineer, Professional Engineer
PLS	Professional Land Surveyor
PRF	Project Reference File
QC	Quality Control
R/V	Research Vessel
RNC	Raster Navigational Chart
SSS	Side Scan Sonar
StdDev	Standard Deviation
SVP	Sound Velocity Profile
THSOA	The Hydrographic Society of America
TIN	Triangular Irregular Network
TPU	Total Propagated Uncertainty
USCG	US Coast Guard
UTM	Universal Transverse Mercator

APPENDIX I
TIDES AND WATER LEVELS

Project: OPR-J348-KR-12 Registry No: H12467

Contractor Name: David Evans and Associates, Inc.

Date: October 2012

Sheet Number: 2

Inclusive Dates: June 27, 2012 - October 04, 2012

Time (UTC)

Day Number	Date	Start Time	End Time
179	06/27/2012	16:46:28	19:27:52
180	06/28/2012	13:23:07	20:22:46
181	06/29/2012	12:39:21	20:27:28
182	06/30/2012	12:41:29	19:59:52
183	07/01/2012	12:27:16	19:36:17
184	07/02/2012	13:28:54	18:50:56
185	07/03/2012	12:22:33	20:18:34
186	07/04/2012	12:29:30	15:55:44
187	07/05/2012	12:20:56	20:00:00
188	07/06/2012	13:44:27	14:23:53
189	07/07/2012	12:38:53	20:29:58
190	07/08/2012	12:31:24	19:22:34
191	07/09/2012	12:20:24	20:20:44
192	07/10/2012	12:11:30	20:05:17
193	07/11/2012	12:21:03	20:16:15
194	07/12/2012	12:17:25	18:31:03
206	07/24/2012	16:28:03	20:53:29
216	08/03/2012	19:11:43	19:27:56
217	08/04/2012	17:57:40	20:32:24
218	08/05/2012	13:22:37	18:30:31
250	09/06/2012	13:03:39	15:52:00
277	10/03/2012	15:30:14	20:31:04
278	10/04/2012	13:06:10	15:00:57

H12467

FINAL TIDE NOTE and FINAL TIDE ZONING CHART

DATE: October 4, 2012

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-J348-KR-12

HYDROGRAPHIC SHEET: H12467

LOCALITY Approaches to Mississippi Sound, Mississippi

SUB-LOCALITY: 9nm S of Dauphin Island

TIME PERIOD:	June	27-30
	July	1-12,24
	August	3-5
	September	6
	October	3-4

TIDE STATIONS USED: 8741533, Pascagoula NOAA Lab, MS
Lat. 30° 22.0 N, Lon. 88° 33.7' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF MEAN HIGH WATER (8741533) ABOVE PLANE OF REFERENCE: 0.440 meters ¹

¹ MLLW 6.674m Mean Lower-Low Water
 MHW 7.114m Mean High Water

http://tidesandcurrents.noaa.gov/data_menu.shtml?unit=0&format=Apply+Change&stn=8741533+Pascagoula+Noaa+Lab%2C+MS&type=Datums

**FINAL TIDE ZONING
H12467
OPR-J348-KR-12**

Zone	Time Corrector (Mins)	Range Ratio	Reference Station
CGM38	-24	0.93	8741533
CGM38A	-18	0.93	8741533

NOTE: Final soundings were reduced to chart datum using a CO-OPS issued revision to the zoning scheme provided with the project instructions.

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS
AND CORRESPONDENCE



OPR-J348-KR-12

H12467 Bottom Samples

David Evans and Associates, Inc.
2801 SE Columbia Way, Ste. 130
Vancouver, WA 98661
Phone: 360-314-3200
Fax: 360-314-3250

Sample_ID	Target_Name	Time_(UTC)	Date	Longitude_(W)	Latitude_(N)	COLOR	NATSUR	NATQUA
4	BS 4	14:41	7/24/2012	88/17/46.819	30/01/26.617	8	4-17	2
5	BS 5	14:54	7/24/2012	88/15/45.222	30/02/47.926	8	4	2
6	BS 6	15:06	7/24/2012	88/18/00.590	30/03/35.954	8	4	2
7	BS 7	15:26	7/24/2012	88/15/49.320	30/05/36.371	8-7	4-1	2-2

Castle Parker - NOAA Federal

From: Castle Parker - NOAA Federal
Sent: Tuesday, August 06, 2013 10:06 AM
To: 'Jason Creech'
Cc: Lori Knell - NOAA Federal; Melissa Sampson - NOAA Federal; 'Jon Dasler'; Abigail Higgins - NOAA Federal
Subject: RE: 2012 J348 Side Scan

Jason,

I've attempted to read the CARIS Service Request but cannot locate it or obtain access to read, as it is not within "My Company" requests and bearing in mind it was submitted by DEA. Thus, I can't read the details.

Bearing in mind the horizontal offset in the side scan contacts is directly related to the CARIS XTF format file conversion, AHB will not request a resubmission or correction of the side scan files and will not hold DEA as non-compliant with the side scan data. The side scan product (mosaic) does not include the horizontal offset and is correct. It is only in the CARIS converted XTF in line mode view that the contact's horizontal and layback offset is evident. I will have to pass the information to other AHB personnel such that awareness of the side scan contact's horizontal offset will not get documented as a non-compliance issue.

So, at this point AHB will continue with H12469 survey review and the remaining surveys from project OPR-J348-12. Thanks for your persistent efforts with defining and troubleshooting the side scan offset.

Regards,
Gene

From: Jason Creech [mailto:Jasc@deainc.com]
Sent: Tuesday, July 23, 2013 3:16 PM
To: Castle Parker - NOAA Federal
Cc: Lori Knell - NOAA Federal; Melissa Sampson - NOAA Federal; Jon Dasler; Abigail Higgins
Subject: RE: 2012 J348 Side Scan

Hi Gene

Caris has confirmed that there is a bug in their XTF converter. They are currently working on a temporary fix which may not be released until after version 8.1 and are consulting with Triton regarding the best way of converting XTF data in the future. The XTF converter currently synchronizes navigation times from one data packet and side scan times from another data packet though they have intended to synchronize all times to the same XTF packet. The offset you are noticing in our data after converting into SIPS is caused by this bug. We are still waiting on some additional details from Caris, but I wanted to let you know that this is the result of SIPS working incorrectly.

Let me know if you have any questions or require any additional information. Our Caris Support Service Request on this issue is #01301404.

At this point is there any additional action required for the acceptance of our SIPS compatible side scan data as delivered?

Thanks,
Jason

From: Castle Parker - NOAA Federal [<mailto:castle.e.parker@noaa.gov>]
Sent: Thursday, June 27, 2013 6:57 AM
To: Jason Creech
Cc: Lori Knell - NOAA Federal; Melissa Sampson - NOAA Federal; Jon Dasler; Abigail Higgins
Subject: RE: 2012 J348 Side Scan

Jason,
Sounds good. The delay is not as important as receiving SS data that correlates to the other products submitted, for NOAA archiving, and for NGDC public access via the internet. I have enough survey data for review and acceptance that the delay for J348 is insignificant.
Let me know as things progress and thanks for the update.
Regards,
Gene

From: Jason Creech [<mailto:Jasc@deainc.com>]
Sent: Thursday, June 27, 2013 9:49 AM
To: Castle Parker - NOAA Federal
Cc: Lori Knell - NOAA Federal; Melissa Sampson - NOAA Federal; Jon Dasler
Subject: RE: 2012 J348 Side Scan

Gene

Thanks for the update on the data issue. We are currently exploring a few possible fixes for the XTF timing. It appears that the best path forward is for Triton to create a utility that will allow us to rewrite the XTF timing in the Sonar Ping header. We would then resubmit the XTF data after the timing is adjusted. We have discussed this issue with Triton software support as well as one of our Lead Hydrographers who used to be employed with Triton. The head programmer for Triton is on vacation until after the 4th of July, but would be able to get going on a fix as soon as he returns.

Since we do not use Caris SIPS the timing discrepancy was not apparent during processing. All derived SSS data products (which were created using SonarWiz, Isis and TargetPro) submitted with these surveys, such as mosaics, contact listings, and MBES investigation targets are valid. These software packages do not read the sonar ping time.

Once we have new versions of the XTF files would it be acceptable to resubmit the XTF data for surveys H12466-70 on a single USB hard drive using the standard delivery path for the data?
OPR-J348-KR-12\H124XX\Data\Processed\Bathymetry_&_SSS\SSS\SSS_Data

The UTC sync was reinitiated prior to the start of H12471 so this survey was not impacted.

Let me know if you have any thoughts on this proposal. We regret that our data has this problem and are making every effort to provide an acceptable fix.

Thanks again,
Jason

From: Castle Parker - NOAA Federal [<mailto:castle.e.parker@noaa.gov>]
Sent: Tuesday, June 25, 2013 5:07 AM
To: Jason Creech

Cc: Lori Knell - NOAA Federal; Melissa Sampson - NOAA Federal

Subject: 2012 J348 Side Scan

Jason,

I have discussed the side scan timing issue with AHB Chief. AHB has only reviewed two surveys; H12466 being approved, leaving the survey review for H12469 as unfinished or incomplete. We will stop the survey review for H12469 to see what can be done to resolve the timing issues. H12467 and H12468 survey reviews have yet to be started, so the only down side is time waiting for a fix. The deliverable submission date would be revised to the receiving date of the second set of SS data.

Waiting for resolution could and would eliminate comments that could be misconstrued as oversights with very complicated processes, eliminating a non-compliance situation. I have seen similar situations in the past with in-house data as well, so it's not uncommon. It is unfortunate that the different software that DEA and AHB uses sort of creates the offset problem. If AHB was on the same page and using the same software as DEA, the issue would not affect the deliverables and how we view the data. Therefore, it is in our best interest to delay the reviews for J348 surveys in order to correct the problem.

If you have other thoughts about this situation, please respond. Please keep us informed as to the progress and resolution with this issue.

Regards,

Gene

Castle Parker - NOAA Federal

From: Castle Parker - NOAA Federal
Sent: Tuesday, August 06, 2013 11:50 AM
To: AHB (nos.ahb.allpersonnel@noaa.gov)
Subject: DEA 2012 J348 Side Scan: CARIS Converter Issues

FYI...
DEA's project OPR-J348-12 contains a layback or horizontal offset of the side scan contact within the CARIS converted XTF data files. The problem is related to the CARIS converter and where within the XTF file it sources the ship and tow fish geographic location during the conversion. This issue is also related to how the data packets are arranged in conjunction with the CARIS converter. For instance, some of the XTF submitted to AHB for other surveys will convert correctly; this is related to the data packets within the XTF files of which the CARIS converter program sources the location from the correct data packet.

The issue was noted with surveys pertaining to project J348-12 in that the side scan contacts will not be spatially correct within the SS Editor line view in relation to the map window. Please bear this in mind when reviewing the side scan imagery. The submitted side scan mosaics will be spatially correct as the products are generated via SonarWiz. Therefore, the converted XTF should only be used for feature verification with the object type as opposed to the contact's location.

CARIS is working on a fix but it will only be applicable with CARIS HIPS/SIPS version 8.0 and the next hot fix. This will present problems for us at AHB because the J348 projects were processed with HIPS/SIPS 7.1. Therefore, we don't want to jump to version 8 until we receive surveys that were submitted as processed with version 8.

The bottom line is... for the J348 spatial correlation of the side scan contacts, reference and use the mosaic for spatial verification as opposed to SS Editor. Use the SS Editor line view for the interpretation of the contact and feature type.

Respond as necessary.

Regards,
Gene

From: Jason Creech [<mailto:Jasc@deainc.com>]
Sent: Tuesday, July 23, 2013 3:16 PM
To: Castle Parker - NOAA Federal
Cc: Lori Knell - NOAA Federal; Melissa Sampson - NOAA Federal; Jon Dasler; Abigail Higgins
Subject: RE: 2012 J348 Side Scan

Hi Gene

Caris has confirmed that there is a bug in their XTF converter. They are currently working on a temporary fix which may not be released until after version 8.1 and are consulting with Triton regarding the best way of converting XTF data in the future. The XTF converter currently synchronizes navigation times from one data packet and side scan times from another data packet though they have intended to synchronize all times to the same XTF packet. The offset you are noticing in our data after converting into SIPS is caused by this bug. We are still waiting on some additional details from Caris, but I wanted to let you know that this is the result of SIPS working incorrectly.

Let me know if you have any questions or require any additional information. Our Caris Support Service Request on this issue is #01301404.

At this point is there any additional action required for the acceptance of our SIPS compatible side scan data as delivered?

Thanks,
Jason

APPENDIX III

SURVEY FEATURES REPORT

- i. DTONS (0)
- ii. AWOIS (2)
- iii. WRECKS (0)
- iv. Maritime Boundary (0)

H12467 AWOIS Feature Report

Registry Number: H12467
State: Mississippi
Locality: Approaches to Mississippi Sound
Sub-locality: 9nm South of Dauphin Island
Project Number: OPR-J348-KR-12
Survey Date: 10/04/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11373	47th	10/01/2008	1:80,000 (11373_1)	[L]NTM: ?
1115A	43rd	11/01/2008	1:456,394 (1115A_1)	[L]NTM: ?
11360	43rd	11/01/2008	1:456,394 (11360_1)	[L]NTM: ?
11006	32nd	08/01/2005	1:875,000 (11006_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

* Correction(s) - source: last correction applied (last correction reviewed--"cleared date")

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS #7366	GP	[None]	30° 03' 39.6" N	088° 17' 17.3" W	7366
1.2	AWOIS #7367	GP	[None]	30° 02' 16.2" N	088° 16' 39.7" W	7367

1 - H12467 AWIOS Items

1.1) AWOIS #7366

Primary Feature for AWOIS Item #7366

Search Position: 30° 03' 40.3" N, 088° 17' 17.3" W
Historical Depth: [None]
Search Radius: 100
Search Technique: MB
Technique Notes: [None]

History Notes:

HISTORY

H10206/85--OPR-J217-MI-85; OBSTRUCTION ADDED DURING OFFICE PROCESSING IN
 LAT 30-03-39.60N, LONG 88-17-17.28W. ECHO SOUNDER DEPTH OF 62 FEET.

EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION AS SURVEYED AND INVESTIGATING
 AT AN OPPORTUNE TIME. (ENT 5/89 SJV)

Survey Summary

Survey Position: 30° 03' 39.6" N, 088° 17' 17.3" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2012-278.00:00:00.000 (10/04/2012)
Dataset: H12467_AWOIS.000
FOID: US 0000434655 00001(02260006A1DF0001)
Charts Affected: 11373_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

\$CSYMB/remrks: DEA CF #10. AWOIS 7366. Disproved with 200% side scan coverage.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12467_AWOIS.000	US 0000434655 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 7366	22.60	179.3	Secondary (grouped)

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol (\$CSYMB)
Attributes: NINFOM - Delete 62ft obstruction. AWOIS#7366
SORDAT - 20121004
SORIND - US,US,graph,H12467

Office Notes

SAR: AWOIS 7366, charted 62ft Obstruction disproved by 200% side scan sonar. COMPILATION:
Concur. No evidence of obstruction was observed in sounding data or 200% side scan sonar coverage.
Delete 62ft obstruction.

1.2) AWOIS #7367

Primary Feature for AWOIS Item #7367

Search Position: 30° 02' 16.9" N, 088° 16' 39.6" W
Historical Depth: [None]
Search Radius: 100
Search Technique: MB
Technique Notes: [None]

History Notes:

HISTORY

H10206/85--OPR-J217-MI-85; OBSTRUCTION ADDED DURING OFFICE PROCESSING IN
 LAT 30-02-16.18N, LONG 88-16-39.56W. ECHO SOUNDER DEPTH OF 74 FEET.

EVALUATOR RECOMMENDS CHARTING AN OBSTRUCTION AS SURVEYED AND INVESTIGATING
 AT AN OPPORTUNE TIME. (ENT 5/89 SJV)

Survey Summary

Survey Position: 30° 02' 16.2" N, 088° 16' 39.7" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2012-278.00:00:00.000 (10/04/2012)
Dataset: H12467_AWOIS.000
FOID: US 0000434656 00001(02260006A1E00001)
Charts Affected: 11373_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

AWOIS 7367. Disproved with 200% side scan coverage.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12467_AWOIS.000	US 0000434656 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 7367	22.81	189.7	Secondary (grouped)

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol (\$CSYMB)
Attributes: NINFOM - Delete 74ft obstruction. AWOIS#7367
SORDAT - 20121004
SORIND - US,US,graph,H12467

Office Notes

SAR: AWOIS 7367, charted 74ft Obstruction disproved by 200% side scan sonar. COMPILATION:
Concur. No evidence of obstruction was observed in sounding data or 200% side scan sonar coverage.
Delete 74ft obstruction.

APPROVAL PAGE

H12467

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 NGDC for archive

- H12467_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12467_GeoImage.pdf

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

Approved: _____

LT Matthew Jaskoski
Chief, Atlantic Hydrographic Branch