

H11619

NOAA FORM 76-35A
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey: Hydrographic Single Beam & 100% Sidescan

Field No. : Sheet D

Registry No. : H11619

LOCALITY

State: Mississippi

General Locality: Mississippi Sound

Sublocality: Between Biloxi and Belle Fontaine Point

2007

CHIEF OF PARTY

Joseph Burke

LIBRARY & ARCHIVES

DATE: _____

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	HYDROGRAPHIC TITLE SHEET	REGISTRY NUMBER: H11619
		FIELD NUMBER: Sheet D	
State: <u>Mississippi</u> General Locality: <u>Mississippi Sound</u> Locality: <u>Between Biloxi and Belle Fontaine Point</u> Scale: <u>1:40,000</u> Date of Survey: <u>September 2006 to April 2007</u> Instructions Dated: <u>25-Sep-06</u> Project Number: <u>S-J977-KR-CC</u> Vessels: <u>Arlen, High Roller, Hydro Surveyor</u> Chief of Party: <u>Joseph Burke</u> Surveyed by: <u>T. Shannon, Kyle Simreral, Scott McBay, John Baker, Jacob Hudspeth</u> <hr/> Soundings taken by echosounder, hand lead line, or pole: <u>Odom Hydrotrac Echosounder</u> Graphic record scaled by: <u>N/A</u> Graphic record checked by: <u>N/A</u> Protracted by: <u>N/A</u> Automated plot by: <u>HP 1055 Plotter</u> Verification by: <u>C&C Technologies Personnel</u> <i>AHB comments in bold red italic font</i> Soundings in: Feet: <u>X</u> Fathoms: <u> </u> Meters: <u> </u> at MLW: <u> </u> MLLW: <u>X</u>			
Remarks: <u>Single Beam Debris Mapping Survey of Sheet A</u> <u>Data collection in meters, referenced to MLLW, later converted into feet</u> <u>100% side scan sonar coverage</u> <u>CTC time was used exclusively</u> <u>Grab samples were taken</u> <u>Tidal Zones: CGM 507, CGM 66. and CGM 68</u> <u>Tidal Station: 8745557 and 8741533</u>			

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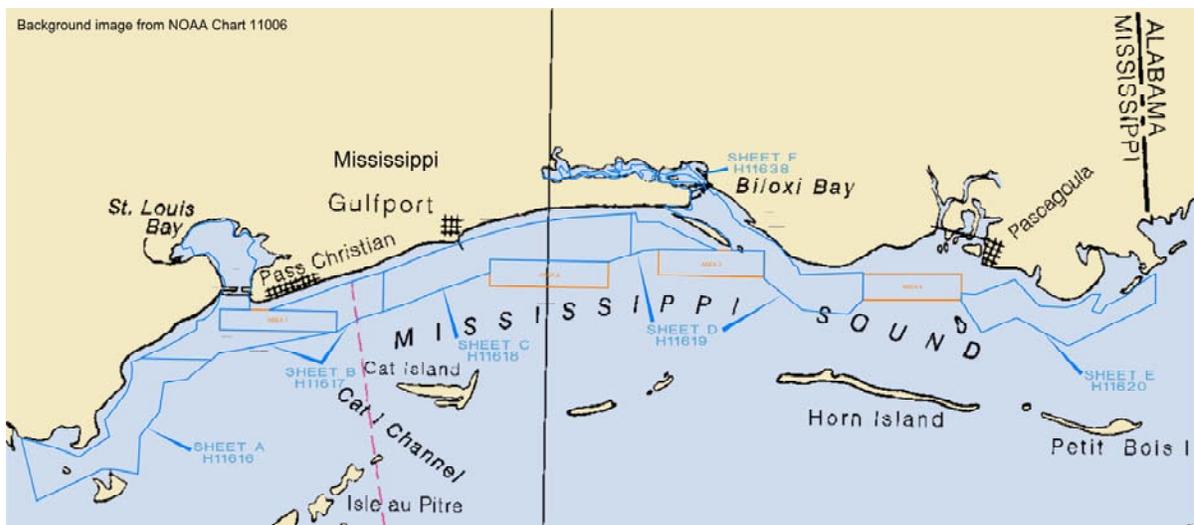
Appendix I	Danger to Navigation Reports
Appendix II	List of Geographic Names
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SEPARATES

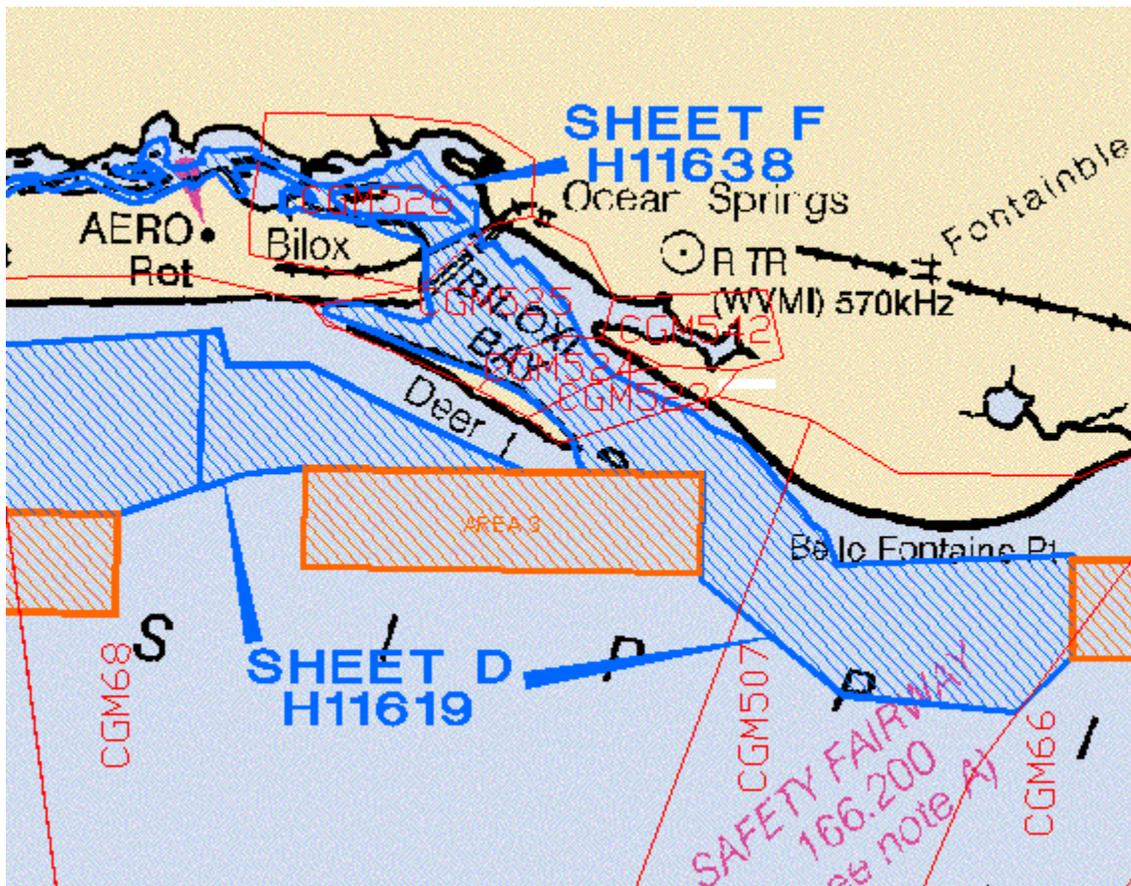
Separates I	Acquisition and Processing Logs
Separates II	Side Scan Sonar
Separates III	Sound Velocity Profile Data
Separates IV	Statement of Work
Separates V	Crossline Comparisons

A. AREA SURVEYED

The survey area is located between Biloxi and Belle Fontaine Point, along the coast of Mississippi in the Mississippi Sound. The sketch on the following page shows the layout of the Project (OPR-J977-KR-CC) and Sheet D (H11619). Water depths in the survey area range from less than one foot to 18 feet Mean Lower Low Water (MLLW). *Concur.*



Eight tidal zones, CGM 66, 68, 507, 523, 524, 525, 526, and 542, cover the survey area. Tidal data from the Gulfport Harbor (8745557) were used to process all of the tidal data. A sketch showing the layout of the tidal zones and subareas is shown below. A tidal correction error exists between the dates of October 2nd through October 25th. This error is most likely due to local meteorological events. In an attempt to correct this error a tide zone file applying Gulfport tide readings to the entire survey area was supplied to C&C Technologies by CO-Ops. This tide zone file was only applied to survey H11619. It is called J977KR2007CC_CORP_Analysis_CC.zdf and can be found within the tide folder of the Caris project submitted in conjunction with this report. *Concur.*



B. DATA ACQUISITION AND PROCESSING

B.1 EQUIPMENT

System	Manufacturer	Model
Side Scan Sonar	Geoacustics	196D(Transducers)
Side Scan Sonar (Arlen)	Imagenex	SportScan
Single Beam Sonar	Odom	Hydrotrac
Motion Sensor	TSS	335,320
Positioning System	CNAV DGPS	2050m

See Data Acquisition and Processing Report* for a detailed description of the equipment used for hydrographic operations.

The *High Roller*, a 41-foot Lafitte skiff, was used for hydrographic operations in Sheet D. The vessel is 16 feet wide and has an approximate draft of 2.6 feet. A central reference point (CRP) was established from which offsets to all equipment were measured. The relevant offsets are presented in the following table where X is positive forward, Y is positive starboard, and Z is positive down. **Concur.**

	Hydrotrac Head	Side Scan Sonar Towpoint	CNAV DGPS Antennae
X Offset	-5.18m	5.72 m	0 m
Y Offset	0 m	0m	0 m
Z Offset	.67 m	N/A	-5.18 m

The *Arlen* is a 20-foot survey vessel. The vessel is 7 feet wide and has an approximate draft of 1.5 feet. The CNAV antennae were used as the central reference point for this vessel. A cleat on the forward deck of the boat was used as the side scan tow point. The relevant offsets are presented in the following table where X is positive forward, Y is positive starboard, and Z is positive down. **Concur.**

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	Hydrotrac Head	Side Scan Sonar Towpoint	CNAV Antennae
X Offset	-4.78 m	1.20 m	0.00 m
Y Offset	0.00 m	0.00 m	0.00 m
Z Offset	2.29 m	2.29 m	0.00 m

The *Beach Surveyor* is a 25-foot survey vessel. The vessel is 7.6 feet wide and has an approximate draft of 1.5 feet. A central reference point (CRP) was established from which offsets to all equipment were measured. The relevant offsets are presented in the following table where X is positive forward, Y is positive starboard, and Z is positive down. ***Concur.***

	Hydrotrac Head	Side Scan Sonar Towpoint	CNAV Antennae
X Offset	-4.78 m	1.20 m	0.00 m
Y Offset	0.00 m	0.00 m	0.00 m
Z Offset	2.29 m	2.29 m	-2.38 m

The *Hydro Surveyor* is a 22-foot survey vessel. The vessel is 7.5 feet wide, and has a draft of approximately 1.2 feet. The CNAV antennae were used as the central reference point for this vessel. A cleat on the forward deck of the boat was used as the side scan tow point. The relevant offsets are presented in the following table where X is positive forward, Y is positive starboard, and Z is positive down. ***Concur.***

	Hydrotrac Head	Side Scan Sonar Towpoint	CNAV Antennae
X Offset	-4.00 m	1.37 m	0 m
Y Offset	0.00 m	0.00 m	0 m
Z Offset	2.61 m	1.78 m	0 m

Detailed vessel diagrams and patch test results are presented in the Data Acquisition and Processing Report*. ****DAPR included with survey submission.***



B.2 QUALITY CONTROL

This survey follows the coast in parallel to the Biloxi navigation channel. The survey lines were drawn in an east-west direction throughout the survey. The line spacing was set at 40 meters in the section of the survey that lies north of Deer Island, based on the criteria of 100 percent side scan coverage. The spacing was set at 70 meters throughout the remainder of the survey area, based on the criteria of 100 percent side scan coverage. The side scan sonar was operated at either 30 or 75 meter per channel range depending upon the line spacing in use. Investigation lines were typically collected at 30-meter range. *Concur with clarification. The line spacing is 40 meters in the area north and to the east of Deer Island. South of Deer Island, there is 50 meter line spacing, and west of Deer Island, there is 70 meter line spacing.*

In order to verify that the single beam was working properly, bar checks were conducted frequently. Pole measured depths were taken simultaneously with single beam collection in areas where the depth is similar to those found in the survey area. The results were compared, and if needed, the single beam was corrected. *Concur.*

Sheet D (H11619) adjoins with Sheet C (H11618). The junction between Sheets D and C was evaluated and the soundings were found to agree to within 1 foot. *Concur.*

Layback corrections were applied to all side scan .XTF data during office processing. All side scan data can be imported into a Caris project using a zero vessel file. *Concur.*



B.3 CORRECTIONS TO ECHO SOUNDINGS

No deviations from the Correction to Echo Soundings section in the Data Acquisition and Processing Report* occurred. *Do not concur. HVF's for this sheet did not correlate with DAPR specifications. Field unit contacted regarding discrepancy, and corrected HVF's were obtained and applied to survey data. * DAPR included with survey submission.*

C. VERTICAL AND HORIZONTAL CONTROL

Tide and water level corrections were determined and applied in accordance with Attachment #7 of the Statement of Work. Data from the Gulfport Harbor (8745557) tidal station was used. Tidal zoning as set forth in the Statement of Work was applied. The following table shows the tidal zone and correctors that were used for this sheet. Tidal data were processed using the 1983-01 epoch. A tidal correction error exists between the dates of October 2nd through October 25th. This error is most likely due to local meteorological events. In an attempt to correct this error a tide zone file applying Gulfport tide readings to the entire survey area was supplied to C&C Technologies by CO-Ops. This tide zone file was only applied to survey H11619. It is called J977KR2007CC_CORP_Analysis_CC.zdf and can be found within the tide folder of the Caris project submitted in conjunction with this report. *Concur.*

Tide Zone	Reference Station	Time Corrector (min)	Range Ratio
CGM66	8745557	-18	0.98
CGM68	8745557	-6	1.01
CGM507	8745557	-18	1.01
CGM523	8745557	-6	1.07
CGM524	8745557	0	1.07
CGM525	8745557	12	1.07
CGM526	8745557	18	1.13
CGM542	8745557	12	1.1

The horizontal datum for the survey is the WGS84. The projection is Universal Transverse Mercator (UTM) Zone 16 North. The vertical datum for the soundings is Mean Lower Low Water (MLLW). *Concur.*



D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

D.1.1 CHARTS AND NOTICES TO MARINERS

The following charts were used for comparison purposes.

Chart Number	Scale	Edition	Edition Date
11372	1:40,000	32	February, 2006
11373	1:80,000	45	February, 2006
11374	1:40,000	33	October, 2005

Concur.



D.1.2 CHARTED SOUNDINGS

11372

Charted soundings generally agree within 1-2 feet throughout the survey area.

Concur.

11373

Charted soundings generally agree within 1-2 feet throughout the survey area.

Concur.

11374

Charted soundings generally agree within 1-2 feet throughout the survey area.

Concur.

D.1.3 SHOALS AND HAZARDOUS FEATURES

The purpose of this survey was to identify hurricane debris left by Hurricane Katrina. A spreadsheet of all contacts found is included in Separates II. ***Concur.***

D.1.4 CHARTED FEATURES

All charted features within the survey bounds were verified/disproved with 200% side scan sonar coverage. ***Concur.***

Wreck PD

Charted Position: ~~30.367888°N, 88.920097°W~~ ***30-22-06.3203N, 88-55-05.5034W***

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. ***Concur.***

Visible Wreck

Charted Position: ~~30.352892°N, 88.908459°W~~ ***30-21-11.9988N, 88-54-24.0012W***



Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Wreck PA

Charted Position: ~~30.362265°N, 88.883802°W~~ **30-21-45.5976N, 88-52-54.8976W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Do not concur. Observed in SSS. Retain as charted**

Visible Wreck

Charted Position: ~~30.391077°N, 88.880266°W~~ **30-23-30.0012N, 88-52-41.9988W**

Investigation Summary: Debris in the vicinity of this charted wreck was marked, and is further discussed in section D.1.5, contact 0360. It is recommended that this feature remain as charted. **Concur.**

Visible Wreck

Charted Position: ~~30.38971°N, 88.872675°W~~ **30-23-24.864N, 88-52-14.2032W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Visible Wreck

Charted Position: ~~30.386067°N, 88.863457°W~~ **30-23-11.9040N, 88-51-41.21W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Obstn PA

Charted Position: ~~30.38469°N, 88.863747°W~~ **30-23-07.0001N, 88-51-42.0001W**

Investigation Summary: No evidence of this obstruction was seen. It is recommended that this obstruction be removed from the chart. **Concur.**



Obstn PA

Charted Position: ~~30.384524°N, 88.848893°W~~ **30-23-06.259N, 88-50-48.3324W**

Investigation Summary: No evidence of this obstruction was seen. It is recommended that this obstruction be removed from the chart. **Concur.**

Obstn PA

Charted Position: ~~30.396274°N, 88.833841°W~~ **30-23-48.9156N, 88-49-54.1884W**

Investigation Summary: Debris was found in the vicinity of this charted feature, and is further discussed in section D.1.5, contacts 0227 and 0238. **Concur. Retain as charted.**

Obstn

Charted Position: ~~30.377972°N, 88.840328°W~~ **30-22-40.7568N, 88-50-25.4112W**

Investigation Summary: Debris was found in the vicinity of this charted feature, and is further discussed in section D.1.5, contacts 0098 and 0099. **Concur. Retain as charted.**

Wreck PD

Charted Position: ~~30.390581°N, 88.840864°W~~ **30-23-29.7132N, 88-50-21.0984W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Obstn PA

Charted Position: ~~30.393177°N, 88.832001°W~~ **30-23-38.9976N, 88-49-50.9988W**

Investigation Summary: Debris was found in the vicinity of this charted feature, and is further discussed in section D.1.5, contacts 0479. **Concur. Retain obstruction as charted.**



Visible Wreck

Charted Position: ~~30.394782°N, 88.827674°W~~ **30-23-43.5336N, 88-49-31.9512W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Obstn PA

Charted Position: ~~30.38779°N, 88.845445°W~~ **30-23-17.9988N, 88-50-35.9988**

Investigation Summary: No evidence of this obstruction was seen. It is recommended that this obstruction be removed from the chart. **Concur.**

Wreck PA

Charted Position: ~~30.382747°N, 88.835568°W~~ **30-22-59.9844N, 88-50-00.1644W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Wreck PA

Charted Position: ~~30.36975°N, 88.805753°W~~ **30-22-12.7164N, 88-48-12.0960W**

Investigation Summary: Debris was found in the vicinity of this charted feature, and is further discussed in section D.1.5, contacts 0471. **Recommend for debris referenced at contact 0471 be charted as an obstruction. Recommend for the wreck to be removed from the chart.**

Obstn PA

Charted Position: ~~30.357934°N, 88.783997°W~~ **30-21-29.9902N, 88-46-53.5598W**

Investigation Summary: No evidence of this obstruction was seen. It is recommended that this obstruction be removed from the chart. **Concur.**

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Obstn PD

Charted Position: ~~30.353601°N, 88.769913°W~~ **30-21-13.0320N, 88-46-12.1224W**

Investigation Summary: No evidence of this obstruction was seen. It is recommended that this obstruction be removed from the chart. **Concur.**



Obstn PD

Charted Position: ~~30.34008°N, 88.774895°W~~ **30-20-24.1944N, 88-46-30.2484W**

Investigation Summary: No evidence of this obstruction was seen. It is recommended that this obstruction be removed from the chart. **Concur.**

Wreck PA

Charted Position: ~~30.339886°N, 88.76642°W~~ **30-20-23.3988N, 88-45-59.4000W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Obstn PA

Charted Position: ~~30.34028°N, 88.749879°W~~ **30-20-24.9900N, 88-45-00.1368W**

Investigation Summary: No evidence of this obstruction was seen. It is recommended that this obstruction be removed from the chart. **Concur.**

Wreck PA

Charted Position: ~~30.333407°N, 88.779645°W~~ **30-20-00.3408N, 88-46-47.2836W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Wreck PA

Charted Position: ~~30.333629°N, 88.783489°W~~ **30-20-01.0840N, 88-47-00.7176W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

Visible Wreck

Charted Position: ~~30.330365°N, 88.739861°W~~ **30-19-49.4724N, 88-44-24.1044W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**



Wreck PA

Charted Position: ~~30.333617°N, 88.724916°W~~ **30-20-00.9636N, 88-43-29.9172W**

Investigation Summary: No evidence of this wreck was seen. It is recommended that this wreck be removed from the chart. **Concur.**

D.1.5 INVESTIGATION ITEMS

Sixty-nine items were investigated. A set of three or more additional single beam and side scan lines were run over each of these locations in order to verify their position and determine their least depth. Of those sixty-nine items, forty-one were verified.

Contact 0000

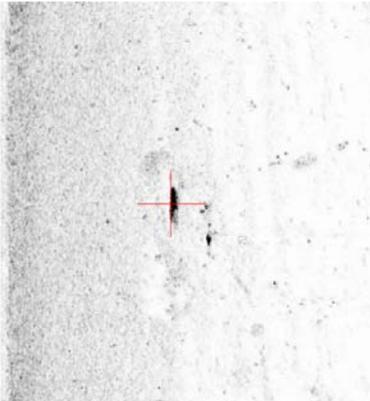
Least Depth: 10.62ft (D-4000-3a) *After tide correction, LD=9.249 ft.*

Position: ~~30.3564743° N, 88.784946° W~~ (WGS84)

30-21-23.3078N, 88-47-05.8056W

Time Stamp: 2007-03-23 09:19:52

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 10-foot submerged obstruction at 30.3564743° N, 88.784946° W (WGS84). This position was taken from single beam line D-4000-3a. *Do not concur, insignificant.*



inv4000

- Sonar Time at Target: 03/23/2007 13:44:10
- Click Position (Lat WGS84): 30.356456256
- Click Position (Lon WGS84): -88.784921969
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 328,453.30
- Click Position (Y): 3,359,635.35
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4000-1.xtf
- Ping Number: 725
- Range to Target: 23.32 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4000-1
- Area / Block:

Dimensions

Target Height = 0.28 Meters
Target Length: 4.02 Meters
Target Shadow: 1.58 Meters
Target Width: 0.96 Meters

Description: Investigated contact 4000 found.

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Contact 0012

Estimated Least Depth: 3.149ft (C_0012A based on side scan sonar data) *reported*
After tide correction, ELD~4.5ft.

Position: 30.359033616° N, 88.772691272° W (WGS84)

30-21-32.5210N, 88-46-21.6887W

Time Stamp: 2006-10-10 11:38:24

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 3-foot submerged obstruction at 30.359033616° N, 88.772691272° W (WGS84) *reported*. This position was taken from side scan line C_0012A. ***Do not concur, insignificant.***

	<p>inv_0012</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/10/2006 11:38:24 • Click Position (Lat WGS84): 30.359033616 • Click Position (Lon WGS84): -88.772691272 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 329,633.43 • Click Position (Y): 3,359,902.57 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\C_0012A.XTF • Ping Number: 1555 • Range to Target: 16.85 Meters • Fish Height: 1.59 Meters • Event Number: 0 • Line Name: C_0012A • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.14 Meters Target Length: 1.84 Meters Target Shadow: 1.74 Meters Target Width: 0.98 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown contact</p>
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Contact 0023

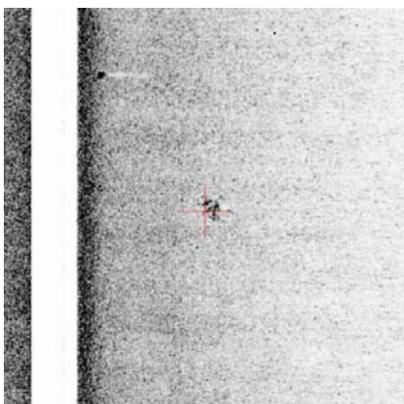
Least Depth: 4.13ft (D-4023-3) *After tide correction, LD=2.94ft.*

Position: ~~30.3634944° N, 88.7744733° W~~ (WGS84)

30-21-48.5802N, 88-46-28.1039W

Time Stamp: 2007-03-23 07:57:20

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 4-foot submerged obstruction at 30.3634944° N, 88.7744733° W (WGS84). This position was taken from single beam line D-4023-3a. *Do not concur, obstruction is insignificant amongst surrounding soundings.*



inv_0023

- Sonar Time at Target: 03/23/2007 12:43:33
- Click Position (Lat WGS84): 30.363508024
- Click Position (Lon WGS84): -88.774521099
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 329,465.31
- Click Position (Y): 3,360,401.27
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4023-2.xtf
- Ping Number: 1252
- Range to Target: 17.69 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4023-2
- Area / Block:

Dimensions

Target Height = 0.18 Meters
Target Length: 5.24 Meters
Target Shadow: 0.78 Meters
Target Width: 4.03 Meters

Description: Investigated contact 0023 found.

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Contact 0038

Estimated Least Depth: 4.921ft (C_0038 based on side scan sonar data) *reported*
After tide correction, ELD~5.3ft.

Position: ~~30.391030833° N, 88.878406333° W (WGS84)~~
30-23-27.7109N, 88-52-42.2627W

Time Stamp: 2006-10-11 10:38:13

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 5-foot submerged obstruction at 30.391030833° N, 88.878406333° W (WGS84) *reported*. This position was taken from side scan line C_0038. ***Concur.***

	<p>inv_0038</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/11/2006 10:38:13 • Click Position (Lat WGS84): 30.391030833 • Click Position (Lon WGS84): -88.878406333 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 319,530.62 • Click Position (Y): 3,363,612.98 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\101106\C_0038.XTF • Ping Number: 1484 • Range to Target: 9.87 Meters • Fish Height: 2.31 Meters • Event Number: 0 • Line Name: C_0038 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.40 Meters Target Length: 2.89 Meters Target Shadow: 2.18 Meters Target Width: 1.59 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact</p>
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Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0057

Estimated Least Depth: 8.169ft (C_0057 based on side scan sonar data) *reported*
After tide correction, ELD~8.85ft.

Position: ~~30.369937333° N, 88.802127500° W (WGS84)~~

30-22-11.7743N, 88-48-07.6590W

Time Stamp: 2006-10-10 10:51:08

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 8-foot submerged obstruction at 30.369937333° N, 88.802127500° W (WGS84) *reported*. This position was taken from side scan line C_0057. ***Do not concur due to shoaler obstruction in close proximity.***

	<p>inv_0057</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/10/2006 10:51:08 • Click Position (Lat WGS84): 30.369937333 • Click Position (Lon WGS84): -88.802127500 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 326,823.19 • Click Position (Y): 3,361,155.79 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\101006\C_0057.XTF • Ping Number: 1068 • Range to Target: 23.42 Meters • Fish Height: 3.24 Meters • Event Number: 0 • Line Name: C_0057 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.21 Meters Target Length: 2.94 Meters Target Shadow: 1.33 Meters Target Width: 1.02 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact</p>
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Contact 0058

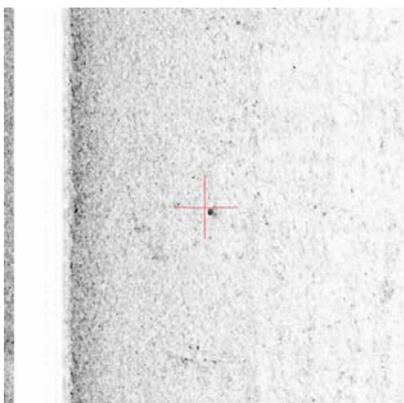
Estimated Least Depth: 7.19ft (D-4058-2 based on side scan sonar data) *reported*

Position: ~~30.369378663° N, 88.809480271° W~~ (WGS84)

30-22-09.7633N, 88-48-34.1291W

Time Stamp: 2007-03-23 15:06:34

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 7-foot submerged obstruction at 30.369378663° N, 88.809480271° W (WGS84) *reported*. This position was taken from side scan line D-4058-2. ***Do not concur, insignificant amongst surrounding soundings.***



inv_0058

- Sonar Time at Target: 03/23/2007 15:06:34
- Click Position (Lat WGS84): 30.369378663
- Click Position (Lon WGS84): -88.809480271
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 326,115.52
- Click Position (Y): 3,361,105.12
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4058-2.xtf
- Ping Number: 1173
- Range to Target: 19.82 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4058-2
- Area / Block:

Dimensions

Target Height = 0.41 Meters
Target Length: 1.15 Meters
Target Shadow: 2.07 Meters
Target Width: 1.80 Meters

Description: Investigated contact 0058 found.

Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0066

Estimated Least Depth: 6.989ft (C_0066 based on side scan sonar data) *reported*

Position: ~~30.370759084° N, 88.800558366° W~~ (WGS84)

30-22-14.7328N, 88-48-02.0102W

Time Stamp: 2006-10-10 11:18:55

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 7-foot submerged obstruction at 30.370759084° N, 88.800558366° W (WGS84) *reported*. This position was taken from side scan line C_0066. **Concur.**

	<p>inv_0066</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/10/2006 11:18:55 • Click Position (Lat WGS84): 30.370759084 • Click Position (Lon WGS84): -88.800558366 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 326,975.45 • Click Position (Y): 3,361,244.47 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\101006\SSS\C_0066.XTF • Ping Number: 1224 • Range to Target: 12.00 Meters • Fish Height: 3.21 Meters • Event Number: 0 • Line Name: C_0066 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.37 Meters Target Length: 2.26 Meters Target Shadow: 1.65 Meters Target Width: 1.89 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact</p>
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Contact 0083

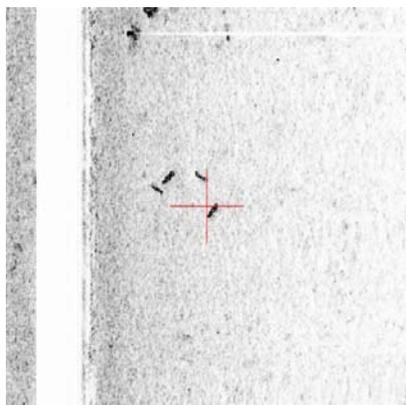
Estimated Least Depth: 6.82ft (D-4083-1 based on side scan sonar data) *reported*

Position: ~~30.376755322° N, 88.808058926° W~~ (WGS84)

30-22-36.3191N, 88-48-29.0102W

Time Stamp: 2007-03-23 15:39:23

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 7-foot submerged obstruction at 30.376755322° N, 88.808058926° W (WGS84) *reported*. This position was taken from side scan line D-4083-1. ***Do not concur, insignificant amongst surrounding soundings.***



inv_0083

- Sonar Time at Target: 03/23/2007 15:39:23
- Click Position (Lat WGS84): 30.376755322
- Click Position (Lon WGS84): -88.808058926
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 326,265.18
- Click Position (Y): 3,361,920.58
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4083-1.xtf
- Ping Number: 582
- Range to Target: 17.30 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4083-1
- Area / Block:

Dimensions

Target Height = 0.22 Meters
Target Length: 3.17 Meters
Target Shadow: 0.92 Meters
Target Width: 0.98 Meters

Description: Investigated contact 0083 found.

Contact 0107

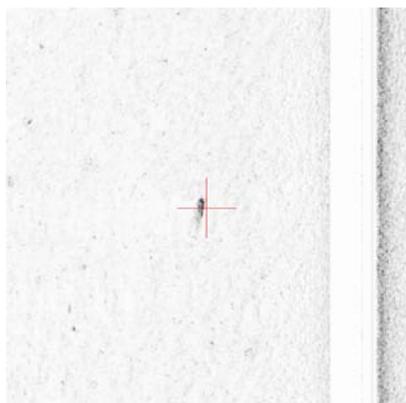
Estimated Least Depth: 3.35ft (D-4107-2 based on side scan sonar data) *reported*
After tide correction, ELD~3.1ft.

Position: ~~30.379270522° N, 88.832007918° W (WGS84)~~

30-22-45.3738N, 88-49-55.2284W

Time Stamp: 2007-04-03 07:36:17

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 3-foot submerged obstruction at 30.379270522° N, 88.832007918° W (WGS84) *reported*. This position was taken from side scan line D-4107-2. *Concur.*



inv_0107

- Sonar Time at Target: 04/03/2007 07:36:17
- Click Position (Lat WGS84): 30.379270522
- Click Position (Lon WGS84): -88.832007918
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 323,968.07
- Click Position (Y): 3,362,236.36
- Acoustic Source File:
O:\061795\field_data\H11619(D)\Beach_Surveyor\040307bs\sss\D-4107-2.xtf
- Ping Number: 1292
- Range to Target: 19.25 Meters
- Fish Height: 4.20 Meters
- Event Number: 2
- Line Name: D-4107-2
- Area / Block:

Dimensions

Target Height = 0.58 Meters
Target Length: 3.12 Meters
Target Shadow: 3.10 Meters
Target Width: 1.30 Meters

Description: Investigated contact 0107 found.

Contact 0114

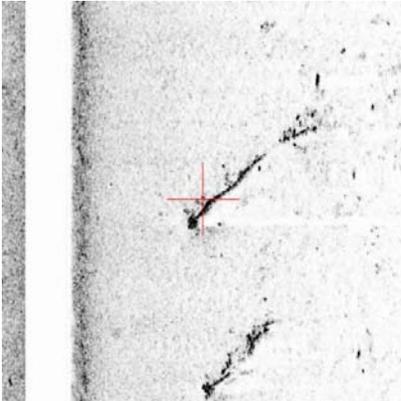
Least Depth: 4.98ft (D-4114-3) *After tide correction, LD=3.31ft.*

Position: ~~30.3797394° N, 88.8416954° W~~ (WGS84)

30-22-47.0622N, 88-50-30.1034W

Time Stamp: 2007-03-24

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 5-foot submerged obstruction at 30.3797394° N, 88.8416954° W (WGS84). This position was taken from single beam line D-4114-3. *Do not concur, insignificant amongst surrounding soundings.*



inv_0114

- Sonar Time at Target: 03/24/2007 12:53:20
- Click Position (Lat WGS84): 30.379725264
- Click Position (Lon WGS84): -88.841647574
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 323,042.48
- Click Position (Y): 3,362,301.79
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTFD-4114-1.xtf
- Ping Number: 881
- Range to Target: 18.17 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4114-1
- Area / Block:

Dimensions

Target Height = 1.49 Meters
Target Length: 14.52 Meters
Target Shadow: 9.51 Meters
Target Width: 1.76 Meters

Description: Investigated contact 0114 found.

Contact 0115

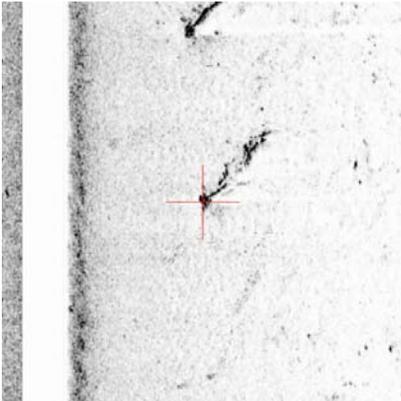
Least Depth: 5.06ft (D-4115-3) *After tide correction, LD=3.31ft.*

Position: ~~30.3797162° N, 88.8414595° W~~ (WGS84)

30-22-46.9787N, 88-50-29.2546W

Time Stamp: 2007-04-24 08:18:59

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 5-foot submerged obstruction at 30.3797162° N, 88.8414595° W (WGS84). This position was taken from single beam line D-4115-3. *Do not concur, insignificant amongst surrounding soundings.*



inv_0115

- Sonar Time at Target: 03/24/2007 12:53:11
- Click Position (Lat WGS84): 30.379719943
- Click Position (Lon WGS84): -88.841400326
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 323,066.24
- Click Position (Y): 3,362,300.81
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4114-1.xtf
- Ping Number: 752
- Range to Target: 18.56 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4114-1
- Area / Block:

Dimensions

Target Height = 0.53 Meters
Target Length: 13.05 Meters
Target Shadow: 2.57 Meters
Target Width: 2.60 Meters

Description: Investigated contact 0115 found.

Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0129

Estimated Least Depth: 5.807ft (C_0129 based on side scan sonar data) *reported*
After tide correction, ELD~9.9ft.

Position: ~~30.387959008° N, 88.857031823° W (WGS84)~~
30-23-16.6524N, 88-51-25.3145W

Time Stamp: 2006-10-11 09:14:36

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 6-foot submerged obstruction at 30.387959008° N, 88.857031823° W (WGS84) *reported*. This position was taken from side scan line C_0129. ***Do not concur, insignificant.***

	<p>inv_0129</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/11/2006 09:14:36 • Click Position (Lat WGS84): 30.387959008 • Click Position (Lon WGS84): -88.857031823 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 321,578.98 • Click Position (Y): 3,363,238.58 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\101106\SSS\C_0129.XTF • Ping Number: 1450 • Range to Target: 15.97 Meters • Fish Height: 3.12 Meters • Event Number: 0 • Line Name: C_0129 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.13 Meters Target Length: 2.03 Meters Target Shadow: 0.75 Meters Target Width: 1.93 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown contact</p>
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Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0130

Estimated Least Depth: 2.526ft (C_0130A based on side scan sonar data) *reported*
After tide correction, ELD~3.5ft.

Position: 30.386992686° N, 88.861220719° W (WGS84)

30-23-13.1737N, 88-51-40.3945W

Time Stamp: 2006-10-11 09:31:47

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 2-foot submerged obstruction at 30.386992686° N, 88.861220719° W (WGS84) *reported*. This position was taken from side scan line C_0130A. ***Do not concur, insignificant.***

	<p>inv_0130a</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/11/2006 09:31:47 • Click Position (Lat WGS84): 30.386992686 • Click Position (Lon WGS84): -88.861220719 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 321,174.68 • Click Position (Y): 3,363,138.08 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\101106\SSS\C_0130A.XTF • Ping Number: 1537 • Range to Target: 3.63 Meters • Fish Height: 1.46 Meters • Event Number: 0 • Line Name: C_0130A • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.33 Meters Target Length: 1.25 Meters Target Shadow: 1.53 Meters Target Width: 0.00 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown contact near charted obstn</p>
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Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0134

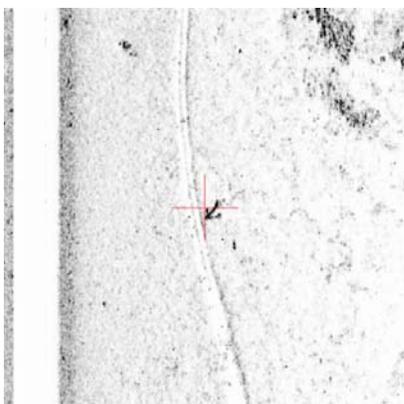
Estimated Least Depth: 3.15ft (D-4134-1 based on side scan sonar data) *reported*

Position: ~~30.387575899° N, 88.867213464° W~~ (WGS84)

30-23-15.2732N, 88-52-01.9686W

Time Stamp: 2007-03-24 14:54:51

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 3-foot submerged obstruction at 30.387575899° N, 88.867213464° W (WGS84) *reported*. This position was taken from side scan line D-4134-1. ***Do not concur, insignificant.***



inv_0134

- Sonar Time at Target: 03/24/2007 14:54:51
- Click Position (Lat WGS84): 30.387575899
- Click Position (Lon WGS84): -88.867213464
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 320,599.87
- Click Position (Y): 3,363,212.21
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4134-1.xtf
- Ping Number: 887
- Range to Target: 19.92 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4134-1
- Area / Block:

Dimensions

Target Height = 0.44 Meters
Target Length: 4.33 Meters
Target Shadow: 2.27 Meters
Target Width: 1.57 Meters

Description: Investigated contact 0134 found.

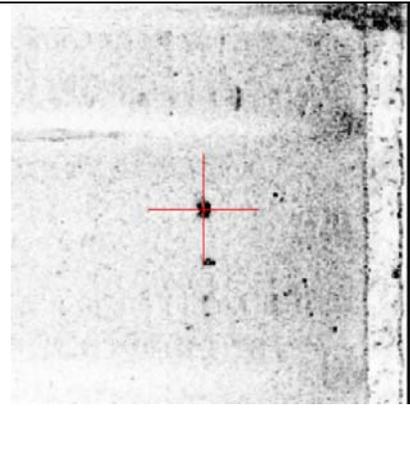
Contact 0140

Estimated Least Depth: 7.972ft (C_0140 based on side scan sonar data) *reported*
After tide correction, ELD~8.8ft.

Position: ~~30.388964500° N, 88.868842167° W (WGS84)~~
30-23-20.2722N, 88-52-07.8319W

Time Stamp: 2006-10-11 10:04:17

Hydrographer’s recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 8-foot submerged obstruction at 30.388964500° N, 88.868842167° W (WGS84) *reported*. This position was taken from side scan line C_0140. ***Do not concur, insignificant.***

	<p>inv_0140</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/11/2006 10:04:17 • Click Position (Lat WGS84): 30.388964500 • Click Position (Lon WGS84): -88.868842167 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 320,445.88 • Click Position (Y): 3,363,368.73 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\101106\SSS\C_0140.XTF • Ping Number: 879 • Range to Target: 14.84 Meters • Fish Height: 3.43 Meters • Event Number: 0 • Line Name: C_0140 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.07 Meters Target Length: 1.90 Meters Target Shadow: 0.32 Meters Target Width: 1.23 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact</p>
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Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0142

Estimated Least Depth: 4.593ft (4060 based on side scan sonar data) *reported*
After tide correction, ELD~5.8ft.

Position: ~~30.389546138° N, 88.876823187° W (WGS84)~~

30-23-22.3660N, 88-52-36.5635W

Time Stamp: 2006-09-28 09:19:42

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 4-foot submerged obstruction at 30.389546138° N, 88.876823187° W (WGS84) *reported*. This position was taken from side scan line 4060. ***Do not concur, insignificant.***

	<p>inv_0142</p> <ul style="list-style-type: none"> • Sonar Time at Target: 09/28/2006 09:19:42 • Click Position (Lat WGS84): 30.389546138 • Click Position (Lon WGS84): -88.876823187 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 319,680.04 • Click Position (Y): 3,363,445.87 • Acoustic Source File: \\luna\ NOAA\061795\H11619(Biloxi)\SSS\4060.XTF • Ping Number: 3125 • Range to Target: 12.69 Meters • Fish Height: 1.94 Meters • Event Number: 0 • Line Name: 4060 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.20 Meters Target Length: 9.79 Meters Target Shadow: 1.46 Meters Target Width: 1.05 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact</p>
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Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0144

Estimated Least Depth: 3.182ft (4060 based on side scan sonar data) *reported*
After tide correction, ELD~6.4ft.

Position: ~~30.389725078° N, 88.863445374° W (WGS84)~~

30-23-23.0104N, 88-51-48.4034W

Time Stamp: 2006-09-28 09:32:46

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 3-foot submerged obstruction at 30.389725078° N, 88.863445374° W (WGS84) *reported*. This position was taken from side scan line 4060. ***Do not concur, insignificant.***

	<p>inv_0144</p> <ul style="list-style-type: none"> • Sonar Time at Target: 09/28/2006 09:32:46 • Click Position (Lat WGS84): 30.389725078 • Click Position (Lon WGS84): -88.863445374 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 320,965.89 • Click Position (Y): 3,363,444.47 • Acoustic Source File: \\luna\ NOAA\061795\H11619(Biloxi)\SSS\4060.XTF • Ping Number: 10930 • Range to Target: 9.35 Meters • Fish Height: 2.22 Meters • Event Number: 0 • Line Name: 4060 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.23 Meters Target Length: 1.71 Meters Target Shadow: 1.19 Meters Target Width: 0.78 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact</p>
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Contact 0146

Estimated Least Depth: 3.64ft (D-4146-1 based on side scan sonar data) *reported*
After tide correction, ELD~3.5ft.

Position: 30.381704356° N, 88.813451461° W (WGS84)

30-22-54.1358N, 88-48-48.4254W

Time Stamp: 2007-03-25 14:30:28

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 3-foot submerged obstruction at 30.381704356° N, 88.813451461° W (WGS84) *reported*. This position was taken from side scan line D-4146-1. ***Concur.***



inv_0146

- Sonar Time at Target: 03/25/2007 14:30:28
- Click Position (Lat WGS84): 30.381704356
- Click Position (Lon WGS84): -88.813451461
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 325,755.71
- Click Position (Y): 3,362,477.43
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4146-1.xtf
- Ping Number: 880
- Range to Target: 23.81 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4146-1
- Area / Block:

Dimensions

Target Height = 0.19 Meters
Target Length: 6.31 Meters
Target Shadow: 1.06 Meters
Target Width: 0.86 Meters

Description: Investigated contact 0146 found.

Contact 0156

Least Depth: 5.52ft (D-4156-3)

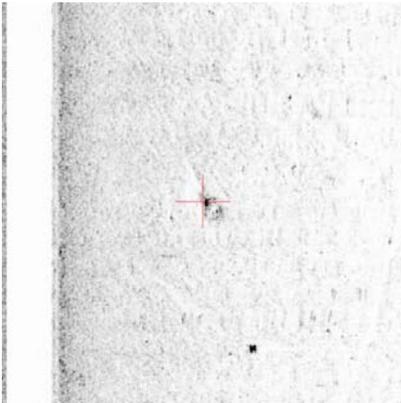
After tide correction, LD=3.73ft.

Position: ~~30.3894804° N, 88.8183584° W (WGS84)~~

30-23-22.1298N, 88-49-06.0906W

Time Stamp: 2007-03-25 11:07:12

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 5-foot submerged obstruction at 30.3894804° N, 88.8183584° W (WGS84). This position was taken from single beam line D-4156-3. *Do not concur due to shoaler obstruction in close proximity.*



inv_0156

- Sonar Time at Target: 03/25/2007 15:46:04
- Click Position (Lat WGS84): 30.389467673
- Click Position (Lon WGS84): -88.818376095
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 325,296.27
- Click Position (Y): 3,363,345.52
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTFD-4156-1.xtf
- Ping Number: 1218
- Range to Target: 20.50 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4156-1
- Area / Block:

Dimensions

Target Height = 0.36 Meters
Target Length: 3.55 Meters
Target Shadow: 1.86 Meters
Target Width: 1.80 Meters

Description: Investigated contact 0156 found.

Contact 0159

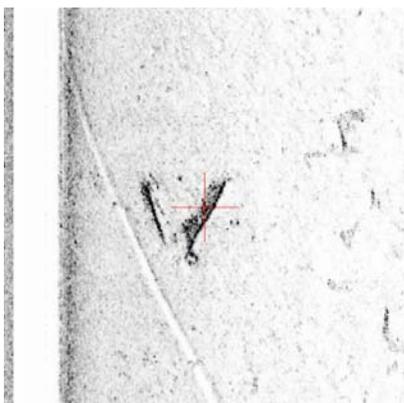
Estimated Least Depth: 4.13ft (D-4156-2 based on aide scan sonar data) *reported*
After tide correction, ELD~2.2ft.

Position: ~~30.390206658° N, 88.817774989° W (WGS84)~~

30-23-24.7441N, 88-49-03.9900W

Time Stamp: 2007-03-25 15:57:18

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 4-foot submerged obstruction at 30.390206658° N, 88.817774989° W (WGS84) *reported*. This position was taken from side scan line D-4156-2. ***Concur.***



inv_0159

- Sonar Time at Target: 03/25/2007 15:57:18
- Click Position (Lat WGS84): 30.390206658
- Click Position (Lon WGS84): -88.817774989
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 325,355.35
- Click Position (Y): 3,363,426.50
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4156-2.xtf
- Ping Number: 888
- Range to Target: 19.92 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4156-2
- Area / Block:

Dimensions

Target Height = 0.54 Meters
Target Length: 11.28 Meters
Target Shadow: 2.86 Meters
Target Width: 2.07 Meters

Description: Investigated contact 0159 found.



Contact 0211

Estimated Least Depth: 1.673ft (C_0211A based on side scan sonar data) *reported*
After tide correction, ELD~3.77ft.

Position: ~~30.395035843° N, 88.852401688° W (WGS84)~~
30-23-42.1289N, 88-51-08.6461W

Time Stamp: 2006-10-11 08:07:14

Hydrographer’s recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 1-foot submerged obstruction at 30.395035843° N, 88.852401688° W (WGS84) *reported*. This position was taken from side scan line C_0211A. ***Do not concur, insignificant.***

	<p>inv_0211a</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/11/2006 08:07:14 • Click Position (Lat WGS84): 30.395035843 • Click Position (Lon WGS84): -88.852401688 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 322,036.75 • Click Position (Y): 3,364,015.71 • Acoustic Source File: O:\061795\H11619(Biloxi)\SSS\C_0211A.XTF • Ping Number: 1470 • Range to Target: 4.56 Meters • Fish Height: 1.70 Meters • Event Number: 0 • Line Name: C_0211A • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.19 Meters Target Length: 1.09 Meters Target Shadow: 0.64 Meters Target Width: 0.84 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact</p>
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Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0215

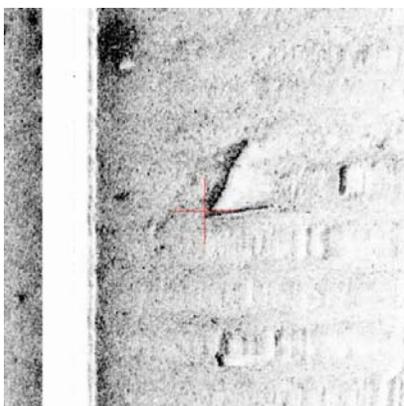
Least Depth: 7.22ft (D-4215-3a) *After tide correction, LD=5.764ft.*

Position: ~~30.3959334° N, 88.8376959° W~~ (WGS84)

30-23-45.3606N, 88-50-15.7056W

Time Stamp: 2007-03-26 09:08:02

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as an 7-foot submerged obstruction at 30.3959334° N, 88.8376959° W (WGS84). This position was taken from single beam line D-4215-3a. *Do not concur, shoaler obstruction in close proximity.*



inv_0215

- Sonar Time at Target: 03/26/2007 13:44:23
- Click Position (Lat WGS84): 30.395932745
- Click Position (Lon WGS84): -88.837709149
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 323,450.14
- Click Position (Y): 3,364,092.12
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTFD-4215-1.xtf
- Ping Number: 418
- Range to Target: 16.33 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4215-1
- Area / Block:

Dimensions

Target Height = 1.17 Meters
Target Length: 11.28 Meters
Target Shadow: 6.08 Meters
Target Width: 1.36 Meters

Description: Investigated contact 0215 found.

Contact 0216

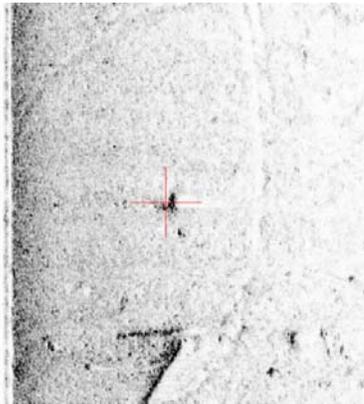
Least Depth: 6.33ft (D-4216-3a) *After tide correction, LD=4.81ft.*

Position: ~~30.3958521° N, 88.8378717° W~~ (WGS84)

30-23-45.0676N, 88-50-16.3385W

Time Stamp: 2007-03-26 09:19:39

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 6-foot submerged obstruction at 30.3958521° N, 88.8378717° W (WGS84). This position was taken from single beam line D-4216-3a. *Do not concur, insignificant amongst surrounding depths.*



inv_0216

- Sonar Time at Target: 03/26/2007 13:53:03
- Click Position (Lat WGS84): 30.395871539
- Click Position (Lon WGS84): -88.837857970
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 323,435.73
- Click Position (Y): 3,364,085.57
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4215-2.xtf
- Ping Number: 799
- Range to Target: 21.86 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4215-2
- Area / Block:

Dimensions

Target Height = 0.62 Meters
Target Length: 3.76 Meters
Target Shadow: 3.61 Meters
Target Width: 1.48 Meters

Description: Investigated contact 0216 found.

Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0244

Estimated Least Depth: 0.722ft (C_0244 based on side scan sonar data) *reported*
After tide correction, ELD~1.59ft.

Position: ~~30.398211000° N, 88.843286167° W (WGS84)~~
30-23-53.5596N, 88-50-35.8303W

Time Stamp: 2006-10-10 16:47:10

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 1-foot submerged obstruction at 30.398211000° N, 88.843286167° W (WGS84) *reported*. This position was taken from side scan line C_0244. ***Concur.***

	<p>inv_0244</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/10/2006 16:47:10 • Click Position (Lat WGS84): 30.398211000 • Click Position (Lon WGS84): -88.843286167 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 322,918.37 • Click Position (Y): 3,364,353.38 • Acoustic Source File: O:\061795\H11619(Biloxi)\SSS\C_0244.XTF • Ping Number: 1104 • Range to Target: 6.49 Meters • Fish Height: 1.76 Meters • Event Number: 0 • Line Name: C_0244 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.88 Meters Target Length: 0.83 Meters Target Shadow: 2.21 Meters Target Width: 0.48 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown investigated contact. Appears to be a piling in ruins</p>
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Contact 0252

Estimated Least Depth: 13.22ft (C_0260A based on side scan sonar data) *reported*
After tide correction, ELD~8.59ft.

Position: ~~30.399765833° N, 88.840439667° W~~ (WGS84)
30-23-59.1569N, 88-50-25.5829W

Time Stamp: 2006-10-10 16:10:38

Hydrographer’s recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 13-foot submerged obstruction at 30.399765833° N, 88.840439667° W (WGS84) *reported*. This position was taken from side scan line C_0260A. ***Do not concur, insignificant.***

	<p>inv_0252</p> <ul style="list-style-type: none"> • Sonar Time at Target: 10/10/2006 16:10:38 • Click Position (Lat WGS84): 30.399765833 • Click Position (Lon WGS84): -88.840439667 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 323,194.66 • Click Position (Y): 3,364,521.26 • Acoustic Source File: O:\061795\field_data\H11619(D)\Arlen\101006\C_0260A.XTF • Ping Number: 2569 • Range to Target: 3.25 Meters • Fish Height: 3.91 Meters • Event Number: 0 • Line Name: C_0260A • Area / Block: 	<p>Dimensions</p> <p>Target Height = 0.27 Meters Target Length: 2.54 Meters Target Shadow: 0.42 Meters Target Width: 0.75 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown contact</p>
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Contact 0281

Least Depth: 13.58ft (D-4281-3) *After tide correction, LD=13.235ft.*

Position: ~~30.404031° N, 88.8437615° W~~ (WGS84)

30-24-14.5116N, 88-50-37.5418W

Time Stamp: 2007-04-03 10:01:54

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 13-foot submerged obstruction at 30.404031° N, 88.8437615° W (WGS84). This position was taken from single beam line D-4281-3. *Do not concur, insignificant amongst surrounding soundings.*



inv_0281

- Sonar Time at Target: 04/03/2007 09:45:37
- Click Position (Lat WGS84): 30.404033561
- Click Position (Lon WGS84): -88.843746333
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 322,884.67
- Click Position (Y): 3,364,999.47
- Acoustic Source File:
O:\061795\field_data\H11619(D)\Beach_Surveyor\040307bs\sss\D-4281-2b.xtf
- Ping Number: 912
- Range to Target: 16.72 Meters
- Fish Height: 4.13 Meters
- Event Number: 1
- Line Name: D-4281-2b
- Area / Block:

Dimensions

Target Height = 0.77 Meters
Target Length: 1.07 Meters
Target Shadow: 4.02 Meters
Target Width: 0.00 Meters

Description: Investigated contact 0281 found.

Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0290

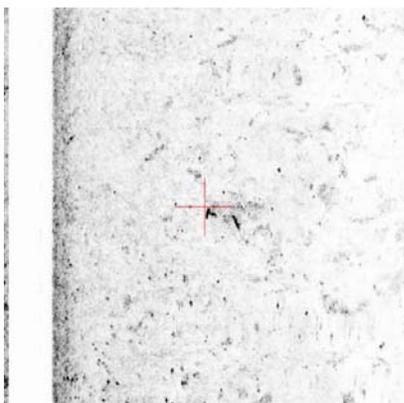
Estimated Least Depth: 2.01ft (D-4290-2 based on side scan sonar data) *reported*

Position: ~~30.382469951° N, 88.856235257° W~~ (WGS84)

30-22-56.8920N, 88-51-22.4471W

Time Stamp: 2007-03-24 13:45:52

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 2-foot submerged obstruction at 30.382469951° N, 88.856235257° W (WGS84) *reported*. This position was taken from side scan line D-4290-2. ***Do not concur, insignificant amongst surrounding depths.***



inv_0290

- Sonar Time at Target: 03/24/2007 13:45:52
- Click Position (Lat WGS84): 30.382469951
- Click Position (Lon WGS84): -88.856235257
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 321,645.55
- Click Position (Y): 3,362,628.90
- Acoustic Source File: O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4290-2.xtf
- Ping Number: 876
- Range to Target: 20.50 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4290-2
- Area / Block:

Dimensions

Target Height = 0.46 Meters
Target Length: 2.17 Meters
Target Shadow: 2.45 Meters
Target Width: 1.57 Meters

Description: Investigated contact 0290 found.

Contact 0299

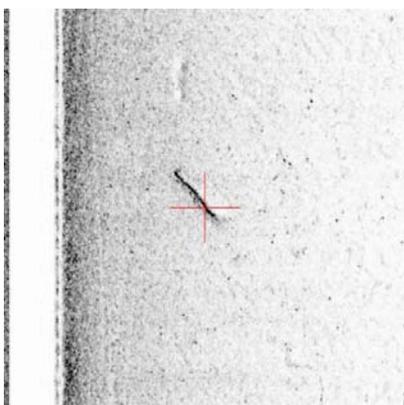
Least Depth: 7.02ft (D-4299-3c) *After tide correction, LD=5.341ft.*

Position: ~~30.3835457° N, 88.8237684° W~~ (WGS84)

30-23-00.7649N, 88-49-25.5662W

Time Stamp: 2007-03-25 10:22:13

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 7-foot submerged obstruction at 30.3835457° N, 88.8237684° W (WGS84). This position was taken from single beam line D-4299-3c. *Do not concur, insignificant amongst surrounding depths.*



inv_0299

- Sonar Time at Target: 03/25/2007 14:53:42
- Click Position (Lat WGS84): 30.383536104
- Click Position (Lon WGS84): -88.823760127
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 324,768.32
- Click Position (Y): 3,362,696.37
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4299-1.xtf
- Ping Number: 700
- Range to Target: 20.41 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4299-1
- Area / Block:

Dimensions

Target Height = 0.28 Meters
Target Length: 8.62 Meters
Target Shadow: 1.39 Meters
Target Width: 0.43 Meters

Description: Investigated contact 0299 found.

Contact 0311

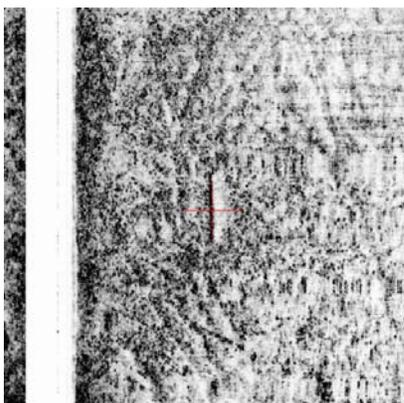
Estimated Least Depth: 4.23ft (D-4311-2 based on side scan sonar data) *reported*
After tide correction, ELD~2.27ft.

Position: ~~30.386337000° N, 88.854658500° W (WGS84)~~

30-23-10.8132N, 88-51-16.7706W

Time Stamp: 2007-03-24 14:21:06

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 4-foot submerged obstruction at 30.386337000° N, 88.854658500° W (WGS84) *reported*. This position was taken from side scan line D-4311-2. *Concur.*



inv_0311

- Sonar Time at Target: 03/24/2007 14:21:06
- Click Position (Lat WGS84): 30.386337000
- Click Position (Lon WGS84): -88.854658500
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 321,804.08
- Click Position (Y): 3,363,055.06
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4311-2.xtf
- Ping Number: 1165
- Range to Target: 18.37 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4311-2
- Area / Block:

Dimensions

Target Height = 0.41 Meters
Target Length: 11.34 Meters
Target Shadow: 1.95 Meters
Target Width: 0.37 Meters

Description: Investigated contact 0311 found.

Contact 0315

Estimated Least Depth: 3.74ft (D-4315-2 based on side scan sonar data) *reported*
After tide correction, ELD~3.32ft.

Position: ~~30.386636042° N, 88.851848155° W (WGS84)~~

30-23-11.8896N, 88-51-06.6535W

Time Stamp: 2007-04-03 10:33:54

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 4-foot submerged obstruction at 30.386636042° N, 88.851848155° W (WGS84) *reported*. This position was taken from side scan line D-4315-2. ***Do not concur, insignificant.***



inv_0315

- Sonar Time at Target: 04/03/2007 10:33:54
- Click Position (Lat WGS84): 30.386636042
- Click Position (Lon WGS84): -88.851848155
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 322,074.71
- Click Position (Y): 3,363,083.78
- Acoustic Source File:
O:\061795\field_data\H11619(D)\Beach_Surveyor\040307bs\sss\D-4315-2.xtf
- Ping Number: 1529
- Range to Target: 16.63 Meters
- Fish Height: 3.97 Meters
- Event Number: 1
- Line Name: D-4315-2
- Area / Block:

Dimensions

Target Height = 0.26 Meters
Target Length: 2.21 Meters
Target Shadow: 1.20 Meters
Target Width: 0.54 Meters

Description: Investigated contact 0315 found.

Contact 0348

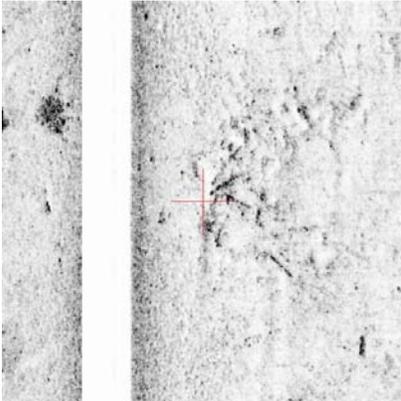
Least Depth: 7.09ft (D-4348-3) *After tide correction, LD=6.145ft.*

Position: ~~30.3906083° N, 88.8730673° W~~ (WGS84)

30-23-26.1902N, 88-52-23.0423W

Time Stamp: 2007-03-26 07:43:15

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. This contact was previously submitted as DTON1a. It is recommended that this contact be charted as a 7-foot submerged obstruction at 30.3906083° N, 88.8730673° W (WGS84). This position was taken from single beam line D-4348-3. *Do not concur, insignificant amongst surrounding soundings.*



inv_0348

- Sonar Time at Target: 03/26/2007 12:35:31
- Click Position (Lat WGS84): 30.390619776
- Click Position (Lon WGS84): -88.873054192
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 320,044.18
- Click Position (Y): 3,363,558.88
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTFD-4348-2.xtf
- Ping Number: 863
- Range to Target: 11.18 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4348-2
- Area / Block:

Dimensions

Target Height = 1.16 Meters
Target Length: 7.70 Meters
Target Shadow: 4.28 Meters
Target Width: 2.03 Meters

Description: Investigated contact 0348 found.

Contact 0350

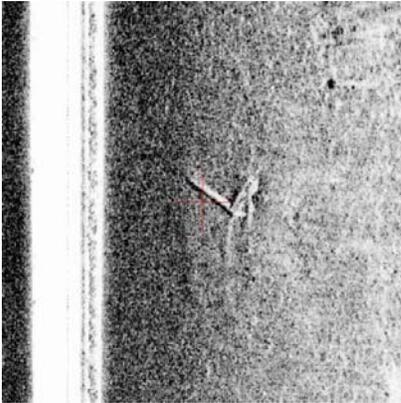
Least Depth: 14.11ft (D-4350-1) *After tide correction, LD=12.97ft.*

Position: ~~30.3902785° N, 88.8828583° W~~ (WGS84)

30-23-25.0030N, 88-52-58.2902W

Time Stamp: 2007-03-26 08:13:32

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 14-foot submerged obstruction at 30.3902785° N, 88.8828583° W (WGS84). This position was taken from single beam line D-4350-1. *Do not concur, LD insignificant.*



inv_0350

- Sonar Time at Target: 03/26/2007 12:57:41
- Click Position (Lat WGS84): 30.390258185
- Click Position (Lon WGS84): -88.882840586
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 319,103.11
- Click Position (Y): 3,363,534.39
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4350-1.xtf
- Ping Number: 974
- Range to Target: 16.91 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4350-1
- Area / Block:

Dimensions

Target Height = 0.49 Meters
Target Length: 8.15 Meters
Target Shadow: 2.17 Meters
Target Width: 1.16 Meters

Description: Investigated contact 0350 found.

Contact 0371

Estimated Least Depth: 4.72ft (D-4371-1 based on side scan sonar data) *reported*
After tide correction, ELD~3.91ft.

Position: ~~30.391269997° N, 88.875610834° W (WGS84)~~

30-23-28.5720N, 88-52-32.1989W

Time Stamp: 2007-04-03 11:19:22

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 5-foot submerged obstruction at 30.391269997° N, 88.875610834° W (WGS84) *reported*. This position was taken from side scan line D-4371-1. ***Do not concur, insignificant amongst surrounding depths.***



inv_0371

- Sonar Time at Target: 04/03/2007 11:19:22
- Click Position (Lat WGS84): 30.391269997
- Click Position (Lon WGS84): -88.875610834
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 319,799.70
- Click Position (Y): 3,363,635.02
- Acoustic Source File:
O:\061795\field_data\H11619(D)\Beach_Surveyor\040307bs\sss\D-4371-1.xtf
- Ping Number: 1373
- Range to Target: 20.03 Meters
- Fish Height: 3.97 Meters
- Event Number: 1
- Line Name: D-4371-1
- Area / Block:

Dimensions

- Target Height = 0.46 Meters
- Target Length: 2.86 Meters
- Target Shadow: 2.64 Meters
- Target Width: 1.60 Meters

Description: Investigated contact 0371 found.

Contact 0435

Estimated Least Depth: 5.21ft (D-4435-1 based on side scan sonar data) *reported*
After tide correction, ELD~3.47ft.

Position: 30.402183246° N, 88.849510287° W (WGS84)

30-24-07.8595N, 88-50-58.2371W

Time Stamp: 2007-03-24 15:45:04

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 5-foot submerged obstruction at 30.402183246° N, 88.849510287° W (WGS84) *reported*. This position was taken from side scan line D-4458-1. *Do not concur, insignificant amongst surrounding depths.*



inv_0435

- Sonar Time at Target: 03/24/2007 15:45:04
- Click Position (Lat WGS84): 30.402183246
- Click Position (Lon WGS84): -88.849510287
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 322,327.52
- Click Position (Y): 3,364,803.41
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4435-1.xtf
- Ping Number: 612
- Range to Target: 26.72 Meters
- Fish Height: 4.43 Meters
- Event Number: 2
- Line Name: D-4435-1
- Area / Block:

Dimensions

Target Height = 0.31 Meters
Target Length: 4.23 Meters
Target Shadow: 2.06 Meters
Target Width: 0.99 Meters

Description: Investigated contact 0435 found.

Contact 0458

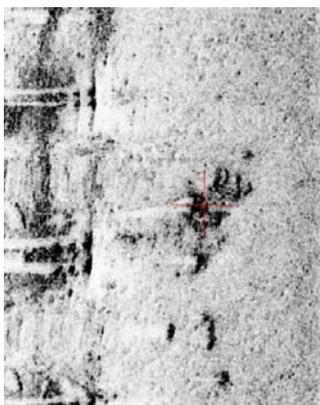
Estimated Least Depth: 5.58ft (D-4458-1 based on side scan sonar data) *reported*
After tide correction, ELD~4.19ft.

Position: ~~30.409658908° N, 88.847763833° W~~ (WGS84)

30-24-34.7720N, 88-50-51.9497W

Time Stamp: 2007-03-23 16:45:42

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 5-foot submerged obstruction at 30.409658908° N, 88.847763833° W (WGS84) *reported*. This position was taken from side scan line D-4458-1. *Do not concur, shoaler obstruction in close proximity.*



inv_0458b

- Sonar Time at Target: 03/23/2007 16:45:42
- Click Position (Lat WGS84): 30.409658908
- Click Position (Lon WGS84): -88.847763833
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 322,508.85
- Click Position (Y): 3,365,629.30
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTFD-4458-1.xtf
- Ping Number: 663
- Range to Target: 18.66 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4458-1
- Area / Block:

Dimensions

Target Height = 0.80 Meters
Target Length: 5.90 Meters
Target Shadow: 4.20 Meters
Target Width: 4.58 Meters

Description: Investigated contact 0458 found.

Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0460

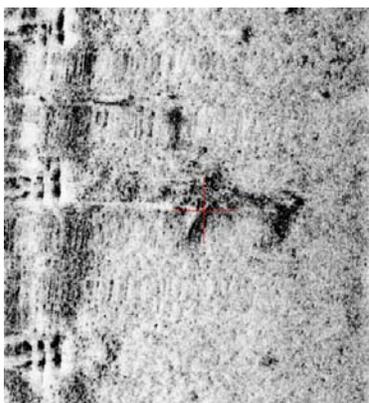
Estimated Least Depth: 4.53ft (D-4460-1 based on side scan sonar data) *reported*
After tide correction, ELD~3.00ft.

Position: 30.410160566° N, 88.846448733° W (WGS84)

30-24-36.5782N, 88-50-47.2153W

Time Stamp: 2007-03-23 16:36:30

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 4-foot submerged obstruction at 30.410160566° N, 88.846448733° W (WGS84) *reported*. This position was taken from side scan line D-4460-1. ***Concur.***



inv_0460

- Sonar Time at Target: 03/23/2007 16:36:30
- Click Position (Lat WGS84): 30.410160566
- Click Position (Lon WGS84): -88.846448733
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 322,636.11
- Click Position (Y): 3,365,682.84
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4460-1.xtf
- Ping Number: 763
- Range to Target: 24.78 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4460-1
- Area / Block:

Dimensions

Target Height = 1.22 Meters
Target Length: 10.07 Meters
Target Shadow: 9.59 Meters
Target Width: 4.68 Meters

Description: Investigated contact 0460 found.

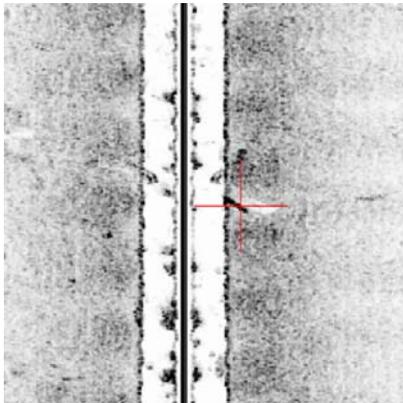
Contact 0471

Estimated Least Depth: 7.15ft (C_0057A based on side scan sonar data) *reported*
After tide correction, ELD~6.18ft.

Position: ~~30.370276833° N, 88.802276833° W (WGS84)~~
30-22-12.9965N, 88-48-08.1965W

Time Stamp: 2007-10-10 10:57:16

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as an 7-foot submerged obstruction at 30.370276833° N, 88.802276833° W (WGS84) *reported*. This position was taken from side scan line C_0057A. ***Concur.***



inv_0471

- Sonar Time at Target: 10/10/2006 10:57:16
- Click Position (Lat WGS84): 30.370276833
- Click Position (Lon WGS84): -88.802276833
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 326,809.44
- Click Position (Y): 3,361,193.65
- Acoustic Source File:
O:\061795\field_data\H11619(D)\Arlen\101006\C_0057A.XTF
- Ping Number: 648
- Range to Target: 1.57 Meters
- Fish Height: 3.36 Meters
- Event Number: 0
- Line Name: C_0057A
- Area / Block:

Dimensions

Target Height = 1.12 Meters
Target Length: 2.68 Meters
Target Shadow: 2.23 Meters
Target Width: 0.86 Meters

Magnetic Anomaly Assoc

Avoidance Criteria

Classification 1:
Classification 2:
Description: unknown
uninvestigated contact

Contact 0820

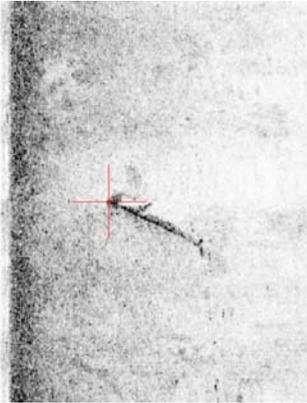
Least Depth: 9.64ft (D-4820-3) *After tide correction, LD=8.57ft.*

Position: ~~30.3039511° N, 88.7127278° W~~ (WGS84)

30-18-14.2243N, 88-42-45.8201W

Time Stamp: 2007-03-25 08:07:21

Hydrographer's recommendations: This contact has been marked as a designated sounding within the H11617 Caris project submitted in conjunction with this report. It is recommended that this contact be charted as a 9-foot submerged obstruction at 30.3039511° N, 88.7127278° W (WGS84). This position was taken from single beam line D-4820-3. *Do not concur, insignificant amongst surrounding depths.*



inv_0820

- Sonar Time at Target: 03/25/2007 13:01:48
- Click Position (Lat WGS84): 30.303944164
- Click Position (Lon WGS84): -88.712702006
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 335,307.43
- Click Position (Y): 3,353,707.89
- Acoustic Source File:
O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4820-2.xtf
- Ping Number: 819
- Range to Target: 15.45 Meters
- Fish Height: 4.43 Meters
- Event Number: 1
- Line Name: D-4820-2
- Area / Block:

Dimensions

Target Height = 1.59 Meters
Target Length: 13.52 Meters
Target Shadow: 9.03 Meters
Target Width: 1.15 Meters

Description: Investigated contact 0820 found.

Contact 0827

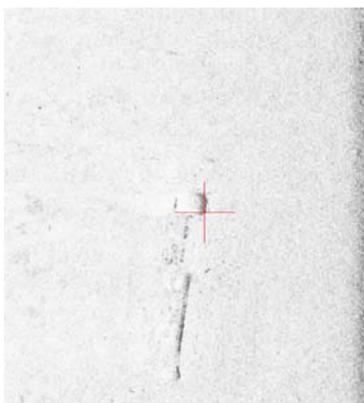
Estimated Least Depth: 6.73ft (D-4827-1 based on side scan sonar data) *reported*
After tide correction, ELD~6.70ft.

Position: ~~30.358774692° N, 88.875250474° W (WGS84)~~

30-21-31.5889N, 88-52-30.9018W

Time Stamp: 2007-04-03 12:49:11

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 7-foot submerged obstruction at 30.358774692° N, 88.875250474° W (WGS84) *reported*. This position was taken from side scan line D-4827-1. ***Concur.***



inv_0827

- Sonar Time at Target: 04/03/2007 12:49:11
- Click Position (Lat WGS84): 30.358774692
- Click Position (Lon WGS84): -88.875250474
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 319,774.70
- Click Position (Y): 3,360,032.54
- Acoustic Source File:
O:\061795\field_data\H11619(D)\Beach_Surveyor\040307bs\sss\D-4827-1.xtf
- Ping Number: 1627
- Range to Target: 23.92 Meters
- Fish Height: 3.97 Meters
- Event Number: 2
- Line Name: D-4827-1
- Area / Block:

Dimensions

Target Height = 0.55 Meters
 Target Length: 2.78 Meters
 Target Shadow: 3.92 Meters
 Target Width: 1.13 Meters

Description: Investigated contact 0827 found.

Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0854

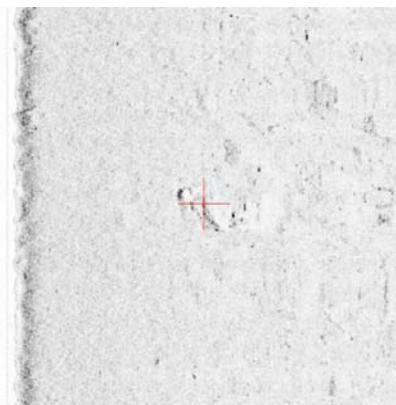
Estimated Least Depth: 6.69ft (D-4854-2 based on side scan sonar data) *reported*
After tide correction, ELD~6.49ft.

Position: ~~30.374731420° N, 88.889928333° W~~ (WGS84)

30-22-29.0330N, 88-53-23.7419W

Time Stamp: 2007-04-03 12:20:07

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 6-foot submerged obstruction at 30.374731420° N, 88.889928333° W (WGS84) *reported*. This position was taken from side scan line D-4854-2. ***Concur.***



inv_0854

- Sonar Time at Target: 04/03/2007 12:20:07
- Click Position (Lat WGS84): 30.374731420
- Click Position (Lon WGS84): -88.889928333
- Map Proj: WGS 1984 UTM, Zone 16 North, Meter
- Click Position (X): 318,393.30
- Click Position (Y): 3,361,824.69
- Acoustic Source File:
O:\061795\field_data\H11619(D)\Beach_Surveyor\040307bs\sss\D-4854-2.xtf
- Ping Number: 1388
- Range to Target: 25.77 Meters
- Fish Height: 3.97 Meters
- Event Number: 2
- Line Name: D-4854-2
- Area / Block:

Dimensions

Target Height = 0.36 Meters
Target Length: 6.64 Meters
Target Shadow: 2.66 Meters
Target Width: 1.72 Meters

Description: Investigated contact 0854 found.

Descriptive Report to Accompany Hydrographic Survey H11619



Contact 0880

Estimated Least Depth: 3.28ft (D-4458-1 based on side scan sonar data) *reported*

Position: ~~30.409169116° N, 88.848486204° W~~ (WGS84)

30-24-33.0088N, 88-50-54.5503W

Time Stamp: 2007-03-23 16:45:08

Hydrographer's recommendations: The position and least depth of this contact were determined using side scan sonar data. This contact was previously submitted as DTON 28. Based upon the surrounding survey depths and the target height calculated from the side scan data, it is recommended that this contact be charted as a 3-foot submerged obstruction at

30.409169116° N, 88.848486204° W (WGS84) *reported*. This position was taken from side scan line D-4458-1. ***Concur.***

	<p>Contact0880</p> <ul style="list-style-type: none"> • Sonar Time at Target: 03/23/2007 16:45:08 • Click Position (Lat WGS84): 30.409169116 • Click Position (Lon WGS84): -88.848486204 • Map Proj: WGS 1984 UTM, Zone 16 North, Meter • Click Position (X): 322,438.56 • Click Position (Y): 3,365,576.14 • Acoustic Source File: O:\061795\H11619(Biloxi)\H11619(Sheet D)\XTF\D-4458-1.xtf • Ping Number: 156 • Range to Target: 4.57 Meters • Fish Height: 4.43 Meters • Event Number: 3 • Line Name: D-4458-1 • Area / Block: 	<p>Dimensions</p> <p>Target Height = 1.66 Meters Target Length: 13.95 Meters Target Shadow: 3.81 Meters Target Width: 4.43 Meters</p> <p>Magnetic Anomaly Assoc</p> <p>Avoidance Criteria</p> <p>Classification 1: Classification 2: Description: unknown contact</p>
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D.1.6 DANGER TO NAVIGATION REPORTS

Two DTON reports was issued while collecting this survey. DTONs submitted w as a part of S-J977-KR-CC were numbered chronologically throughout the entire project, rather than on a sheet by sheet basis. A copy of both DTON reports has been included in the appendices of this report. *Concur.*

Description	Latitude	Longitude
DTON 1a	30.390547167° N	088.873078667°W
DTON28	30.409169116° N	088.848486204°W

D.2 ADDITIONAL RESULTS

D.2.1 PRIOR SURVEYS

Comparison with prior surveys was not required under this Task Order. See Section D.1 for comparison to nautical charts. *Concur.*

D.2.2 AIDS TO NAVIGATION

The following Aids to Navigation were present in the survey area at the completion of the fieldwork in June 2007. All were found as charted. *Concur.*

ATON	Latitude	Longitude
Red 14	30.390233°N	88.896701°W
Red 12	30.389239°N	88.899299°W
Red 10	30.387393°N	88.900879°W
Red 8	30.382890°N	88.901690°W
Green Buoy	30.359730°N	88.903714°W
Red 20	30.389564°N	88.876838°W
Green 21	30.390006°N	88.870778°W
Red 22	30.388850°N	88.870488°W
Red 24	30.388077°N	88.864056°W
Red 26	30.387540°N	88.859569°W
Green 27	30.388038°N	88.856252°W
Red 28	30.386755°N	88.852335°W
Red 30	30.386560°N	88.848778°W
Green 31	30.399738°N	88.840536°W

Descriptive Report to Accompany Hydrographic Survey H11619



Red 30	30.398704°N	88.836680°W
Green 29	30.396843°N	88.836805°W
Red 2	30.398163°N	88.827285°W
Green 27	30.395283°N	88.833785°W
Red 24	30.394111°N	88.829881°W
Green 35	30.393510°N	88.831788°W
Red 34	30.390021°N	88.839326°W
Red 24	30.389712°N	88.824685°W
Red 22	30.383063°N	88.816238°W
Green 21	30.381979°N	88.816738°W
Red 20	30.376787°N	88.808349°W
Red 18	30.369891°N	88.799930°W
Green 17	30.368849°N	88.801095°W
Green 13	30.356273°N	88.784847°W
Red 14	30.356314°N	88.783346°W
Red 12	30.347687°N	88.778810°W
Green 9	30.339101°N	88.774528°W
Red 10	30.338970°N	88.776233°W
Green 7	30.328274°N	88.776067°W
Red 8	30.328361°N	88.774713°W
Green 5	30.319021°N	88.776106°W
Red 6	30.318997°N	88.774700°W
Red 16	30.390472°N	88.891650°W
Green 9	30.387301°N	88.901965°W
Red 10	30.387372°N	88.900783°W
Green 5	30.377120°N	88.902901°W
Red 6	30.376512°N	88.901663°W
Red 4	30.368629°N	88.901759°W
Green 1 (Buoy)	30.359651°N	88.903749°W
Red 2	30.359838°N	88.902110°W
Green 13	30.356248°N	88.784843°W
Red 14	30.356332°N	88.783338°W
Forward Range Marker	30.352942°N	88.779252°W
Rear Range Marker	30.342815°N	88.766714°W
Green 9	30.339111°N	88.776202°W
Red 10	30.338942°N	88.774520°W
Green 11	30.347452°N	88.779932°W
Red 16	30.363277°N	88.791588°W
Fl Y 6s 8ft Priv	30.362957°N	88.881908°W
Q R 17ft 4M "WR2"	30.362077°N	88.881653°W
Green 5	30.403122°N	88.857383°W
Green 1	30.406632°N	88.850382°W
Red 32	30.388490°N	88.843030°W



The Following Aid to Navigation was no longer present at the time of the survey.

ATON	Latitude	Longitude
Green 3	30.404091°N	88.856362°W

Concur.

D.2.3 EXISTING INFRASTRUCTURE

The charted Highway 90 and railroad bridges at the north end of Biloxi Bay exist as charted, but are still heavily damaged from Hurricane Katrina, and should be considered dangerous to navigation. *Concur.*

D.2.4 OTHER PERTINENT INFORMATION

The primary purpose of this survey was to provide information concerning the location of hurricane debris along the coast of Mississippi to fisherman, recreational boaters, and others operating vessels in these waters following Hurricane Katrina. *Concur.*

A tidal correction error exists between the dates of October 2nd through October 25th. This error is most likely due to local meteorological events. In an attempt to correct this error a tide zone file applying Gulfport tide readings to the entire survey area was supplied to C&C Technologies by CO-Ops. This tide zone file was only applied to survey H11619. It is called J977KR2007CC_CORP_Analysis_CC.zdf and can be found within the tide folder of the Caris project submitted in conjunction with this report. *Concur.*

Soundings collected as part of project S-J918-KR-06, Area 3, have been resubmitted within the Caris project accompanying this report in addition to the soundings from H11618. *Concur.*



In order to properly create a BASE surface in Caris using the data collected for this survey, alterations had to be made to the standard Caris HIPKernel.dll and the standard Caris DeviceModels.xml.

A revised version of the HIPKernel.dll was provided to C&C Technologies by Caris that would allow for proper conversion of .RAW Winfrog single beam files. Prior to installing this updated .dll, Caris conversions did not properly account for raw sound velocity values, preventing the software from calculating the correct TPE value.

The DeviceModels.xml had to be edited to include the Odom Hydrotac sounder that was used by all survey vessels throughout the survey.

S-57 files were created for all investigated and verified side scan sonar contacts. All contacts marked as designated soundings in the Caris project were included in the S-57 file H11619_DesignatedSoundings.000. Contacts with least depths found using side scan sonar were included in the file H11619_EstLeastDepths.000. The S-57 file H11619_DTONs.000 contains DTON 1a and DTON 28. *Concur.*



LETTER OF APPROVAL

REGISTRY NUMBER H11619

This report and the accompanying smooth sheet are respectfully submitted.

Field operations contributing to the accomplishment of the survey H11619 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and smooth sheet have been closely reviewed and are considered complete and adequate as per the Statement of Work.

This report is meant to be accompanied by the Data Acquisition and Processing Report for project S-J977-KR-CC revised and submitted June, 2007.

Joseph Burke
Project Manager
C&C Technologies
June, 2007

ABSTRACT OF TIMES OF HYDROGRAPHY

Project: S-J977_KR-CC

Registry No.: H11619

Contractor Name: C & C Technologies, Inc.

Date: April 2007

Inclusive Dates: September 28, 2006 to April 3, 2007

Sheet Letter: D

Survey Data was collected during the daylight hours of the following days

Julian Day	Vessel		Year
256	Arlen		2006
257	Arlen		2006
258	Arlen		2006
259	Arlen		2006
260	Arlen		2006
261	Arlen		2006
264	Arlen		2006
268	Arlen		2006
269	Arlen		2006
270	Arlen		2006
271	Arlen	High Roller	2006
272	Arlen	High Roller	2006
273	Arlen	High Roller	2006
274	Arlen	High Roller	2006
275	Arlen	High Roller	2006
276	Arlen	High Roller	2006
278	Arlen	High Roller	2006
279	Arlen	High Roller	2006
280	Arlen		2006
281	Arlen	High Roller	2006
282	Arlen	High Roller	2006
283	Arlen	High Roller	2006
284	Arlen	High Roller	2006
285	Arlen	High Roller	2006
291		High Roller	2006
292		High Roller	2006
293		High Roller	2006
294		High Roller	2006
295		High Roller	2006
297		High Roller	2006

13-Sep-06

Julian Day	Vessel		Year
298		High Roller	2006
82			Hydro 2007
83			Hydro 2007
84			Hydro 2007
85			Hydro 2007
93			Beach 2007

NEW YEAR

3-Apr-07

APPENDIX I
DANGER TO NAVIGATION REPORTS

Report of Danger to Navigation

State: Mississippi
General Locality: Mississippi Sound
Sublocality: Biloxi Bay, MS
Date: 12/11/06
NOAA Survey: S-J977-KR-06

Charts Affected

Number	Edition	Date	Scale
11374_2	33	10/2005	1:40,000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1	Submerged obstruction	Debris	2.38m	30° 23.43283' N(WGS84) 30-23-26.1899N	088° 52.38472' W(WGS84) 088-52-23.0423W	-----

1 – Dangers to Navigation

1) Submerged obstruction – Biloxi Bay

Danger to Navigation

Survey Summary

Survey Position: $30^{\circ} 23.43283' N$ (WGS84), $088^{\circ} 52.38472' W$ (WGS84)

~~30-23-26.1899N, 088-52-23.0423W~~

Least Depth: Approx. 7.8ft *After tide correction, LD=6.14ft.*

Timestamp: 14:53:51

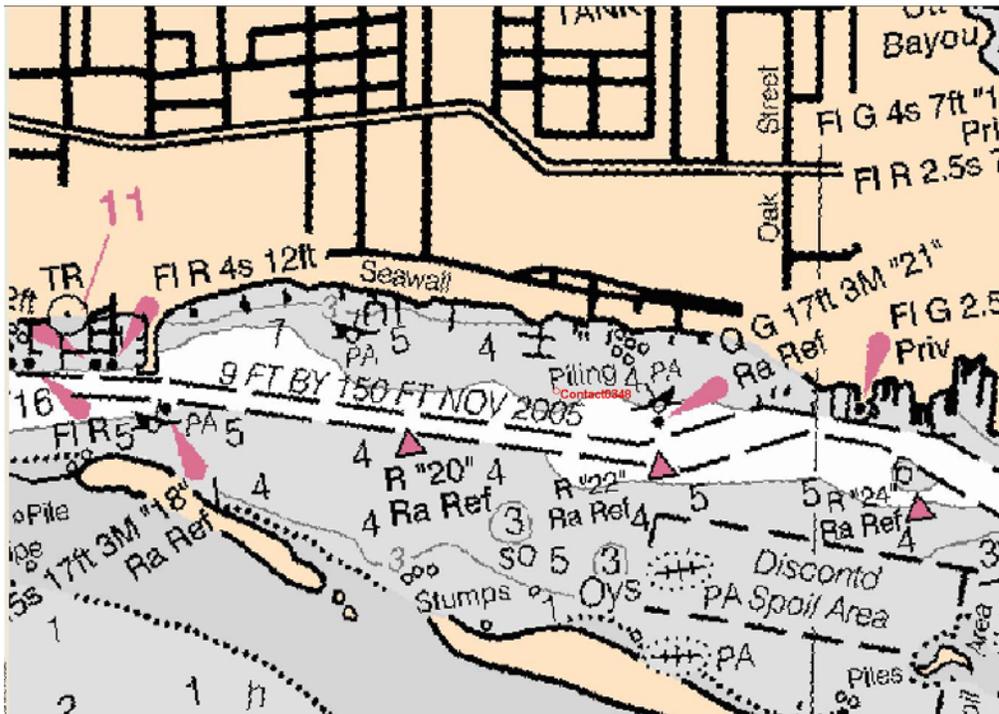
Survey Line: 4319A.xtf

Chart Affected: 11374_2

Remarks:

This feature is an uncharted submerged obstruction. It appears to be a pile of debris. It is being submitted as a DTON because of its proximity to a heavily traveled channel, and the possibility that it is taller than the currently charted depths in its vicinity. Survey lines do not appear to have passed directly over the shoalest point of the obstruction.

Feature Correlation



Hydrographer Recommendations

The Hydrographer recommends that this feature be charted as a submerged obstruction.
After tide correction, the obstruction is no longer significant. Recommend to remove the obstruction from the chart.

Cartographically-Rounded depth (Affected charts)

S-57 attributes

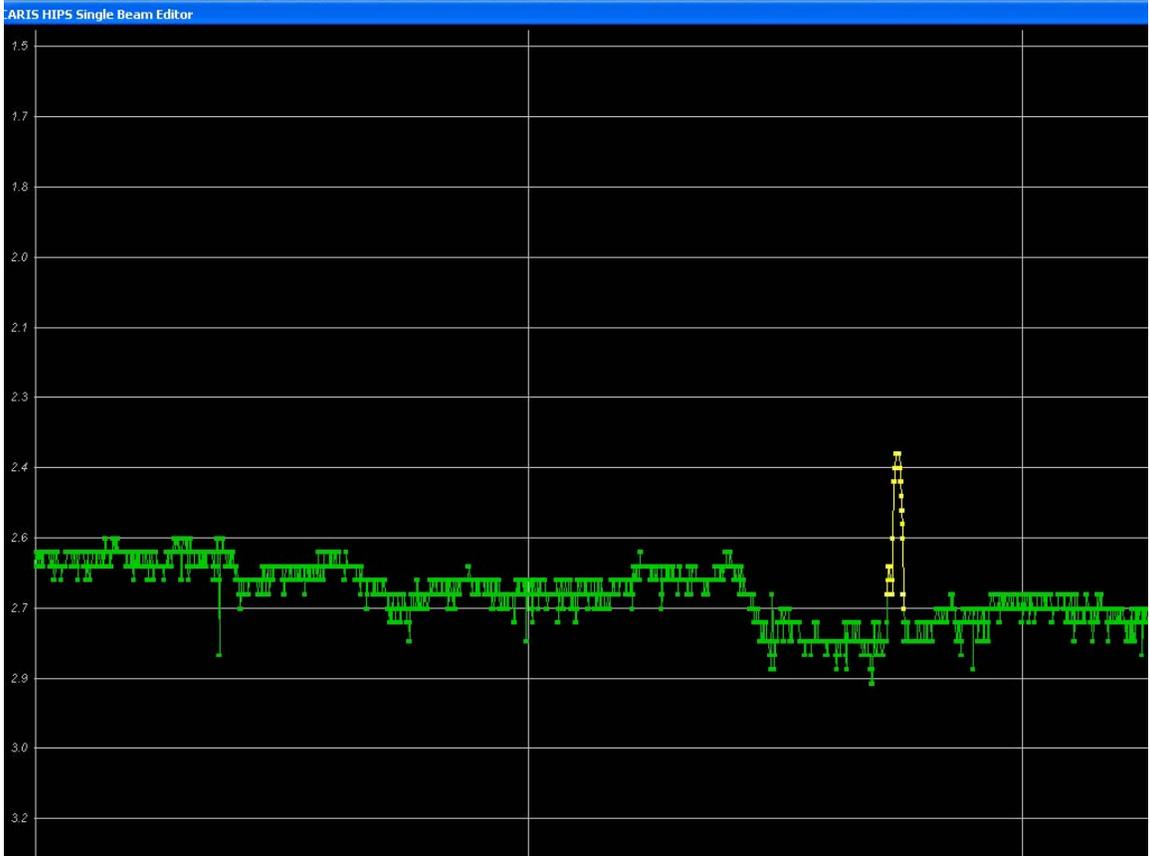
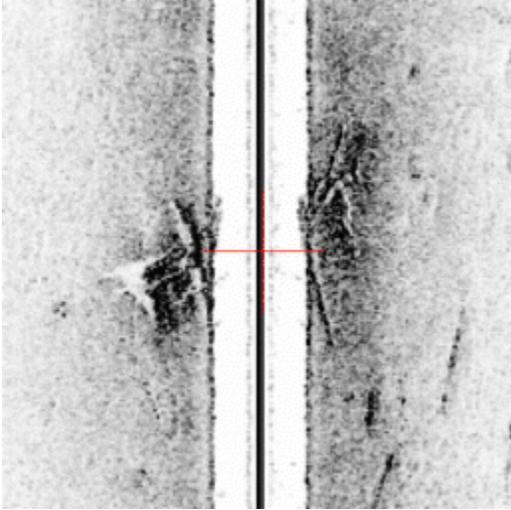
Geo Object 1: submerged obstruction

Attributes: INFORM: This feature is an uncharted submerged obstruction. It appears to be a pile of debris. The listed position is based upon side scan sonar data.

Valsou:

WATLEV:

Feature Images



Report of Danger to Navigation

State: Mississippi
General Locality: Mississippi Sound
Sublocality: Between Biloxi and Belle Fontaine Point
Date: 05/08/07
NOAA Survey: S-J977-KR-CC
H11619

Charts Affected

Number	Edition	Date	Scale
11372	32	02/2006	1:40,000

Features

No.	Name	Feature Type	Estimated Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
28	Submerged Obstruction	Submerged Obstruction	3.28 ft (Estimated)	30.409169116°N (WGS84) 30-24-33.0088N	88.848486204° W (WGS84) 88-50-54.5503W	-----

Danger to Navigation

Survey Summary

Survey Position 30.409169116° N, 088.848486204° W (WGS84)

30-24-33.0088N, 088-50-54.5503W

Estimated Least Depth: 3.28 ft (Estimated)

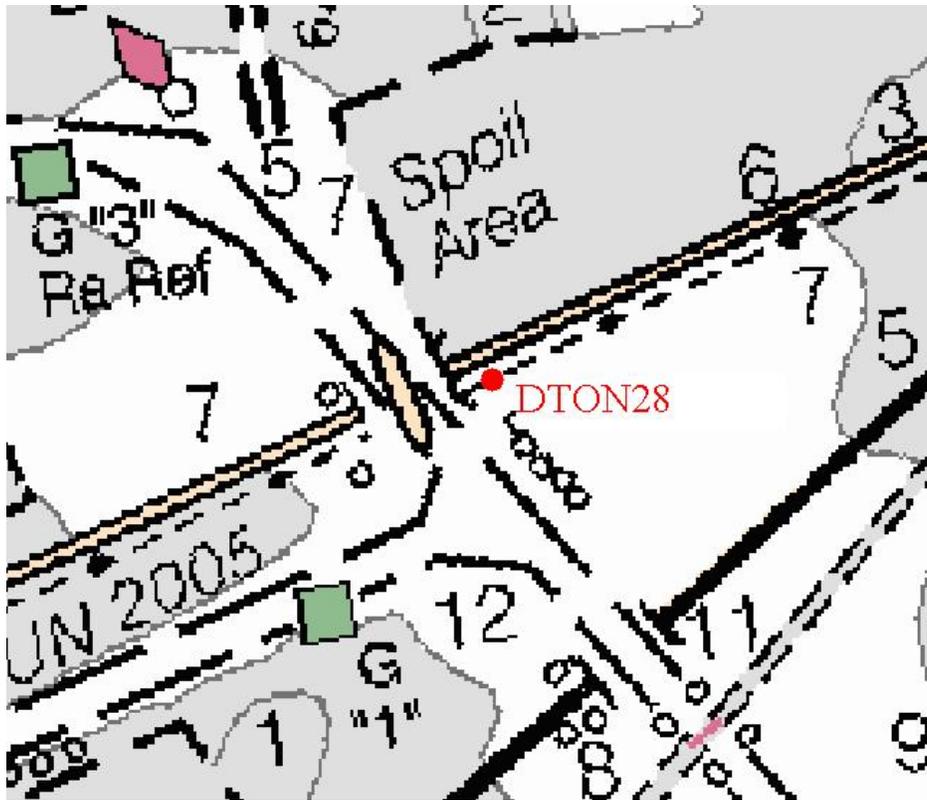
Timestamp 03/23/2007 16:45:08 (D-4458-1)

Chart Affected: 11372

Remarks:

This feature is an uncharted 3-foot submerged obstruction. This least depth was calculated using a combination of a side scan sonar estimated height and tide corrected single beam sonar soundings collected in close proximity to this feature. This contact was identified while investigating obstructions along the Biloxi Bay railroad bridge. It will be submitted as contact number 0880 within the final report for survey H11619. It is recommended that a 3-foot submerged obstruction be charted at 30.409169116° N, 088.848486204° W (WGS84). ***30-24-33.0088N, 088-50-54.5503W***

Feature Correlation

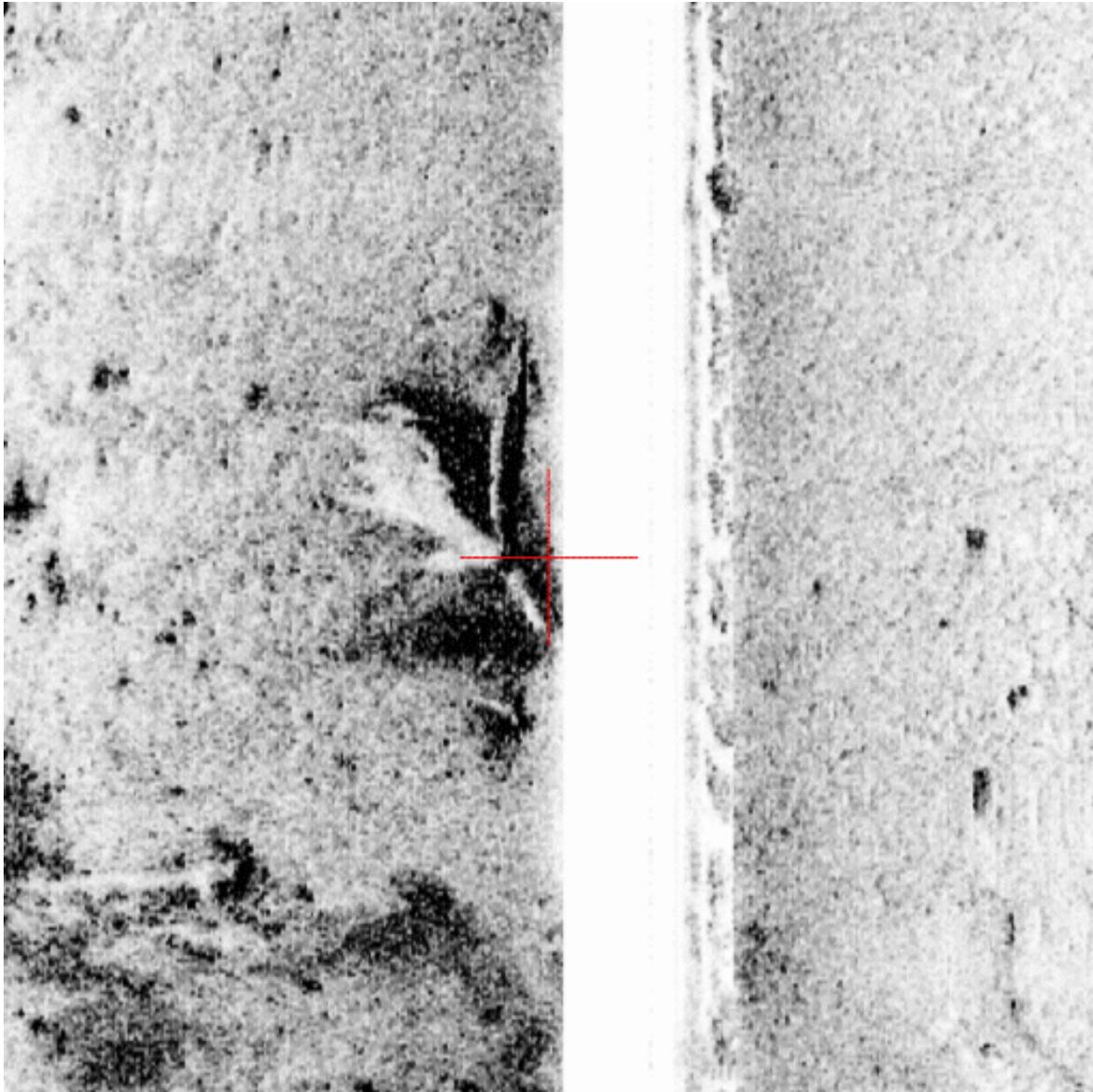


Hydrographer Recommendations

The Hydrographer recommends that this feature be charted as a 3-foot submerged obstruction at ~~30.409169116° N, 088.848486204° W~~ (WGS84).

30-24-33.0088N, 088-50-54.5503W. Concur.

Feature Images



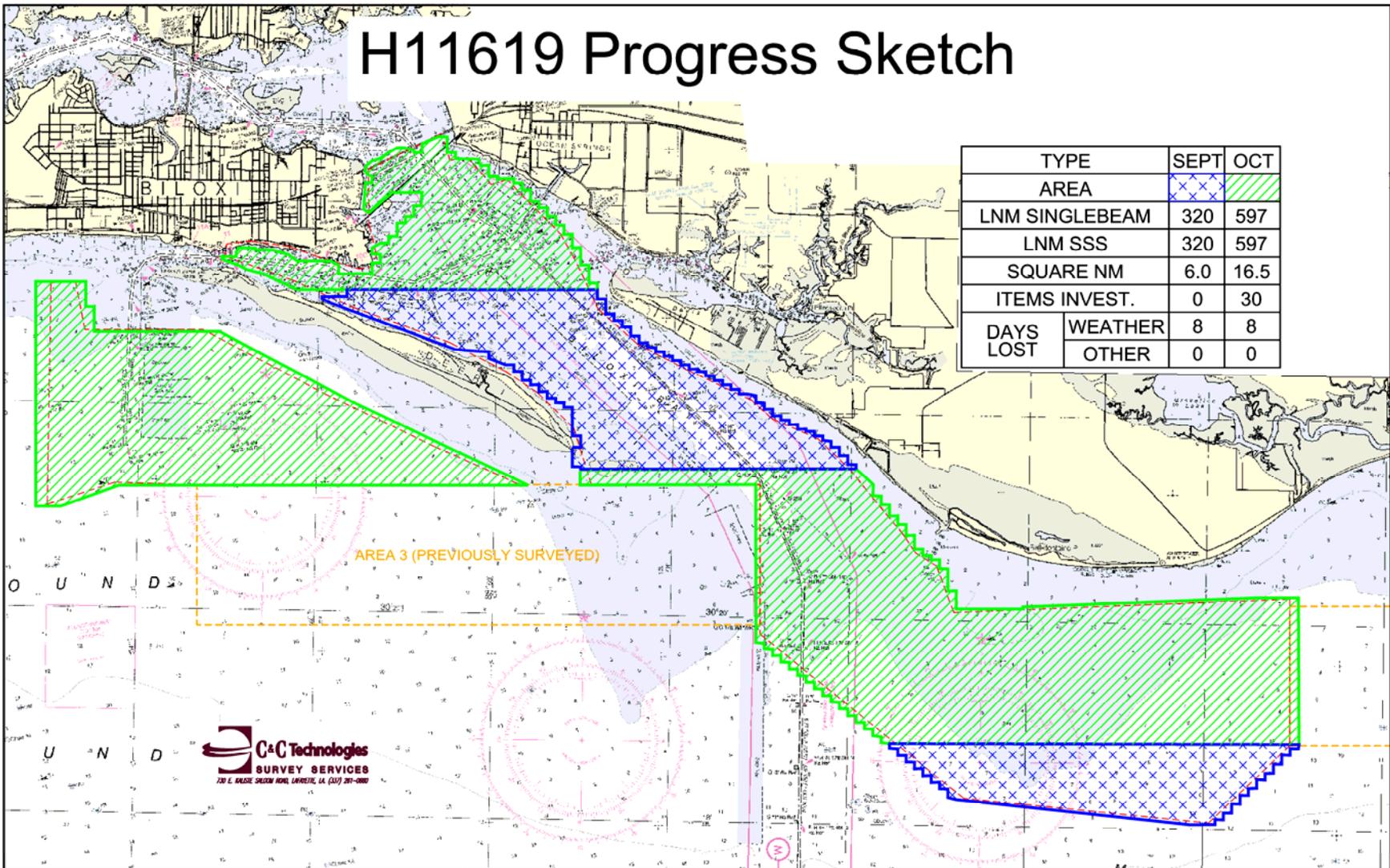
APPENDIX II
LIST OF GEOGRAPHIC NAMES

No new geographic names were found within the survey area. No corrections to the currently charted geographic names within the survey area are needed.

APPENDIX III
PROGRESS SKETCH

H11619 Progress Sketch

TYPE		SEPT	OCT
AREA			
LNM SINGLEBEAM		320	597
LNM SSS		320	597
SQUARE NM		6.0	16.5
ITEMS INVEST.		0	30
DAYS LOST	WEATHER	8	8
	OTHER	0	0



C&C Technologies
SURVEY SERVICES
 700 E. WALSH STREET, SUITE 100, LAUREL, LA (504) 791-0000

APPENDIX IV
TIDE AND WATER LEVELS

The tidal data applied to all single beam echosounder data was downloaded from the following website:

http://www.tidesandcurrents.noaa.gov/olddata/data_retrieve.shtml?input_code=100111111vwl

All tidal corrections were performed in Caris Hips and Sips 6.1. The tide (.tid) files applied to the data can be found in the TIDE folder located within the Caris project that accompanies this report. In addition to the .tid file, the zone definition file(.zdf), supplied by Co-Ops, can also be found in the TIDE folder.

APPENDIX V
SUPPLEMENTAL SURVEY RECORDS
AND CORRESPONDANCE

H11619 tidal correction error - Thunderbird

File Edit View Go Message Tools Help

Get Mail Write Address Book Reply Reply All Forward Delete Junk Print Stop

Subject: H11619 tidal correction error
From: Joseph Burke <joseph.burke@cctechnol.com>
Date: 5/25/2007 2:38 PM
To: Mosaling, Crescent, Craig Martin, Monica Cisternelli@noaa.gov

All,

After reviewing the data we collected for survey H11619, we have identified what appears to be a tide correction problem. This survey area is located near Biloxi, Ms., and is adjacent to 2 test area surveys we collected over the summer of last year. The tidal correction error appears to affect all data collected between October 2 - October 25, 2006. The .zdf file and .tid files that we used to apply tide correctors are attached to this email.

- The majority of the data displaying this problem lies within tide zones CGM68 and CGM507.
- Zone CGM68 uses the Gulfport Harbor Pier(8745557) as its primary. -Zone CGM507 uses the Pascagoula NOAA lab (8741533) as its primary.
- Other data that we collected in these tide zones earlier in the year does not display any correction error. -Discrepancies of up to .5 meters are present between adjacent lines, and all of the data collected during this time period is deeper than overlapping data that was collected during the summer of 2006.
- The same type of error is evident in data collected by two separate boats.

We have tried manipulating the time and range correctors, and reversing the primary and secondary gauges. The word document attached to this email contains a visual representation of this error. I would like to be able to properly correct this data for tide offsets, but do not know what can be done beyond what has already been tried. Any advise you can offer would be appreciated. Thanks,

Joe

--
Joe Burke
NOAA Project Manager
C&C Technologies
(337) 261 0660

[ZONE_DEF_VERSION_2]

[ZONE]
CGM61,7
30.239853, -88.247893
30.234069, -88.272454
30.278119, -88.333123
30.388123, -88.461701
30.409175, -88.407900
30.283161, -88.295355
30.239853, -88.247893

[ZONE]
CGM62,11
30.234069, -88.272454
30.230775, -88.295032
30.228527, -88.311605
30.269986, -88.392190
30.299741, -88.434564
30.322464, -88.461702
30.345181, -88.491696

Attachments: 3977KR2007C...RP_rev.zdf tide_error.doc 8741533.tid 8745557.tid

H11619 tidal correction error - Thunderbird

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Subject: H11619 tidal correction error

From: Joseph Burke <joseph.burke@cttechnol.com>

Date: 5/25/2007 2:38 PM

To: Moeslina, Crescent, Craig Martin, Monica Costello@noaa.gov

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Joe Burke
NOAA Project Manager
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30.345181, -88.491696

Attachments: 3977KR2007C...RP_rev.zdf tide_error.doc 8741533.tid 8745557.tid

[Fwd: Re: H11619 tides] - Thunderbird

File Edit View Go Message Tools Help

Get Mail Write Address Book Reply Reply All Forward Delete Junk Print Stop

Subject: [Fwd: Re: H11619 tides]
From: [Craig Martin <Craig.Martin@noaa.gov>](mailto:Craig.Martin@noaa.gov)
Reply-To: Craig.Martin@noaa.gov
Date: 6/18/2007 8:42 AM
To: [Crescent Moegling](mailto:Crescent.Moegling)
Cc: [Joseph Burke](mailto:Joseph.Burke)

Crescent,

Joe Burke (C&C technologies) contacted me this morning to inform me that the new zoning we provided to him late last week made only small improvements (if any) over the version sent out originally. Unfortunately there is not much more we can do to improve the accuracy of the zoning. That being said, I've told Joe to document the issues (and our discussions) he has seen in the final report. CO-OPS will continue to analyze this in hopes of a solution for future projects in this area.

Thanks,
Craig

----- Original Message -----
Subject: Re: H11619 tides
Date: Fri, 15 Jun 2007 15:26:27 -0400
From: [Craig Martin <Craig.Martin@noaa.gov>](mailto:Craig.Martin@noaa.gov)
Reply-To: Craig.Martin@noaa.gov
Organization: National Ocean Service
To: [Joseph Burke <Joseph.Burke@cctechnol.com>](mailto:Joseph.Burke@cctechnol.com)
CC: [Crescent Moegling <Crescent.Moegling@noaa.gov>](mailto:Crescent.Moegling@noaa.gov), [Castle E Parker <Castle.E.Parker@noaa.gov>](mailto:Castle.E.Parker@noaa.gov), [Scott Croft <scscc@cctechnol.com>](mailto:Scott.Croft@scc@cctechnol.com), [Monica Cisternelli <Monica.Cisternelli@noaa.gov>](mailto:Monica.Cisternelli@noaa.gov)
References: <4671B37A.7030101@cctechnol.com>

Joe,

We have been trying to figure out what the errors you are seeing come from... and we have decided to switch the reference station in a couple of zones to Gulfport (instead of Pascagoula NOAA Lab). After several analysis, including with TCARI, we have come to find that the Pascagoula NOAA Lab station should only be used in a very localized area - hence why we are extending Gulfport east. Future surveys in this area will likely require additional tide gaging to formally address some of the corrections we are unable to completely account for.

I have attached the Mapinfo files for the corrector file and the station file, and .ZDF as well as graphics showing where we would expect you would find tidal correction errors due to meteorology. Ironically enough these periods are almost exactly in between the list of dates that you are seeing discrepancies. We will continue to analyze this issue, and may ask you further questions to get the hydrographers point of view and expertise so that this can be avoided in the future. In the mean time, please apply the new zoning and see if this clears up what you are seeing.

The Gulf of Mexico, with its very shallow basins easily affected with

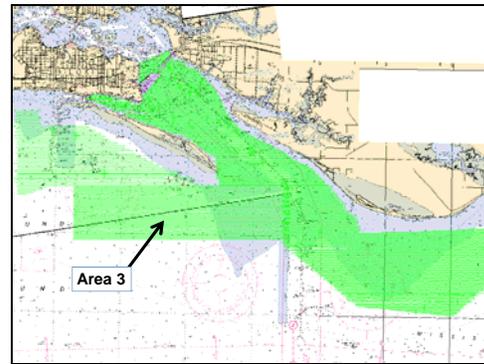
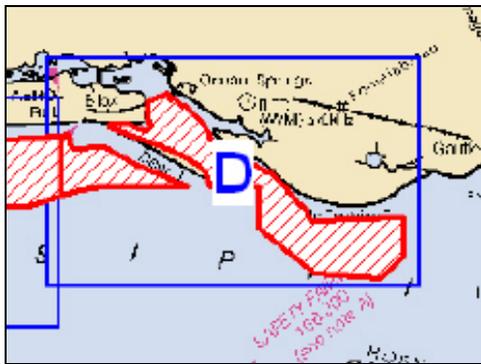
Attachments:  3977KR2007 - Analysis.zip

**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to ACCOMPANY
SURVEY H11619 (2006)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

A. AREA SURVEYED

This survey encompasses an additional area from project S-J918-KR-06, referred to as Area 3 in the DR. The screen capture on the left depicts the survey area requirement as described in the Statement of Work for Sheet D (H11619) of this project (S-J977-KR-CC), and on the right is the data submitted by the contractor, which includes the Area 3. Area 3 was included for H11619 compilation.



B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

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

CARIS HIPS/SIPS Version 6.1 SP2
CARIS Bathymetry Manager Version 2.1 SP1
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM version 3.3
CARIS S57 Composer version 2.0

B.2. QUALITY CONTROL

B.2.1. H-Cell

The final product from the review was a 5 meter resolution surface. The shoal layer was extracted from this surface and the depth layer regenerated from the shoal layer. The resultant surface was used for chart compilation.

A dense sounding selection was created from the surface using a 40 meter radius. A TIN was made from this sounding selection, and an interpolated surface generated from this TIN at a 100 meter resolution. The interpolated surface was shifted by -0.229 to account for NOAA best practices regarding sounding rounding. The depth curves were generated from this shifted, interpolated surface, and are forwarded to MCD for reference only. The curves were utilized during chart scale sounding selection and quality assurance efforts at AHB.

The initial chart sounding selection was created by automated means. Another surface was interpolated from the TIN of the dense sounding selection, this one with a 20 meter resolution. The chart sounding selection was created from this surface with a 300 meter radius to correlate with the largest scale chart in the survey area (1:40,000). Interpolated soundings were excluded from selection to ensure the selected soundings are a subset of the dense sounding set. Considerable manual editing of the chart sounding selection was then necessary, to thin out soundings in the deeper waters where fewer charted soundings existed, and to ensure the near-shore areas were properly represented.

The meta layers were edited to remove all the channels and spoil areas from compilation.

Bottom samples were taken by the survey in those areas that were inadequately represented by the chart. These bottom samples were included in the H-Cell, and the remaining bottom characteristics were imported from the ENC into the H-Cell as well.

12 private aids to navigation were encompassed in the survey area, and these objects were imported from the ENC into the H-Cell.

12 mooring facility objects exist within the survey area close to the Highway 90 bay bridge. These objects were imported from the ENC and included within the H-Cell for compilation.

11 charted piles exist within the survey area and were either found to exist, or sufficient evidence to disprove them did not exist. These piles were imported from the ENC and included within the H-Cell for compilation.

27 charted and uncharted obstructions are included for compilation within the H-Cell, as well as 7 charted wrecks. The charted features were imported from the ENC.

Numerous charted obstructions and wrecks were disproved with single beam and side scan sonar, accounted for in the blue notes.

The intertidal area around Deer Island has changed. The area object was imported from the ENC, and its boundaries were edited to encompass all of the zero soundings from the dense sounding selection. The edited area object is included within the H-Cell as a depth area.

The pre-compilation components include the dense sounding selections and the chart sounding selection (SOUNDG), features (BCNLAT, DEPARE, DEPCNT, MORFAC, OBSTRN, PILPNT, SBDARE, WRECKS), cartographic blue notes (\$CSYMB), and meta objects (M_COVR, M_QUAL). With the exception of the dense sounding selection and depth curves, all of the other pre-compilation components listed above were inserted into one feature layer, and this layer was exported into S-57 format in order to create the H-Cell deliverable. The dense sounding selection and depth contours were exported into S-57 format separately, and then both S-57 files were

processed in Caris HOM to convert the metric units to fathoms. The final products are two S-57 files, one that contains the chart soundings, all of the features, meta objects, and blue notes (H11619_CS.000) and one that contains the dense sounding selection and depth curves (H11619_SS.000). Finally, quality assurance checks were made utilizing both DKART Inspector Version 5.0 and Caris S-57 Composer Version 2.0 validation checks.

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

H11619 Caris H-Cell final deliverables include the following products:

H11619_CS.000	1:40,000 Scale	H11619 H-Cell with Chart Scale Selected Soundings
H11619_SS.000	1:40,000 Scale	H11619 Selected Soundings (Survey Scale)

B.2.2. Junctions

H11619 junctions with H11618 to the west. H11618 has yet to be compiled, and when this survey undergoes compilation, soundings will be compared and area objects delineated accordingly.

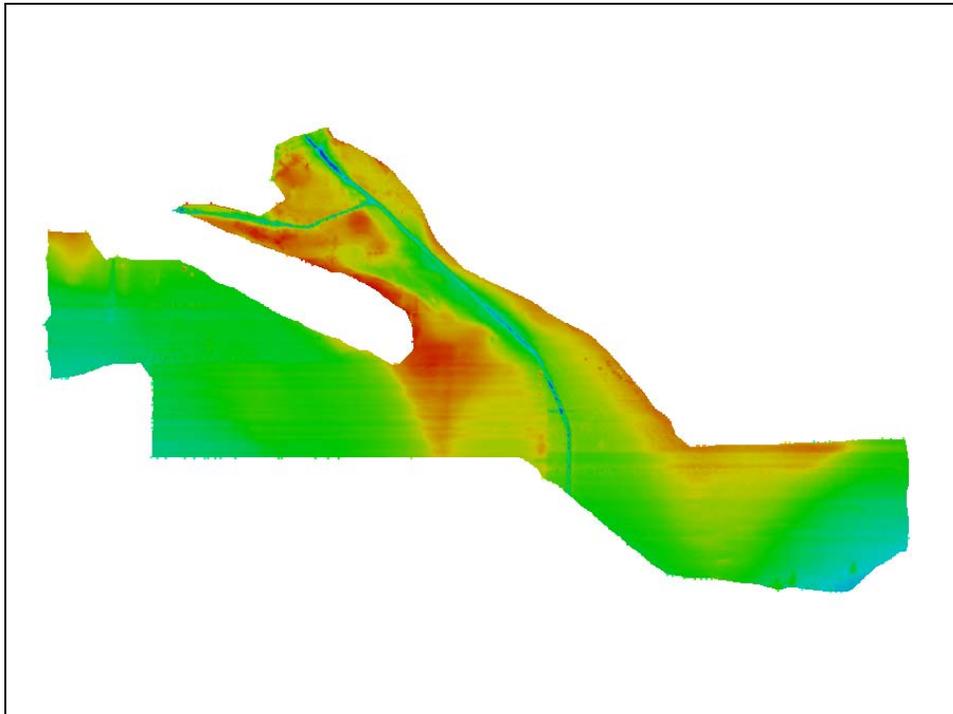
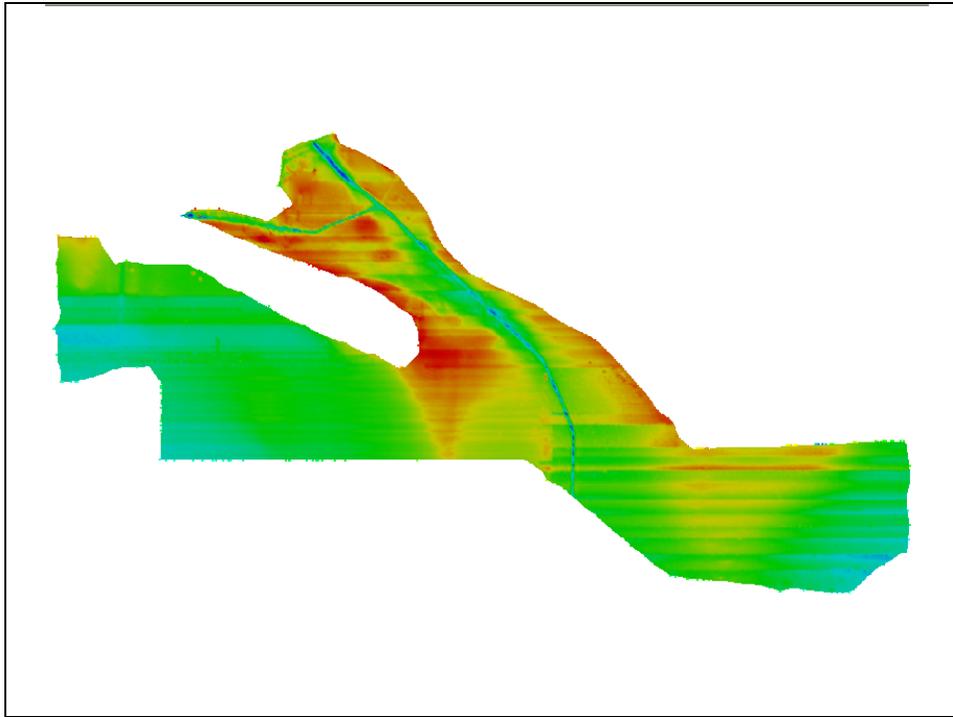
C. VERTICAL AND HORIZONTAL CONTROL

A known tide error existed in this survey of significant magnitude. Much of the error was previously attributed to meteorological effects. Further investigation revealed incorrect appending of Caris tide files—tide files in Local Standard Time (LST) were combined with files in GMT. The survey was conducted in LST, meaning all of the tide data appended in GMT had significant tide error.

In addition, the Mean Lower Lower Water level in this area has undergone an epic datum shift since the time of this survey. This epic datum shift was of a negligible magnitude, but since tides were being re-applied regardless, the epic datum shift was accounted for.

Tide data was downloaded for each tide station in LST to encompass all survey times. The tide data was re-applied, the data remerged, and surfaces recreated. The result was very favorable, as the glaring tide error evident in the data before correction was improved significantly.

There are two screen captures below. The first one is an interpolated surface created from the dense sounding set before the tide correction. The second screen capture is the same product, created after the tide correction.



D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

11372 (33rd Edition, 06/01/2007)

Corrected through NM 02/28/2009

Corrected through LNM 02/17/2009

Scale 1:40,000

11374 (34th Edition, 10/01/2007)
Corrected through NM 03/14/2009
Corrected through LNM 03/10/2009
Scale 1:40,000

ENC Comparison

US5MS11M

Dog Keys Pass to Waveland
Edition 29
Application Date 2009-01-30
Issue Date 2009-04-13
Chart 11372

US5MS21M

Dauphin Island Ala to Horn Island Miss
Edition 17
Application Date 2008-12-04
Issue Date 2009-02-27
Chart 11374

D.1.1 Hydrography

Many charted features were not addressed. The compiler attempted to determine a charting recommendation based on the submitted single beam data and side scan sonar. In some cases, this was sufficient to verify or disprove the charted feature and the recommendation was made for retain or removal from the chart. If the feature was recommended to be retained, that feature was imported from the ENC into the H-Cell. All charting recommendations are noted in the DR, which correlate with the features and blue notes within the H-Cell.

All the least depths associated with bathymetric contacts and all of the estimated least depths associated with the side scan sonar contacts changed after the tide correction (described above). The new least depths and estimated least depths and the corresponding charting recommendation are contained within the DR.

One obstruction was found in the single beam data after the tide correction and is recommended to be charted:

Latitude: 30-21-22.5828 N, 088-46-14.9484 W

Least Depth=2.10 feet, from Line 256-1309, Vessel: Arlen

D.2. ADDITIONAL RESULTS

The field unit submitted two DtoN's. After the tide correction, the DtoN located at 30-23-26.2003N, 088-52-22.77948W was found to be insignificant and is recommended for removal, as noted within the blue notes.

Orthophotos were utilized from the National Map Seamless Server, courtesy of the U.S. Geological Survey. These orthophotos were useful in delineating intidal zones and foul areas, as well as determining the existence of mooring facilities.

D.2.1. Aids to Navigation

No changes from DR.

D.3. MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey:

D.4. ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

APPROVAL SHEET
H11619

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, representation of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

Matthew J. Wilson
Physical Scientist
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.

Approved: _____
Shepard Smith
Commander, NOAA
Chief, Atlantic Hydrographic Branch