

H12056

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

## DESCRIPTIVE REPORT

Type of Survey: Hydrographic Multibeam & 200% Sidescan

Project No. : OPR-K354-KR-09

Registry No. : H12056

### LOCALITY

State: Louisiana

General Locality: Gulf of Mexico

Sublocality: 21 NM S of Entrance to Terrebonne Bay

2010

CHIEFS OF PARTY  
Scott Croft, John Baker

### LIBRARY & ARCHIVES

DATE: \_\_\_\_\_

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  <b>HYDROGRAPHIC TITLE SHEET</b>	REGISTRY No: H12056
		FIELD NUMBER: Sheet E
State: <u>Louisiana</u>		
General Locality: <u>Gulf of Mexico</u>		
Locality: <u>21 NM S of Entrance to Terrebonne Bay</u>		
Scale: <u>1:10,000</u> Date of Survey: <u>August 2009 - September 2009</u>		
Instructions Dated: <u>June 2009</u> Project Number: <u>OPR-K354-KR-09</u>		
Vessels: <u>M/V Inez McCall</u>		
Chiefs of Party: <u>Scott Croft, John Baker</u>		
Surveyed by: <u>C&amp;C Technologies Personnel</u>		
Soundings taken by echosounder, hand lead line, or pole: <u>Simrad EM3002 Multibeam Echo sounder</u>		
Verification by: <u>C&amp;C Technologies Personnel</u> <b><i>Atlantic Hydrographic Branch (bold, red, italic font)</i></b>		
Soundings in: Feet: <u>X</u> Fathoms: _____ Meters: _____ at MLW: _____ MLLW: <u>X</u>		
<b>Remarks:</b> <u>Multibeam Hydrographic Survey of Sheet C</u> <u>Data collection in meters, referenced to MLLW, later converted into feet</u> <u>200% side scan sonar coverage</u> <u>UTC time was used exclusively</u> <u>Grab samples were taken</u> <u>Tidal Zones: CGM366, 717, 718, 731, 732, 733, 734, 735, 749, 750, 364, WGM416</u> <u>Tidal Station: 8762075 (Port Fourchon, LA)</u> <b><i>Hcell compilation units in Feet at MLLW</i></b>		

## TABLE OF CONTENTS

A. AREA SURVEYED .....	3
A.1 ACQUISITION DATES .....	4
A.2 SURVEY SUBAREAS.....	4
B. DATA ACQUISITION AND PROCESSING .....	5
B.1 EQUIPMENT .....	5
B.2 QUALITY CONTROL .....	6
B.3 CORRECTIONS TO ECHO SOUNDINGS.....	7
C. VERTICAL AND HORIZONTAL CONTROL.....	7
D. RESULTS AND RECOMMENDATIONS .....	8
D.1 CHART COMPARISON.....	8
D.1.1 CHARTS AND NOTICES TO MARINERS .....	8
D.1.2 CHARTED FEATURES .....	9
D.1.3 NOTICES TO MARINERS.....	10
D.1.4 CHARTED SOUNDINGS.....	10
D.1.5 SHOALS AND HAZARDOUS FEATURES .....	11
D.1.6 AWOIS ITEMS.....	11
D.1.7 INVESTIGATION ITEMS.....	15
D.2 ADDITIONAL RESULTS .....	16
D.2.1 PRIOR SURVEYS.....	16
D.2.2 AIDS TO NAVIGATION.....	16
D.2.3 EXISTING INFRASTRUCTURE.....	16
D.2.4 OTHER PERTINENT INFORMATION.....	17
LETTER OF APPROVAL .....	19

## **APPENDICES**

Appendix I	Danger to Navigation Reports
Appendix II	Survey Feature Report
Appendix III	Final Progress Sketch and Survey Outline
Appendix IV	Tides and Water Levels
Appendix V	Supplemental Survey Records and Correspondence

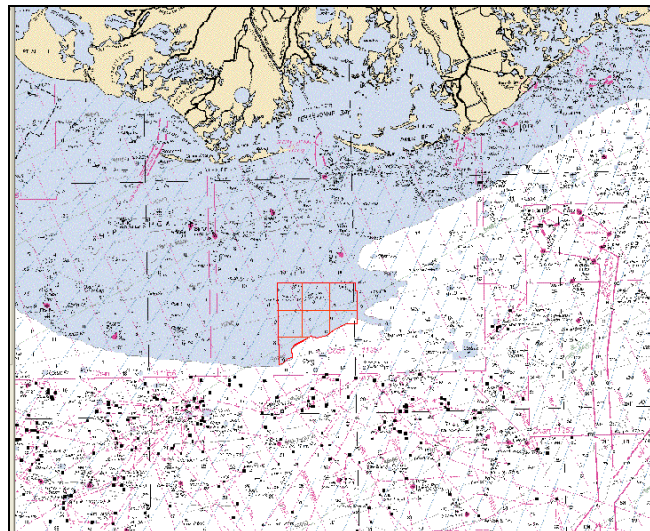
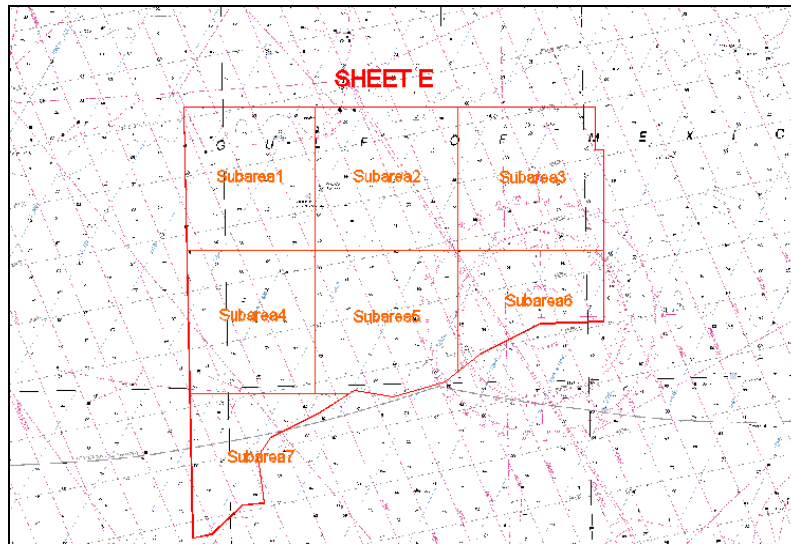
## **SEPARATES**

*Filed digitally at AHB*

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

## A. AREA SURVEYED

The survey area is located 21 NM S of Entrance to Terrebonne Bay in the Gulf of Mexico. The following sketch shows the layout of Sheet E (H12056) of Project (OPR-K354-KR-09). Water depths in the survey area range from 52 feet to 67 feet Mean Lower Low Water (MLLW). *Concur.*



# Descriptive Report to Accompany Hydrographic Survey H12056



	<i>Inez McCall</i>	Total
LNM Side Scan + Multibeam	1720.10	1720.10
LNM Crosslines	180.56	180.56
LNM Investigations	5.11	5.11

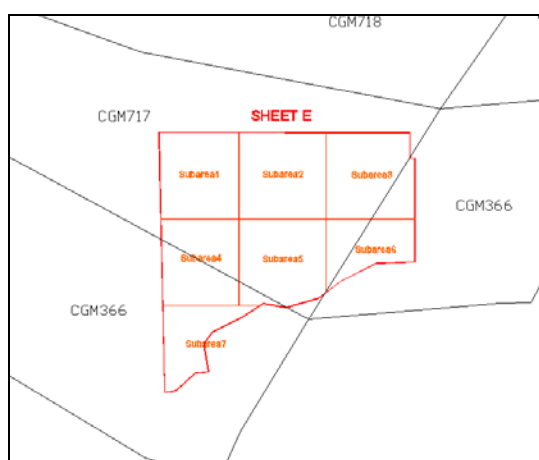
Number of bottom samples collected	59
Number of items investigated	7
Total square nautical miles	71.2

## A.1 ACQUISITION DATES

*August 19-31 2009*  
*Sept 1-4, 18-19 2009*

## A.2 SURVEY SUBAREAS

The survey area was broken down into seven sub areas to allow for more efficient data processing and management. The sub areas were based on the predicted data set sizes prior to survey commencement. Tidal data from Port Fourchon, LA (8762075) was used as the source for corrections. Subareas 1 and 2 fall entirely within tide zone CGM717. And tide zones CGM717 and CGM366 split Subareas 3-7. Below is an image showing the layout of the tide zoning for this project. ***Concur with clarification. Subarea 7 falls entirely within CGM366.***



## B. DATA ACQUISITION AND PROCESSING

### B.1 EQUIPMENT

System	Manufacturer	Model
Multibeam Echo Sounder	Simrad	EM3002
Side Scan Sonar	Klein	5000
Single Beam Echo Sounder	ODOM	Echotrac DF3200 MK II
Motion Sensor	Applanix	POS MV
Primary Positioning System	CNAV	2050
Secondary Positioning System	CNAV	2050
Tertiary Positioning System	Applanix	POS MV
Sound Speed at Transducer	Endeco	YSI
Sound Velocity Profiler	Seabird	SBE19 Plus

See Data Acquisition and Processing Report\* for a detailed description of the equipment used for hydrographic operations. **Concur.** *\*Included with survey deliverables.*

The *M/V Inez McCall*, a 33.5-meter vessel, conducted survey operations for this project. The vessel is 7.5 meters wide with an approximate draft of 2.75 meters. A central reference point was established prior to the survey from which all relevant offsets were measured. Relevant offsets are presented in the following table. **Concur.**

LOCATIONS FORM CRP	Y (FORWARD)	X (STARBOARD)	Z (VERTICAL)
PRIMARY C-NAV	2.977m	-0.457m	-6.491m
SECONDARY C-NAV	3.052m	0.476m	-6.490m
PRIMARY POS/MV	2.990m	-0.971	-6.500m
SECONDARY POS/MV	3.044m	0.965m	-6.478m
SINGLEBEAM DUCER	14.589m	ON $\varnothing$	2.476m
MULTIBEAM DUCER	14.800m	ON $\varnothing$	2.475m
POS/MV IMU	14.976m	ON $\varnothing$	-1.205m
DRAFT TUBE	-8.953m	2.621m	0.655m
SHIVE	-17.976m	ON $\varnothing$	-2.722m



A detailed vessel description, vessel diagram, and patch test results are presented in the Data Acquisition and Processing Report\*. **Concur. \*Included with survey deliverables.**

## B.2 QUALITY CONTROL\* **\*See also H-Cell Report**

In order to most efficiently carry out this survey, the survey lines were oriented roughly east west throughout the survey area. The side scan was operated with a range of 100 meters per channel, and line spacing was set to 90 meters. These parameters allowed us to effectively meet the criteria of 200 percent side scan coverage, using Technique 2, as set forth in Section 6.1 of the “Specifications and Deliverables” document. The angular sector on the multibeam was set so that the criterion of two times water depth, as well as all accuracy, resolution, and detection criteria as set forth in Sections 5.2 and 5.3 of the “Specifications and Deliverables” document, were met. **Concur.**

The internal consistency of the multibeam depth values is quantified in the cross line statistics that were performed at the end of each main line. Cross lines were run prior to the collection of main line data so that quality control statistics could be performed on the data after each line. Based on pre-plot calculations, the total cross line miles was 97 nm, while the total main line miles was 1637 nm. The cross lines comprised about 6% of the total data set as compared to the main scheme lines. Rerun line miles are not included in these totals. As can be seen in the sample statistics found in Separates V\*, the main lines and cross lines depth values showed very good agreement. Each main line was compared to all cross lines for which there was overlapping data. The graphs shown in Separates V\* are a random sample of the graphs that were produced. The graphs show the mean difference, RMS difference, and confidence interval for each beam.





The results show that the multibeam data was repeatable with 90% of the soundings within about 8 to 14 centimeters across the swath. The seven BASE surfaces for Sheet E were created at a scale of 1:10000 with a resolution of 2 meters. Soundings between the base surfaces agree to within 1 foot in all areas, with no visible draft or tidal errors between the survey junctions. No further correction to sounding is necessary. **Concur.**  
*\*Filed with original field records.*

Multibeam quality control procedures are outlined in Section B.1 of the accompanying Data Acquisition and Processing Report\*. **Concur.** *\*Included with survey deliverables.*

**B.3 CORRECTIONS TO ECHO SOUNDINGS**

No deviations from the Correction to Echo Soundings section in the Data Acquisition and Processing Report\* occurred. **Concur.** *\*Included with survey deliverables.*

**C. VERTICAL AND HORIZONTAL CONTROL\*** *\*See also H-Cell Report*

Tide and water level corrections were determined and applied in accordance with Attachment #7 of the Statement of Work\*. Tidal zoning as set forth in the Statement of Work\* was applied. Data from Port Fourchon, LA (8762075) was used as the primary source of tides, while Grand Isle, LA (8761724) was used as a back up. Because there were no outages at the primary station during the survey, the secondary station was not used for any tidal corrections. The following table shows the tidal zone and correctors that were used for this sheet. Tidal data were processed using the 1983-01 epoch. **Concur.** *\*Filed with original field records.*

Tide Zone	Reference Station	Primary/Secondary	Time Corrector	Range Ratio
CGM366	8762075	PRIM	-12	1.05

# Descriptive Report to Accompany Hydrographic Survey H12056



CGM366	8761724	SEC	-48	1.23
CGM717	8762075	PRIM	-12	1.05
CGM717	8761724	SEC	-48	1.23
CGM718	8762075	PRIM	-12	1.05
CGM718	8761724	SEC	-42	1.23
CGM731	8762075	PRIM	-12	1.05
CGM731	8761724	SEC	-42	1.23
CGM732	8762075	PRIM	-6	1.09
CGM732	8761724	SEC	-42	1.27
CGM733	8762075	PRIM	-6	1.17
CGM733	8761724	SEC	-36	1.37
CGM734	8762075	PRIM	-6	1.09
CGM734	8761724	SEC	-36	1.27
CGM735	8762075	PRIM	-6	1.05
CGM735	8761724	SEC	-42	1.23
CGM749	8762075	PRIM	0	1.13
CGM749	8761724	SEC	-36	1.32
CGM750	8762075	PRIM	0	1.09
CGM750	8761724	SEC	-36	1.27
WGM416	8762075	PRIM	-6	1.21
WGM416	8761724	SEC	-36	1.42
CGM364	8762075	PRIM	-6	1.09
CGM364	8761724	SEC	-36	1.27

The horizontal datum for the survey is the North American Datum of 1983 (NAD 83). The projection is Universal Transverse Mercator (UTM) Zone 15 North. The vertical datum for the soundings is Mean Lower Low Water (MLLW). *Concur.*

## D. RESULTS AND RECOMMENDATIONS\*

*\*See also H-Cell Report*

### 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
11357	1:80,000	40	Jun 09
11340	1:458,596	74	Aug 09



The following table shows the last updated NM and LNM for each digital chart.

Chart Number	Corrected Through	
	NM	LNM
11357	Jun. 06/09	Jun. 02/09
11340	Aug 08/09	Jul 28/09

#### D.1.2 CHARTED FEATURES

No evidence of the following charted features was found during this survey. It is recommended that these features be removed from the chart. All positions were taken from the chart, and are approximate.

Charted Feature	Chart Number	Latitude	Longitude
Submerged Obstruction <del>Wreck</del> PA <i>Concur, See AWOIS 14332 feature report</i>	11357	28°46'00.852"N	90°38'31.373"W
20 ft Submerged Obstruction PA <i>Concur, See AWOIS 14333 feature report</i>	11357	28°44'42.661"N	90°37'18.772"W
Pipe PA <i>Concur, See AWOIS 14489 feature report</i>	11357	28°46'08.002"N	90°31'37.755"W

Charted Feature	Chart Number	Latitude	Longitude
Submerged Obstruction <del>Wreck</del> PA <i>Concur</i>	11340	28°46'22.256"N	90°38'38.401"W
3 ½ fms Submerged Obstruction PA <i>Concur</i>	11340	28°44'45.970"N	90°37'14.890"W
Pipe PA <i>Concur</i>	11340	28°46'12.084"N	90°31'36.652"W

The following charted features were found during survey operations\*. These features were assigned for full investigation as AWOIS items, and have been discussed in more detail, in section D.1.6 of this report. *\*Concur with clarification. The charted wreck was not found within AWOIS radius.*



Charted Feature	Chart Number	Latitude	Longitude
Submerged Obstruction <del>Obstruction</del> <i>Wreck</i> PA <i>Concur, See AWOIS 14330 feature report</i>	11357	28°46'08.661"N	90°31'02.887"W
3 ft Submerged Obstructions PA <i>Concur, See AWOIS 14334 feature report</i>	11357	28°44'34.943"N	90°37'40.367"W

Charted Feature	Chart Number	Latitude	Longitude
Submerged Obstruction <del>Obstruction</del> <i>Wreck</i> PA <i>Concur</i>	11340	28°46'10.528"N	90°31'01.158"W
½ fms Submerged Obstruction PA <i>Concur</i>	11340	28°44'29.569"N	90°37'36.393"W

#### D.1.3 NOTICES TO MARINERS

The Notices to Mariners were reviewed from the last updated notice for each digital chart, to September 19, 2009. During that time, there were no notices to mariners issued for the charted area within the survey bounds. *Concur.*

#### D.1.4 CHARTED SOUNDINGS

##### Chart 11340

Surveyed soundings are deeper than charted soundings across the entire survey area. This ranges from 4-8 feet deeper in the north part of the survey, to 1-3 feet deeper in the southeast corner. *Concur.*

##### Chart 11357

In general, surveyed soundings are 1-4 feet deeper than charted soundings. The only deviations from this trend are in the southwest part of the survey area, where surveyed soundings are up to 5 feet shoaler than charted, and at 28°42'32.504"N, 90°33'52.706"W (NAD83) there is a 58 ft charted sounding that is 2-3 feet deeper than the surrounding surveyed depths. *Concur.*



#### D.1.5 SHOALS AND HAZARDOUS FEATURES

There are no charted shoals within the survey bounds, and none were found during survey operations. No new hazardous features were found during the survey, and all of the charted obstructions within the survey area were assigned for full investigation as AWOIS items, and have been discussed in section D.1.6 of this report. *Concur.*

#### D.1.6 AWOIS ITEMS

Five AWOIS items were assigned for full investigation within the H12056 survey area. *Concur.*

##### AWOIS 15601

Description: J.E. Bisso

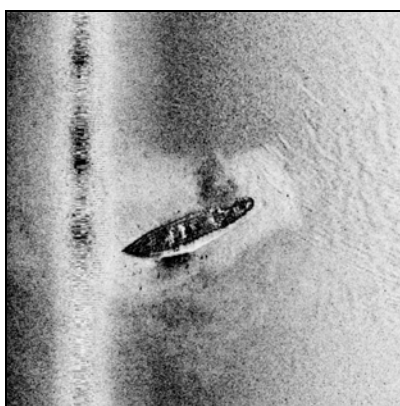
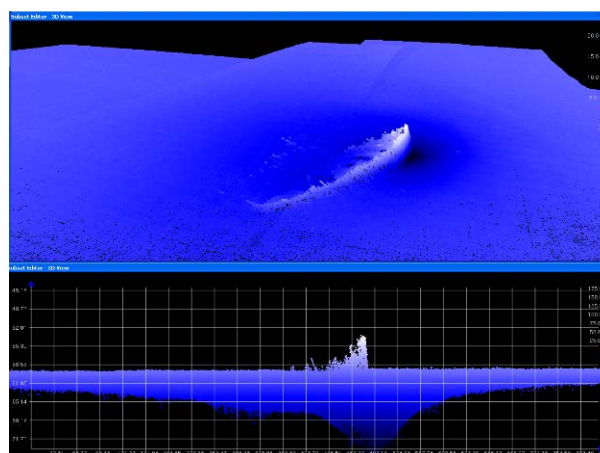
AWOIS Position: 28°46'00.86"N 90°38'34.31"W

Search Radius: 250 meters

Investigation Method: 200% Side Scan Sonar, Multibeam Echo sounder

Position Determined By: Differential GPS

Investigation Summary: This item is described as the sunken wreck "J.E. Bisso". This AWOIS was not found within the search radius provided by NOAA, but a wreck exists approximately 1000 meters to the south. It was investigated by multibeam, and found to have a least depth of 53.304 ft at 28°45'27.687"N, 90°38'32.617"W (NAD83). It is recommended that this be charted as a 53 ft submerged shipwreck at 28°45'27.687"N, 90°38'32.617"W (NAD83). A least depth for this feature has been marked as a designated sounding within the H12056 Caris project submitted in conjunction with this report. *Concur with clarification. Feature is AWOIS item #14332. Delete charted dangerous wreck PA. Chart dangerous wreck, least depth 53 ft at the survey position.*



AWOIS 15603

Description: Obstructions

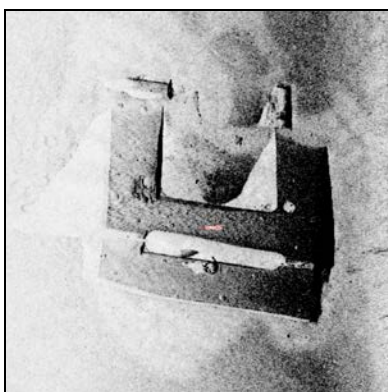
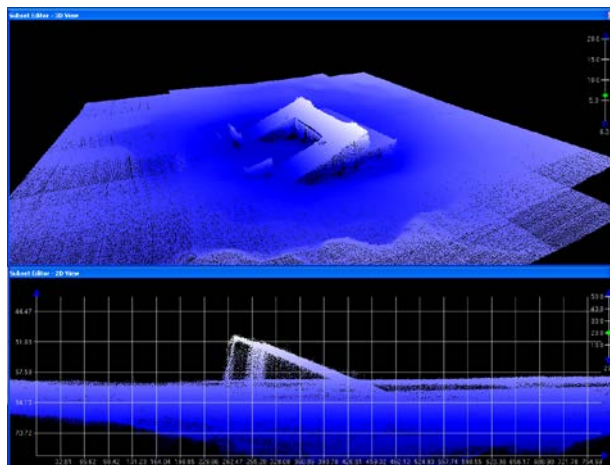
AWOIS Position: 28°44'34.00"N 90°37'41.00"W

Search Radius: 300 meters

Investigation Method: 200% Side Scan Sonar, Multibeam Echo sounder

Investigation Summary: This AWOIS item is also found on chart number 11357 and 11340 as submerged obstructions PA. It was investigated by multibeam, and found to have a least depth of 49.078 ft at 28°44'36.814"N, 90°37'34.820"W (NAD83). A least depth for this feature has been marked as a designated

sounding within the H12056 Caris project submitted in conjunction with this report. ***Concur with clarification. Feature is AWOIS item #14334. Delete charted dangerous obstruction PA (less than 3 ft rep). Chart dangerous obstruction, least depth 49 ft at the survey position.***



AWOIS 15602

Description: Obstruction

AWOIS Position: 28°44'42.00"N 90°37'18.00"W

Search Radius: 300 meters

Investigation Method: 200% Side Scan Sonar, Multibeam Echo sounder



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Investigation Summary: This AWOIS item is also found on chart number 11357 and 11340 as an Obstruction PA. No evidence of this item was found during the survey, and it is recommended that it be removed from the chart. ***Concur with clarification, item is AWOIS#14333.***

AWOIS 15789

Description: Pipe

AWOIS Position: 28°46'08.00"N 90°31'38.00"W

Search Radius: 200 meters

Investigation Method: 200% Side Scan Sonar, Multibeam Echo sounder

Position Determined By: Differential GPS

Investigation Summary: This AWOIS item is described as a pipe, and is also found on chart numbers 11357 and 11340. No evidence of this item was found during the survey, and it is recommended that it be removed from the charts.

***Concur with clarification, item is AWOIS#14489.***

AWOIS 15599

Description: Thai Binh

AWOIS Position: 28°46'09.00"N 90°31'03.00"W

Search Radius: 250 meters

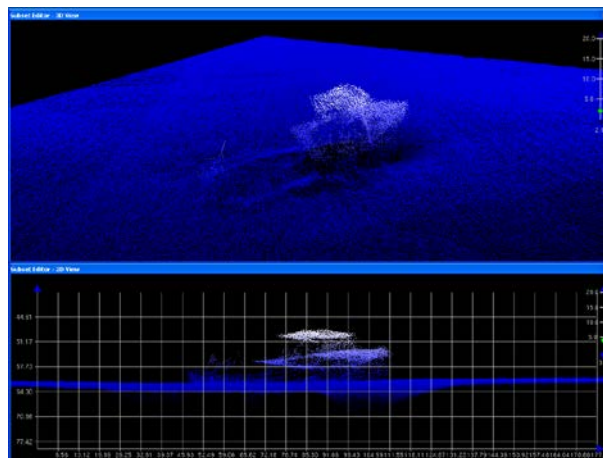
Investigation Method: 200% Side Scan Sonar, Multibeam Echosounder

Position Determined By: Differential GPS

Investigation Summary: This item is described as the sunken wreck "Thai Binh". This AWOIS was not found within the search radius provided by NOAA, but a wreck exists approximately 800 meters to the west. It was investigated by multibeam, and found to have a least depth of 47.310 ft at 28°46'11.653"N 90°31'32.371"W (NAD83). It is recommended that this be charted as a 47 ft submerged wreck at 28°46'11.653"N 90°31'32.371"W (NAD83). This contact has been marked as a designated sounding within the H12056 Caris project



submitted in conjunction with this report. *Concur with clarification. Feature is AWOIS item #14330. Delete charted dangerous wreck PA Chart dangerous wreck, least depth 47 ft at the survey position.*



#### D.1.7 INVESTIGATION ITEMS

Additional investigation work was performed for seven significant sonar contacts. Six additional multibeam and side scan lines were run over each of these targets. The three targets that were determined to be significant, were also assigned for full investigation as AWOIS items, and have been discussed in section D.1.6 of this report. *Concur.*



### D.1.8 DANGER TO NAVIGATION REPORTS

No Danger to Navigation Reports were issued. **Concur.**

### 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

No Aids to Navigation are charted within the survey area. **Concur.**

#### D.2.3 EXISTING INFRASTRUCTURE

The following charted structures were found as charted. **Concur with clarification below.**

Charted Position			
Latitude	Longitude	Structure Type	Structure Name
28°45'42.543"N	90°40'30.248"W	Platform	OSCG-4460
28°45'53.600"N	90°38'12.749"W	Platform	OCSG-04827
28°46'38.307"N	90°36'44.790"W	Platform	OCS-G-04827
<del>28°46'39.608"N</del>	<del>90°36'21.124"W</del>	<del>Platform</del>	<del>OCS-G-04827</del> This platform was uncharted, thus was added to the table below.
28°39'24.402"N	90°40'19.875"W	Platform	OCSG-5062
28°40'25.147"N	90°40'48.877"W	Platform	SGY ST-100A

Structures found in the following locations are currently uncharted. **Concur.**

Surveyed Position			
Latitude	Longitude	Structure Type	Structure Name
28°40'16.192"N	90°36'14.426"W	Platform	Platform #1
<del>28-46-39.707N</del>	<del>90-36-20.78W</del>	<del>Platform</del>	<del>Contractor found platform in</del>



			<b>SSS but did not include in documentation or S-57 file</b>
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The following is a list of structures that are currently charted, but were no longer present at the time of the survey. *Concur.*

Charted Position	
Latitude	Longitude
28°46'08.380"N	90°37'23.573"W
28°43'57.381"N	90°36'28.238"W

#### D.2.4 OTHER PERTINENT INFORMATION

Draft corrections are verified on a daily basis, and entered into the multibeam collection software to be applied in real-time. Draft was entered directly into the single beam. *Concur.*

Seven separate BASE surfaces were created for this project, one for each subarea. All nine BASE surfaces were created at 2-meter resolution. *Concur.*

All of the side scan data collected for this project has been layback corrected. Data should be imported into Caris using fish position and zero layback correction. *Concur.*

S57 feature files for oil and gas infrastructure, bottom samples, wrecks, and obstructions have been submitted in a Caris Notebook project. *Concur.*

All TPE values were calculated using the following settings.

# Descriptive Report to Accompany Hydrographic Survey H12056



**Compute TPE** [X]

Survey specific parameters

Tide values: Measured  ft Zoning  ft

Sound Speed values: Measured  m/s Surface  m/s

Sweep specific parameters

Peak to Peak Heave:  ft

Max Roll:  deg

Max Pitch:  deg



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**LETTER OF APPROVAL**

REGISTRY NUMBER H12056

This report and the accompanying smooth sheet are respectfully submitted.

Field operations contributing to the accomplishment of the survey H12056 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and CARIS project have been closely reviewed and are considered complete and adequate as per the Statement of Work.

This report is accompanied by the Data Acquisition and Processing Report for project OPR-K354-KR-09.

A handwritten signature in black ink, appearing to read "JB", is centered on the page.

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John Baker  
Chief of Party  
C&C Technologies  
March 2010



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**APPENDIX I**

**DANGER TO NAVIGATION REPORTS**



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No Danger to Navigation Reports were issued.



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**APPENDIX II**

**SURVEY FEATURE REPORT**





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Five AWOIS Items were assigned for full investigation. They are discussed in section D.1.6 of this report

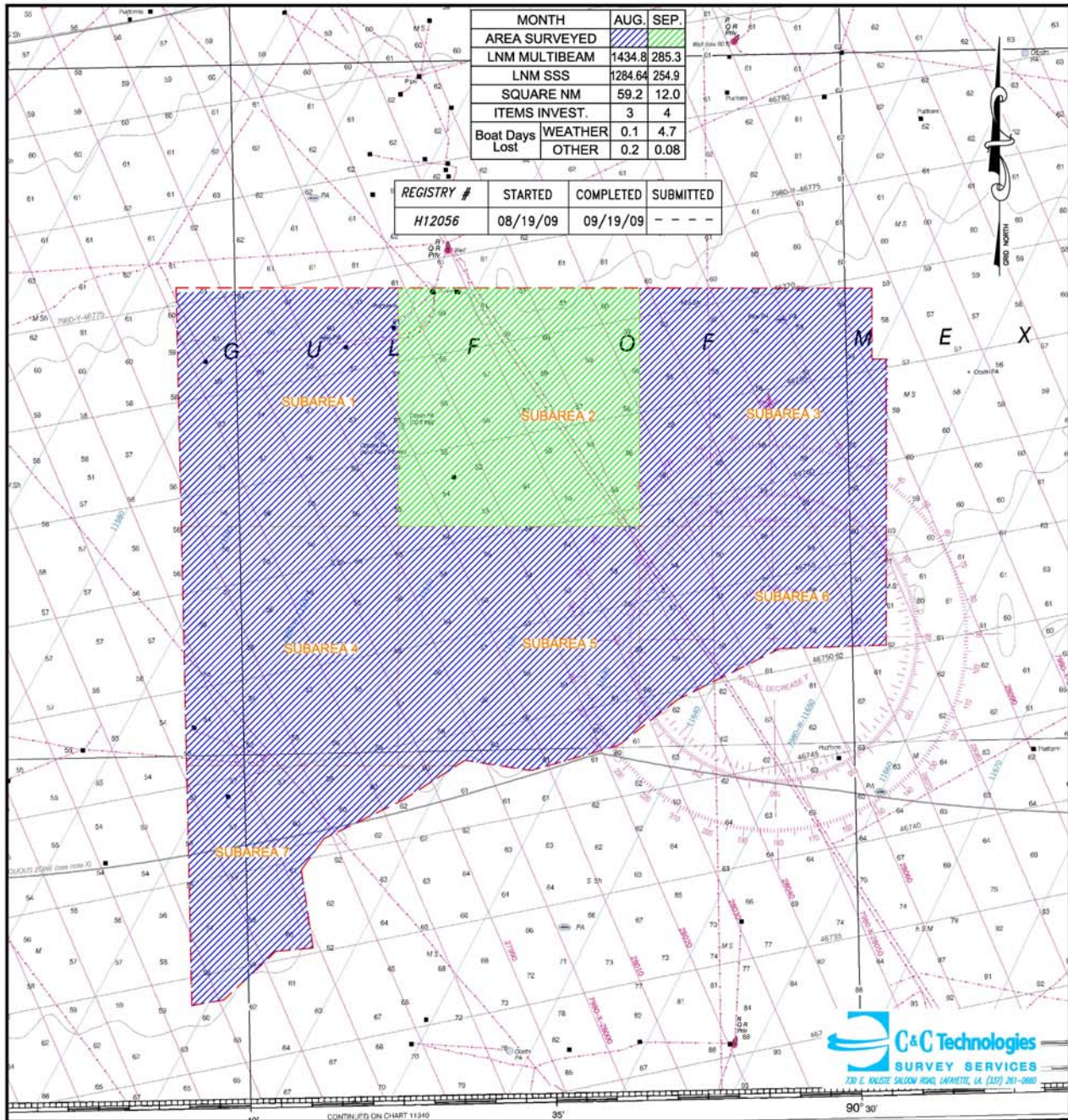


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**APPENDIX III**

**FINAL PROGRESS SKETCH AND SURVEY OUTLINE**

## OPR-K354-KR-09 H12056 Progress Sketch (Sheet E)





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A shapefile of the final survey outline for Sheet E (H12056) has been included in the DR folder inside the H12056\_Report\_Deliverables directory



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**APPENDIX IV**

**TIDES AND WATER LEVELS**



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The tidal data applied to all multibeam echo sounder data was downloaded from the following website:

[http://tidesandcurrents.noaa.gov/data\\_menu.shtml?stn=8768094%20Calcasieu%20Pass,%20LA&type=Historic%20Tide%20Data](http://tidesandcurrents.noaa.gov/data_menu.shtml?stn=8768094%20Calcasieu%20Pass,%20LA&type=Historic%20Tide%20Data)



**ABSTRACT OF TIMES OF HYDROGRAPHY**

Project: OPR-K354-KR-09  
 Contractor Name: C & C Technologies, Inc.  
 Inclusive Dates: **August 19th, 2009 - September 19th, 2009**  
 Registry No.: H12056 (Sheet E)  
 Date: March 2010  
 Sheet Letter: E  
 Field Work is Complete  
 Time (UTC)

Date	Julian Day	Start	End	Year
8/19/2009	231	2238	2400	2009
8/20/2009	232	0000	2400	2009
8/21/2009	233	0000	2400	2009
8/22/2009	234	0000	2400	2009
8/23/2009	235	0000	2400	2009
8/24/2009	236	0000	2400	2009
8/25/2009	237	0000	2400	2009
8/26/2009	238	0000	2400	2009
8/27/2009	239	0000	2400	2009
8/28/2009	240	0000	2400	2009
8/29/2009	241	0000	2400	2009
8/30/2009	242	0000	2400	2009
8/31/2009	243	0000	2400	2009
9/1/2009	244	0000	2400	2009
9/2/2009	245	0000	0627	2009
9/3/2009	246	0238	2400	2009
9/4/2009	247	0000	1046	2009
9/19/2009	262	0026	0623	2009



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**APPENDIX V**

**SUPPLEMENTAL SURVEY RECORDS  
AND CORRESPONDANCE**





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There are no supplemental survey records or correspondence accompanying this report.

# AHB COMPILATION LOG

General Survey Information	
REGISTRY No.	H12056
PROJECT No.	OPR-K354-KR-09
FIELD UNIT	M/V INEZ MCCALL
DATE OF SURVEY	20090919
LARGEST SCALE CHART	<i>11357_1, edition 40th, 20090601, 1:80,000</i>
SOUNDING UNITS	feet
COMPILER	Kyle S. Bates

Source Grids	File Name
	H:\Compilation\H12056_K354_CC\AHB_H12056\
	E-SAR Final Products\GRIDS\H12056_Inv_01_50cm_Final
	E-SAR Final Products\GRIDS\H12056_Inv_02_50cm_Final
	E-SAR Final Products\GRIDS\H12056_Inv_03_50cm_Final
	E-SAR Final Products\GRIDS\H12056_Sub1_2m_Final
	E-SAR Final Products\GRIDS\H12056_Sub2_Final
	E-SAR Final Products\GRIDS\H12056_Sub3_Final
	E-SAR Final Products\GRIDS\H12056_Sub4_Final
	E-SAR Final Products\GRIDS\H12056_Sub5_Final
	E-SAR Final Products\GRIDS\H12056_Sub6_2m_Final
	E-SAR Final Products\GRIDS\H12056_Sub7_Final
Surfaces	File Name
	H:\Compilation\H12056_K354_CC\AHB_H12056\COMPILE\Working
<i>Combined</i>	H12056_4m_Combined.hns
<i>Interpolated TIN</i>	\Interpolated TIN\H12056_12m_InterpTIN.hns
<i>Shifted Interpolated TIN</i>	\Shifted Surface\H12056_12m_InterpTIN_Shifted.hns
<i>Product Surface</i>	\Product Surface\H12056_12m_Product_Surface.hns
Final HOBs	File Name
	H:\Compilation\H12056_K354_CC\AHB_H12056\COMPILE\Final_Hobs\
<i>Survey Scale Soundings</i>	H12056_SS_Soundings.hob
<i>Chart Scale Soundings</i>	H12056_CS_Soundings.hob
<i>Contour Layer</i>	H12056_Contours.hob
<i>Feature Layer</i>	H12056_Features.hob
<i>Meta-Objects Layer</i>	H12056_MetaObjects.hob
<i>Blue Notes</i>	H12056_BlueNotes.hob

Meta-Objects Attribution	
Acronym	Value
<b>M_COVR</b>	
CATCOV	Coverage Available
SORDAT	20090919
SORIND	US,US_graph,H12056
<b>M_QUAL</b>	
CATZOC	Zone of Confidence U
INFORM	M/V Inez McCall
POSACC	10.00 m
SORDAT	200909
SORIND	US,US_graph,H12056

SUREND	20090919
SURSTA	20090819
<b>DEPARE</b>	
DRVALV 1	47.3 ft
DRVALV2	67.3 ft
SORDAT	20090919
SORIND	US,US,graph,H12056

**SPECIFICATIONS:**

- I. COMBINED SURFACE:
  - a. Number of ESAR Final Grids: 10
  - b. Resolution of Combined (m): 4
  
- II. SURVEY SCALE SOUNDINGS (SS):
  - a. Radius
  - b. Shoal biased
  - c. Use Single-Defined Radius (mm at Map Scale): ; Radius Value = 1.2
  - d. Queried Depth of All Soundings
    - i. Minimum: 47.3
    - ii. Maximum: 67.3
  
- III. INTERPOLATED TIN SURFACE:
  - a. Resolution (m): 12m
  - b. Linear
  - c. Shifted value: -0.75
  
- IV. CONTOURS:
  - a. Use a Depth List: H12056\_NOAA\_depth\_curves\_list.txt
  - b. Line Object: DEPCNT
  - c. Value Attribute: VALDCO
  
- V. FEATURES:
  - a. Total Number of Features: 11
  - b. Number of Insignificant Features: N/A
  
- VI. CHART SURVEY SOUNDINGS (CS):
  - a. Number of ENC CS Soundings: 176
  - b. Radius
  - c. Shoal biased
  - d. Use Single-Defined Radius: m on the ground
    - i. Radius Value (m): 1125
  - e. Filter: Interpolated != 1
  - f. Number Survey CS Soundings: 183

**ATLANTIC HYDROGRAPHIC BRANCH  
H-CELL REPORT to ACCOMPANY  
SURVEY H12056 (2009)**

This H-Cell Report has been written to supplement and/or clarify the original Descriptive Report (DR) and pass critical compilation information to the cartographers in the Marine Chart Division. Sections in this report refer to the corresponding sections of the Descriptive Report.

**B. DATA ACQUISITION AND PROCESSING**

**B.2 QUALITY CONTROL**

The AHB source depth grids for the survey's nautical chart update were 2m and 50cm resolution BASE surfaces (\*.CSAR), which were combined at 4m resolution. The survey scale soundings were created from the combined surface at a single defined radius of 1.2mm at the largest scale chart covering the respective area of the survey (Chart 11357\_1 scale 1:80,000). A TIN was created from the survey scale soundings, from which an interpolated surface of 12m resolution was generated. The chart scale soundings were derived from only the non-interpolated nodes of this surface to preserve absolute continuity between the charted depths, the survey scale soundings, and the original source grid. The chart scale soundings were selected using a single defined radius of 1125m (on the ground). The chart scale soundings are a subset of the survey scale soundings. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portray the bathymetry within the common area.

The interpolated TIN surface of 12m resolution was shifted by the NOAA sounding rounding value of -0.75 feet. The shifted interpolated TIN was used to generate a depth contours of 60 feet. The depth contours are forwarded to MCD for reference only. The contours were utilized during chart scale sounding selection and quality assurance efforts at AHB. The depth contours are incorporated into the SS H-Cell product as per 2009 H-Cell Specifications.

The compilation products (Final \*.HOB files) for this survey are detailed in the H12056 AHB Compilation Log contained within this document. The Final HOB files include depth areas (DEPARE), depth contours (DEPCNT), soundings (SOUNDG), meta-objects (M\_COVR and M\_QUAL), cartographic Blue Notes (\$CSYMB), and features (OBSTRN, OFSPLF, SBDARE, and WRECK).

As dictated by Hydrographic Technical Directive 2008-8, the Final HOB files were combined into two separate H-Cell files in S-57 format. Both S-57 files were exported from CARIS Bathy DataBASE in meters, and then converted from metric units into feet using CARIS S-57 Composer 2.2. Quality assurance and topology checks were conducted using CARIS S-57 Composer 2.2 and DKART Inspector 5.1 validation tests.

The final H-Cell products are two S-57 files, in Lat/Long NAD-83. The contents of these two H-Cell deliverables are listed in the table below:

<u>TABLE 1</u> - Contents of H-Cell Files			
<b>H12056_CS.000</b>		<b>Scale 1:80,000</b>	
<b>Object Class Types</b>	<b>Geographic</b>	<b>Cartographic</b>	<b>Meta</b>
<b>S-57 Object Acronyms</b>	DEPARE	\$CSYMB	M_COVR
	OBSTRN		M_QUAL
	SBDARE		
	WRECK		
	SOUNDG		
	OFSPLF		
<b>H12056_SS.000</b>		<b>Scale 1:10,000</b>	
<b>Object Class Types</b>	<b>Geographic</b>		
<b>S-57 Object Acronyms</b>	DEPCNT		
	SOUNDG		

#### **B.2.4 Junctions and Prior Surveys**

Survey H12056 (2009) junctions with surveys H12120 and H12069 to the west, H12054 to the north, and H12055 and H12057 to the east. At the time of compilation survey data from H12120 and 12069 were not available for junction analysis. All present survey depths compare within 1 foot of the remaining junction surveys.

#### **B.4 DATA PROCESSING**

The following software was used to process data at the Atlantic Hydrographic Branch:  
 CARIS Bathy DataBase version 3.0/HF10  
 CARIS HIPS/SIPS version 7.0/SP2/HF8  
 CARIS S-57 Composer version 2.1/HF5  
 DKART Inspector version 5.1

#### **C. HORIZONTAL AND VERTICAL CONTROL**

The hydrographer makes adequate mention of horizontal and vertical control used for this survey in section C of the DR. The sounding datum for this survey is Mean Lower Low Water (MLLW), and the vertical datum is Mean High Water (MHW). Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 15 North.

## **D. RESULTS AND RECOMMENDATIONS**

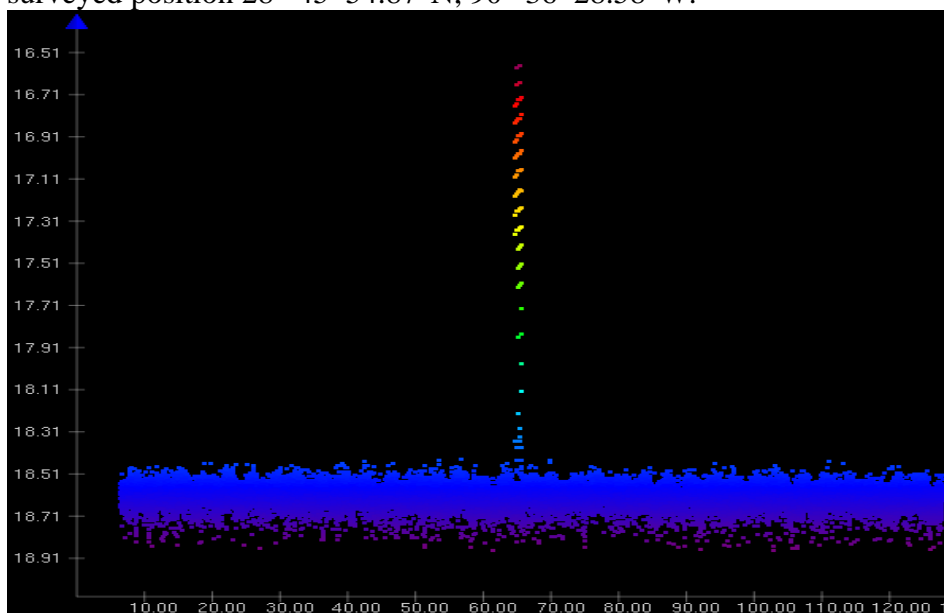
**D.1 CHART COMPARISON**                      **11357 1 (40th Edition, June/09)**  
Timbalier and Terrebonne Bays  
Corrected through NM 01/29/2011  
Corrected through LNM 01/18/2011  
Scale 1:80,000

**ENC COMPARISON**                              **US4LA31M**  
Timbalier and Terrebonne Bays  
Edition 23  
Application Date 2010/11/09  
Issue Date 2011/01/18  
Chart 11357

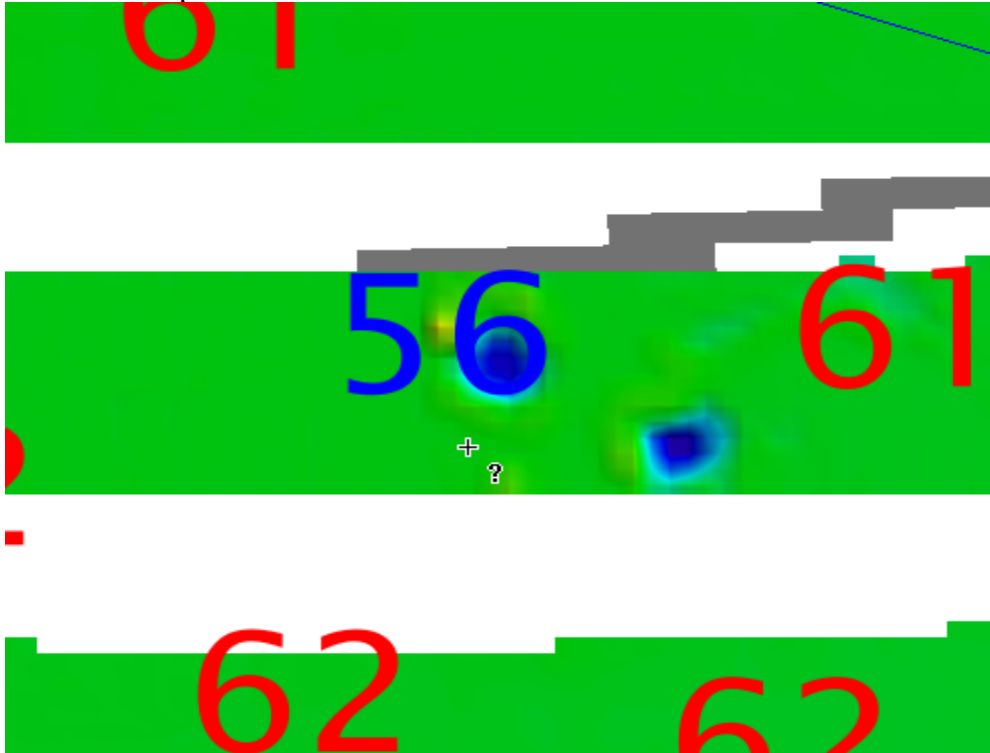
### **D.2 ADDITIONAL RESULTS**

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section D and Appendix I and II of the DR. The hydrographer recommends that any charted features not specifically addressed either in the H-Cell files or the Blue Notes should be retained as charted. The following exceptions are noted:

- a. The field unit collected a total of 58 bottom samples, 11 of which were used during compilation to supersede the charted seabed classifications.
- b. A 54 ft Obstruction was identified during office processing, but was not addressed by the field unit. Feature should be charted as a dangerous obstruction, least depth 54 ft at the surveyed position 28°-45'-54.87"N, 90°-36'-28.58"W.



- c. A 56ft sounding (28-39-57.97N, 90-38-13.71W) within the H12056 Hcell represents the least depths of the surrounding sea floor. The benthic mound like features or pock marks are sea floor sediment piles or mounds that were created when the offshore platform legs were retracted from the sea floor. It is recommended to represent this shoal sounding as a chart scale depth within these common areas.



## **D.6 MISCELLANEOUS**

Chart compilation was completed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to the Marine Chart Division in 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.7 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 files or the Blue Notes should be retained as charted. Refer to section D of the DR for further recommendations by the hydrographer.

**APPROVAL SHEET  
H12056**

**Initial Approvals:**

The completed survey has been inspected with regard to survey coverage, delineation of depth contours, disposition of critical depths, cartographic symbolization, and verification or disapproval 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 H-Cell Report.

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



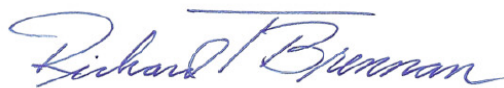
Kyle Bates  
2011.06.29  
16:40:26 -04'00'

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**Kyle S. Bates**  
Hydrographic Intern  
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:



Richard T. Brennan  
2011.06.29 17:50:49 -04'00'

**CDR Richard T. Brennan, NOAA**  
Chief, Atlantic Hydrographic Branch