

H12188

NOAA FORM 76-35A

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

**DESCRIPTIVE REPORT**

Type of Survey: Navigable Area

Registry Number: H12188

**LOCALITY**

State: Louisiana

General Locality: Northern Gulf of Mexico

Sub-locality: 45 NM Southeast of Sabine, TX

**2010**

CHIEF OF PARTY  
CDR Shepard M. Smith  
NOAA

LIBRARY & ARCHIVES

DATE

**HYDROGRAPHIC TITLE SHEET**

**H12188**

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: **Louisiana**

General Locality: **Northern Gulf of Mexico**

Sub-Locality: **45 NM Southeast of Sabine, TX**

Scale: **1:40,000** Date of Survey: **04/20/10 to 05/12/10**

Instructions Dated: **12 March 2010** Project Number: **OPR-K371-TJ-10**

Vessel: **NOAA Ship *Thomas Jefferson***

Chief of Party: **CDR Shepard M. Smith , NOAA**

Surveyed by: ***Thomas Jefferson* Personnel**

Soundings by: **Reson 7125 multibeam echosounders**

Graphic record scaled by: **N/A**

Graphic record checked by: **N/A**

Protracted by: **N/A** Automated Plot: **N/A**

Verification by: ***Atlantic Hydrographic Branch***

Soundings in: **Feet *Meters* at MLLW**

***H-Cell Compilation Units: Feet at MLLW***

Remarks: ***Bold, Italic, Red notes in the Descriptive Report were made during office processing.***  
***1) All Times are in UTC.***  
***2) This is a Navigable Area Hydrographic Survey.***  
***3) Projection is NAD83, UTM Zone 15 N.***

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**Descriptive Report to Accompany Hydrographic Survey H12188**

Project OPR-K371-TJ-10  
 Cameron, LA to Sabine, TX  
 45 NM Southeast of Sabine, TX  
 Scale 1:40,000  
 April 20<sup>th</sup> – May 13<sup>th</sup> **12<sup>th</sup>**, 2010  
**NOAA Ship *Thomas Jefferson***

**A. AREA SURVEYED**

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-K371-TJ-10, dated 12<sup>th</sup> March, 2010\*.

*\*Submitted with original field records.*

Northern limit	Southern limit	Eastern limit	Western limit
28°59'42.84" N 093°30'16.79" W	28°48'50.15" N 093°26'16.69" W	28°51'09.94" N 093°22'44.50" W	28°57'25.56" N 093°33'49.34" W

Data acquisition was conducted from April 20<sup>th</sup> – May 12<sup>th</sup>, 2010. **Concur.**

The purpose of the project is to provide accurate depths and object detection of the Safety Fairways and approaches to Sabine, LA to support safe and efficient marine transportation in the region. This project covers approximately 173nm of critical survey area as designated in the NOAA Hydrographic Survey Priorities, 2009 edition. **Concur.**

	Linear Nautical Miles
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	1,255
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	237
Lineal nautical miles of any combination of the above techniques (SSS 200%, MBES)	1492
LNM Crosslines singlebeam and multibeam combined	83.06
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	N/A
LNM shoreline/nearshore investigations	N/A
Number of Bottom Samples	5
Number of items investigated that required additional time/effort in the field beyond the above survey operations	N/A
Total number of square nautical miles	41.72

**Table 1: Hydrographic Survey Statistics**

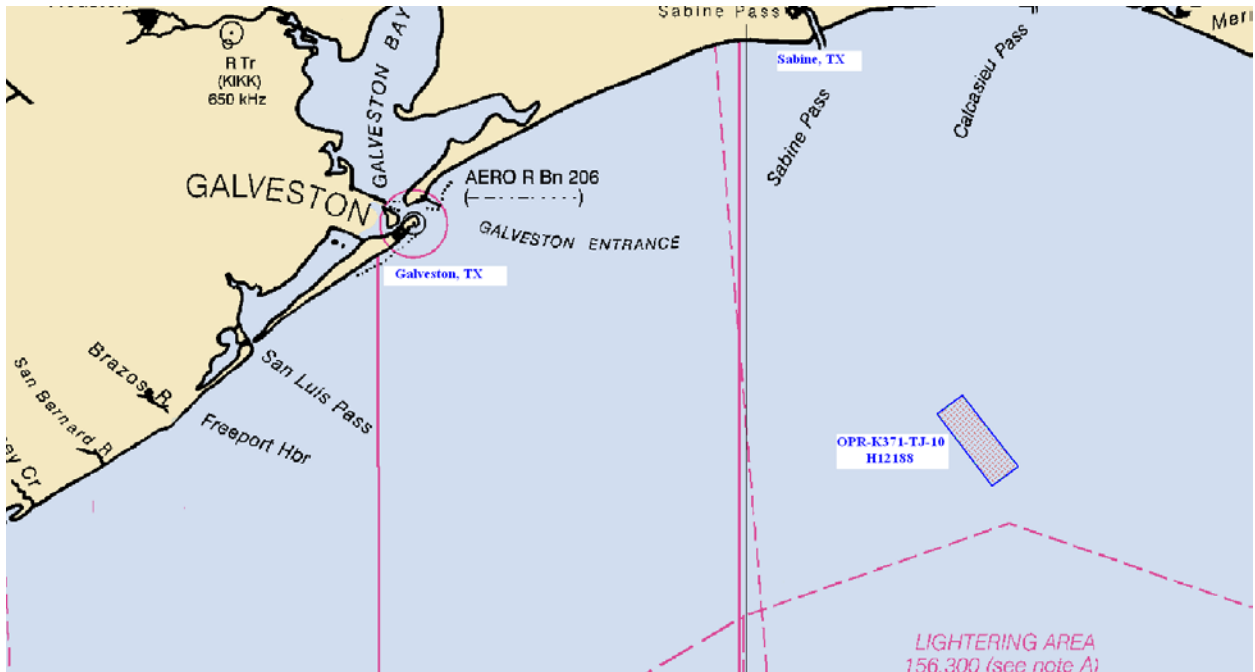


Fig. 1: H12188 Small Scale Survey Area.

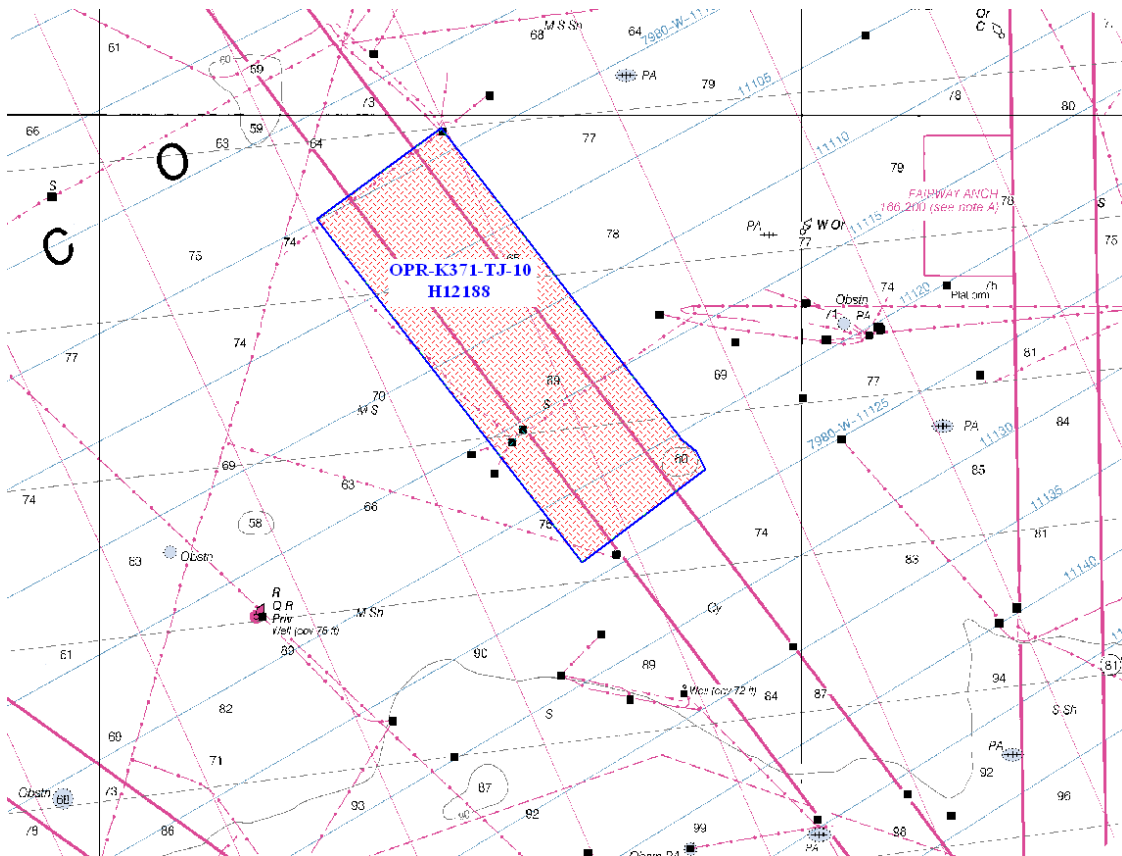


Fig. 2: H12188 Large Scale Survey Area.

Calendar Date	Julian Day
20-April-10	110
21-April-10	111
22-April-10	112
26-April-10	116
27-April-10	117
28-April-10	118
5-May-10	125
6-May-10	126
8-May-10	128
9-May-10	129
10-May-10	130
11-May-10	131
12-May-10	132

**Table 2: SSS/ MBES Acquisition Dates**

**B. DATA ACQUISITION AND PROCESSING** *See also H-Cell Report.*

Refer to *OPR-K371-TJ-10 Data Acquisition and Processing Report (DAPR)\** for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the *DAPR\** are included in this descriptive report.

**B.1 EQUIPMENT AND VESSELS**

Data were acquired by NOAA Ship *Thomas Jefferson*, Hydrographic Survey Launches 3101 and 3102. NOAA Ship *Thomas Jefferson* acquired Reson 7125 multibeam echo sounder (MBES) soundings, Klein 5000 Side Scan Sonar (SSS) imagery, and sound velocity profiles. Launch 3101 and 3102 acquired Reson 7125 SV multibeam echosounder soundings and sound velocity profiles. Sea bed samples were collected by NOAA Ship *Thomas Jefferson*. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the *DAPR\**.

**B.2 QUALITY CONTROL**

**B.2.1 System Certification and Calibration**

Refer to NOAA Ship *Thomas Jefferson's DAPR\** and *Hydrographic Systems Readiness Report (HSRR)\*\** for a complete description of system integration and initial calibration results for equipment and sensors used for this survey. *\*Filed with H-Cell deliverables.*  
*\*\*Submitted with original field records.*

### B.2.2 Sounding Coverage

As per the Letter Instructions, this survey was conducted using 200% SSS coverage with concurrent MBES bathymetry in areas anticipated to be less than 20m, comprising the easternmost ¼ of the survey area. Object detection MBES was acquired over additional areas determined to be less than 20m and not covered by 200% SSS. (See Figure 3) For water depths greater than 20 meters complete MBES bathymetry was acquired. *Concur.*

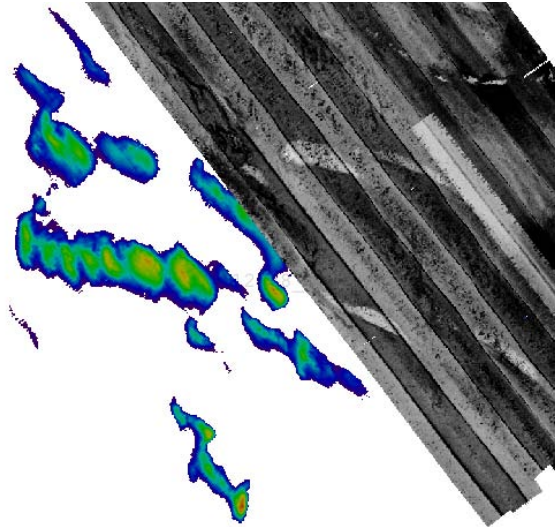


Fig. 3 Area of Object detection coverage.

200% sidescan was acquired with the exception of two (2) areas measuring 18m by 60m and 14m by 58m (see figure 3). These areas are not covered by MBES bathymetry or 200% sidescan sonar, however they are covered by the 100% sidescan mosaic and no navigationally significant features were seen. *Concur.*

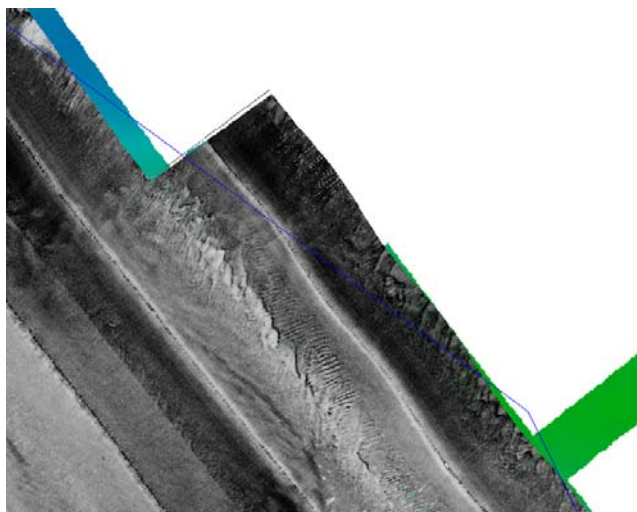
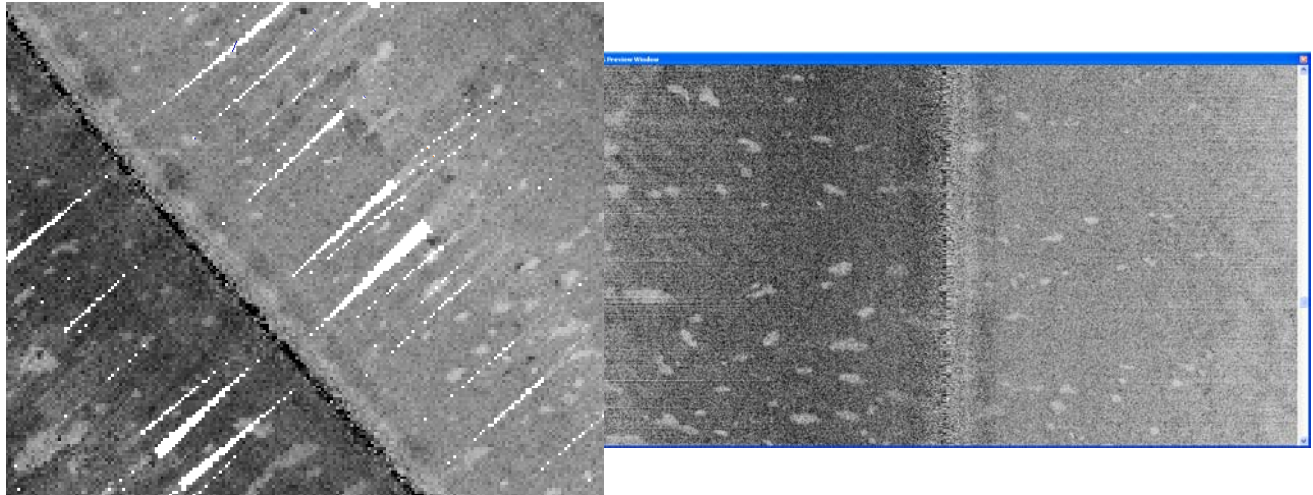


Fig. 4 MBES bathymetry and 200% sidescan coverage

The sidescan mosaics which represent 100% and 200% coverage show along track gaps in many of the individual GeoBars. Further examination of the sidescan waterfall showed no gaps in coverage (see Figure 4). The gaps are caused by the yaw of the vessel. *Concur.*



**Fig. 5 Along track SSS gaps and waterfall.**

**B.2.3 Crosslines**

Multibeam echosounder cross-lines totaling 83.06 LNM, approximately 6.2% of the total multibeam hydrography, were acquired during the course of the survey.

As per email dated 10 Sept, 2009 from AHB located in the Descriptive Report, Appendix 5V\*\*\*, quality control was performed using the standard deviation layer of the survey’s CUBE surface. Areas of unusually high standard deviation were investigated and resolved in processing, except where caused by areas of high bathymetric relief or as described in Section 2.5 Systematic Errors. *\*\*\*Appended to this report.*

**B.2.4 Junctions and Prior Surveys**

Survey H12187 junctions with H12188 to the North/Northwest. The difference in soundings between the two surveys is no greater than one foot. Survey H12189 junctions with H12188 to the South/Southeast. The difference in soundings between the two surveys is no greater than one foot.

<b>Registry #</b>	<b>Scale</b>	<b>Date</b>	<b>Field Party</b>	<b>Junction side</b>
H12187	1:40,000	2010	<i>Thomas Jefferson</i>	Northwest
H12189	1:40,000	2010	<i>Thomas Jefferson</i>	Southeast

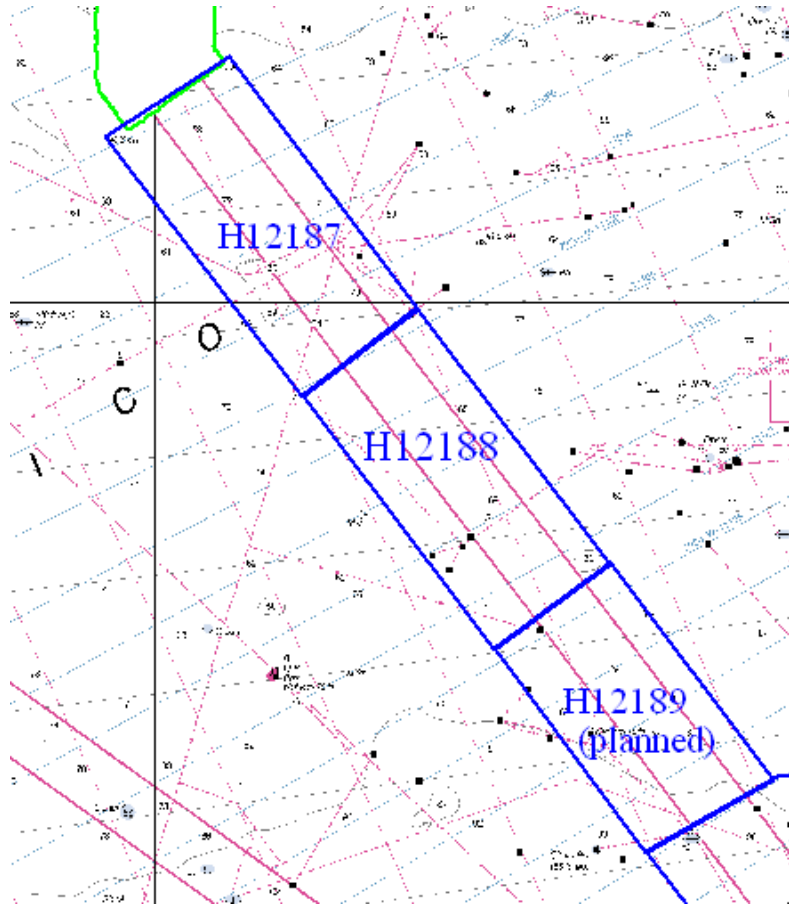


Fig 6: Junction Surveys.

### B.2.5 Systematic Errors

Some heave or pitch artifacts are present in the data on rougher sea days, and is most noticeable in deeper areas (See figure 7). *Concur.*

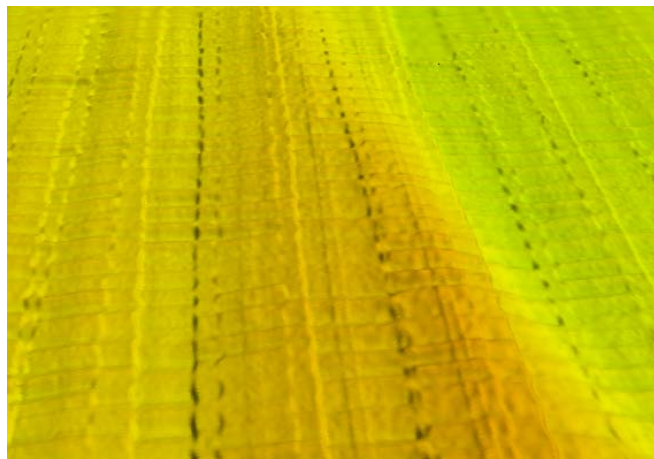


Fig 7: Heave artifact (80X exaggeration)

A tide artifact exists in some areas of the survey, although generally this does not exceed 20cm as shown in figure 8. *Concur.*

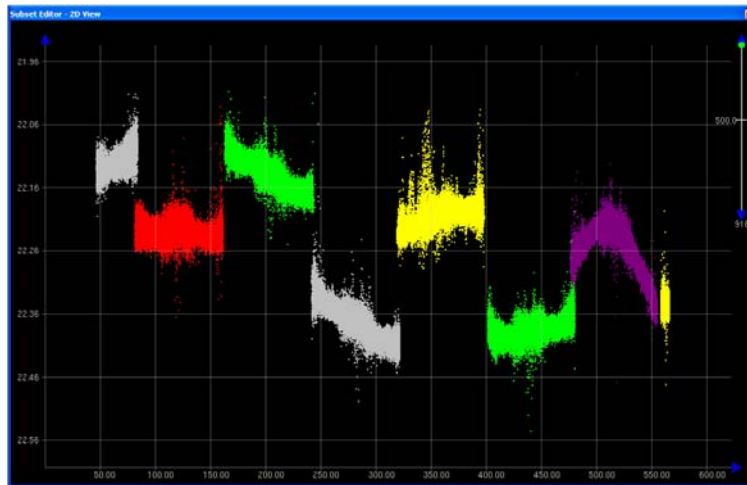


Figure 8: Tide artifact.

### B.3 CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to mean lower-low water (MLLW) using verified water levels from the Galveston Pleasure Pier (8771510) using preliminary zoning accepted as final zoning and illustrated in Figure 9. *Concur.*

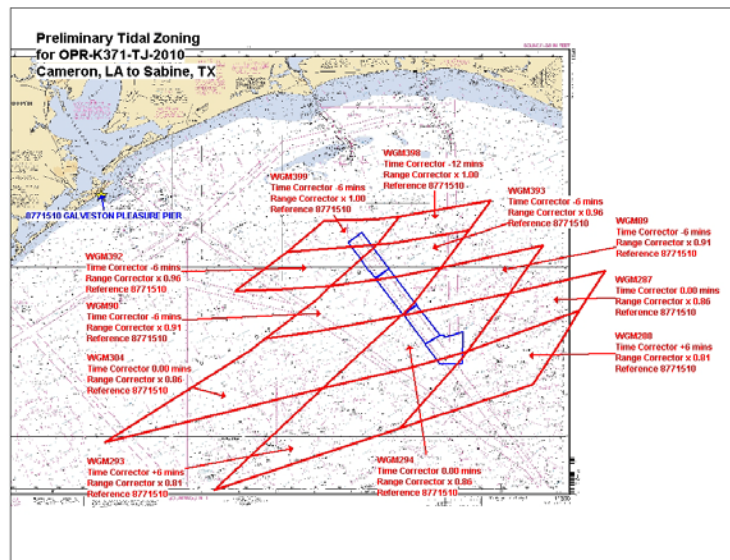


Fig 9: Final Tide Zoning

All other datum reduction procedures conform to those outlined in the DAPR\*.

All methods and instruments used for sound velocity correction were as described in the DAPR\*. A table detailing all sound velocity casts is located in Separate II\*\* of this Descriptive Report.

*\*Filed with H-Cell deliverables. \*\*Submitted with original field records.*

Sound velocity corrections for this survey were applied using the ship’s and launches’ Moving Vessel Profiler (MVP) and Conductivity, Temperature and Depth (CTD) profiler. **Concur.**

All SVP casts were applied in CARIS using Nearest in time. **Concur.**

## B.4 DATA PROCESSING

### B.4.1 Total Propagated Uncertainty

For the 2010 field season, Total Propagated Uncertainty (TPU) parameters for sound, speed, and tides are calculated separately for each project. The project-specific parameters for OPR-K371-TJ-10, Survey H12188 are as follows:

Vessel	Tide Values Combined Measured & Zoning	Sound Velocity Values		
		CTD	MVP	Surface
S222	0.2m	4m/s	1m/s	0.2m/s
3101	0.2m	4m/s	n/a	0.2m/s
3102	0.2m	4m/s	n/a	0.2m/s

**Table 3: TPU Parameters**

These values were used as inputs to the TPU calculation in CARIS for all MBES data immediately following merge.

### B.4.2 BASE Surfaces and Mosaics

The following table describes all BASE Surfaces submitted as part of Survey H12188:

<i>Name of Surface</i>	<i>Resolution</i>	<i>Type</i>	<i>Purpose</i>
H12188_CUBE_NOAA_2m_Final	2m	CUBE	H12188 DTM
H12188_CUBE_NOAA_50cm_Final	50cm	CUBE	H12188 DTM
H12188_SSS_100_1m	1m	Mosaic	100% SSS Coverage
H12188_SSS_200_1m	1m	Mosaic	200% SSS Coverage

**Table 4: BASE Surfaces and Mosaics**

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to NOAA\_0.5m and NOAA\_2m for all main scheme surfaces, as requires for each of the various surface resolutions. The finalized surfaces were depth thresholded using values of 0.00m to 20.0m and 19.0m to 40.0m for the 50cm and

2m grids, respectively. Refer to the *2010 Data Acquisition and Processing Report\**, *2010 Field Procedures Manual*, and *CARIS HIPS and SIPS 7.0 manual* for further discussion. **Concur.**  
**\*Filed with H-Cell deliverables.**

### **B.4.3 Data Cleaning**

The survey data was cleaned using the swath and subset editor tools in CARIS. All areas of the BASE surface that indicated a high standard deviation were examined and cleaned as required such that no residual errors exist in the surface that exceed the IHO order 1 depth accuracy requirements.

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

***See also H-Cell Report.***

As per FPM section 5.2.3.2.3 a HVCR report was not filed as no horizontal and vertical control stations were established by the field party for this survey. A summary of horizontal and vertical control for this survey follows. **Concur.**

### **C.1.1 Horizontal Control**

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacons at Angleton, TX (301Khz) and English Turn, LA (293Khz) were used during this survey. **Concur.**

No horizontal control stations were established by the field party for this survey. **Concur.**

### **C.1.2 Vertical Control**

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at the Galveston Pleasure Pier, TX (8771510) will serve as datum control for H12188. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 12 May 2010\*\* in accordance with the FPM and project letter instructions. Final smooth tide letter was received 25 May 2010\*\*, and states preliminary zoning is accepted as the final zoning.

**\*\*Appended to this report (Appendix V).**

## **D. RESULTS AND RECOMMENDATIONS**

***See also H-Cell Report.***

### **D.1 Chart Comparison**

#### **D.1.1 Chart 11330 Comparison**

Survey H12188 was compared to Chart 11330, (20<sup>th</sup> Ed., 11/01/2009, 1:250,000), the largest scale chart covering the survey area. Generally soundings agreed with the chart to within 3 feet throughout the survey area. Charted depths were slightly shoal of the current surveyed depths.

The largest discrepancy is in location 28° 56.39'N, 093°28.3'W. The charted depth at this location is 65feet, but the current findings are as much as 7 feet deeper. **Concur.**

### D.1.2 ENC US3GC02M Comparison

In general the soundings agree within 1 meter. Where there are differences, surveyed depths tend to be deeper. In some cases there is up to almost a 2 meter difference. **Concur.**

## D.2 Additional Results

### D.2.1 Automated Wreck and Obstruction Information Service (AWOIS) Items

There are no AWOIS items within the sheet limits of survey H12188. **Concur.**

### D.2.4 Shoreline

There is no shoreline within the sheet limits of survey H12188. **Concur.**

### D.2.5 Charted Features

### D.2.6 Charted Pipelines and Cables

Several charted cable and pipeline areas are within the survey area. Multiple uncovered pipelines were found within this survey. Some of pipelines were observed in areas where pipelines were not noted on the chart. **Concur.**

These findings were not navigationally significant, and therefore the hydrographer recommends no change to the chart. **Concur**

### D.2.7 Bridges, Ferry Routes, and Overhead Cables

There are no ferry routes, bridges, or overhead cable crossings within the limits of the survey. **Concur.**

## D 2.8 Platform Structures

There were two charted platforms within the survey limits. None of the charted structures were present within the survey area. An additional platform\* was located within close proximity to the survey limits of H12188, near the survey area's uppermost corner. This platform\* **is also no longer present at its charted location.** ~~is addressed in Survey H12187 of the same project, OPR-K371-TJ-10.~~ **\*See uncharted obstruction feature in Appendix II of this report.**

The Hydrographer recommends removing charted platforms from the ~~charts~~ **survey area.** **Concur.**

### **D.3 Dangers to Navigation and Shoals**

#### **D.3.1 Dangers to Navigation**

No dangers to navigation were found or reported to the NOAA's Office of Coast Survey.

*Concur.*

#### **D.3.2 Shoals**

There were no significant uncharted shoals discovered during this survey. *Concur.*

### **D.4 Aids to Navigation**

There are no charted Aids to Navigation (ATON) within the limits of H12188. *Concur.*

### **D.5 Coast Pilot Information**

The Hydrographer has no recommendations for changes or addenda to the Coast Pilot. *Concur.*

### **D.6 Miscellaneous**

#### **Bottom Samples**

Bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A complete description of all bottom samples acquired during Survey H12188 is contained in the Pydro PSS. A total of five bottom samples were acquired. A list of all bottom samples acquired during Survey H12188 is also contained in Appendix V of this report.

*Concur.*

#### **Environmental Conditions and Notes**

No significant environmental conditions occurred during the survey.

### **D.8 Adequacy of Survey**

This survey is considered complete and adequate to supersede charted depths and features within the area defined in the file H12188\_outline.hob, located in Appendix 3, Final Progress Survey Outline\*, except as noted in this report. *\*Appended to this report.*

#### **Summary and Recommendations for Additional Work**

No additional work is needed to complete this survey. No changes significant to navigation have been noted and it is recommended that this survey receive normal processing priority.

*Concur.*


**E. APPROVAL**


As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Surveys Division’s *Field Procedures Manual*, and NOS *Hydrographic Surveys Specifications and Deliverables*. Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to N/CS33, Atlantic Hydrographic Branch.

The Data Acquisition and Processing Report for OPR-K371-TJ-10 is submitted separately and contains additional information relevant to this survey.

Approved and Forwarded:

  
 Mark Blankenship  
 2010.07.27  
 12:34:46 -04'00'

  
 Digitally signed by Shepard  
 Smith  
 Date: 2010.07.27 13:50:01 -04'00'

LT Mark A. Blankenship, NOAA  
 Field Operations Officer

CDR Shepard M. Smith, NOAA  
 Commanding Officer

In addition, the following individuals were also responsible for overseeing data acquisition and processing of this survey:

Survey Managers:

  
 Michael C. Davidson  
 2010.07.27 17:47:58  
 Z

  
 Michael C. Davidson  
 2010.07.27 17:48:15  
 Z

ENS Lindsay Morrison, NOAA  
 Junior Officer

ENS Marina Kosenko, NOAA  
 Junior Officer

**Appendix I**  
**Dangers to Navigation**

**-None reported**

## **Appendix II**

### **Survey Features Report**

#### **1. AWOIS Items**

0

#### **2. Charted Features**

0

#### **3. Uncharted Features**

1

# DR Uncharted

**Registry Number:** H12188  
**State:** Louisiana  
**Locality:** Northern Gulf of Mexico  
**Sub-locality:** 45 NM Southeast of Sabine, TX  
**Project Number:** OPR-K371-TJ-10  
**Survey Date:** 10/15/2010

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11330	19th	08/01/2008	1:250,000 (11330_1)	[L]NTM: ?
11340	74th	08/01/2009	1:458,596 (11340_1)	USCG LNM: 9/28/2010 (9/28/2010) NGA NTM: 10/2/2010 (10/2/2010)
1116A	73rd	08/01/2008	1:458,596 (1116A_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

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

## Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Obstruction - Unknown Depth	Obstruction	[None]	28° 59' 36.8" N	093° 30' 13.6" W	---

## **1 - DR\_UnCharted**

## 1.1) Obstruction - Unknown Depth

### Survey Summary

**Survey Position:** 28° 59' 36.8" N, 093° 30' 13.6" W  
**Least Depth:** [None]  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2010-288.12:02:19 (10/15/2010)  
**GP Dataset:** ChartGPs - Digitized  
**GP No.:** 2  
**Charts Affected:** 11330\_1, 1116A\_1, 11340\_1, 411\_1

#### Remarks:

Field unit disproved the charted offshore production platform by visual examination at the ocean surface. However, the multibeam and sidescan coverage of the seafloor at this site is incomplete. The sidescan and multibeam data suggest that the debris associated with the former platform may continue outside of survey coverage.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	2	0.00	000.0	Primary

### Hydrographer Recommendations

Recommend to chart an Obstruction (snag/stump, depth unknown) at the survey position.

### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** CATOBS - 1:snag / stump  
 QUASOU - 2:depth unknown  
 SORDAT - 20100512  
 SORIND - US,US,graph,H12188  
 TECSOU - 2,3:found by side scan sonar,found by multi-beam  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur. Add an Obstruction (snag/stump, depth unknown) to the chart at the survey position.

### Feature Images

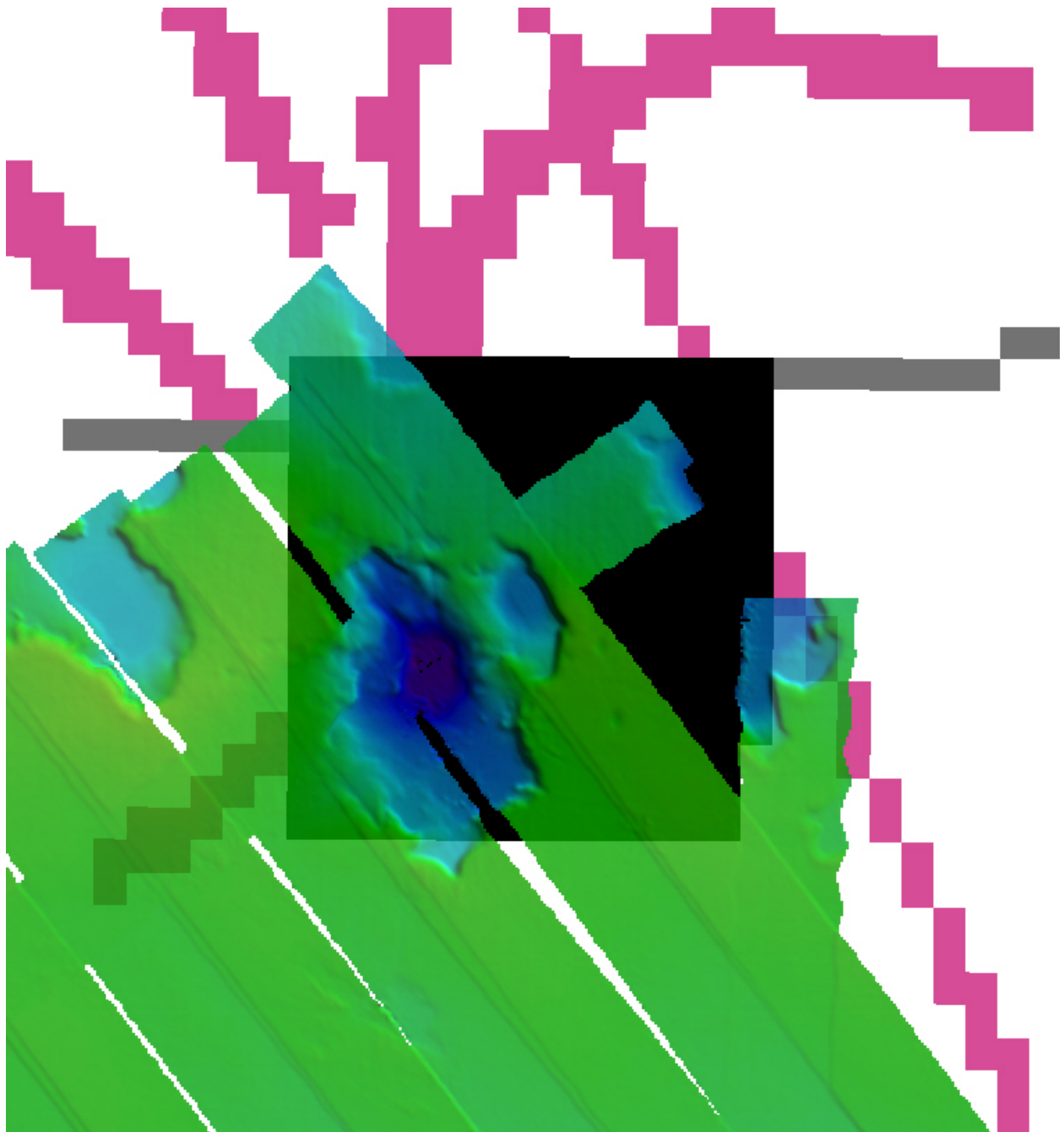
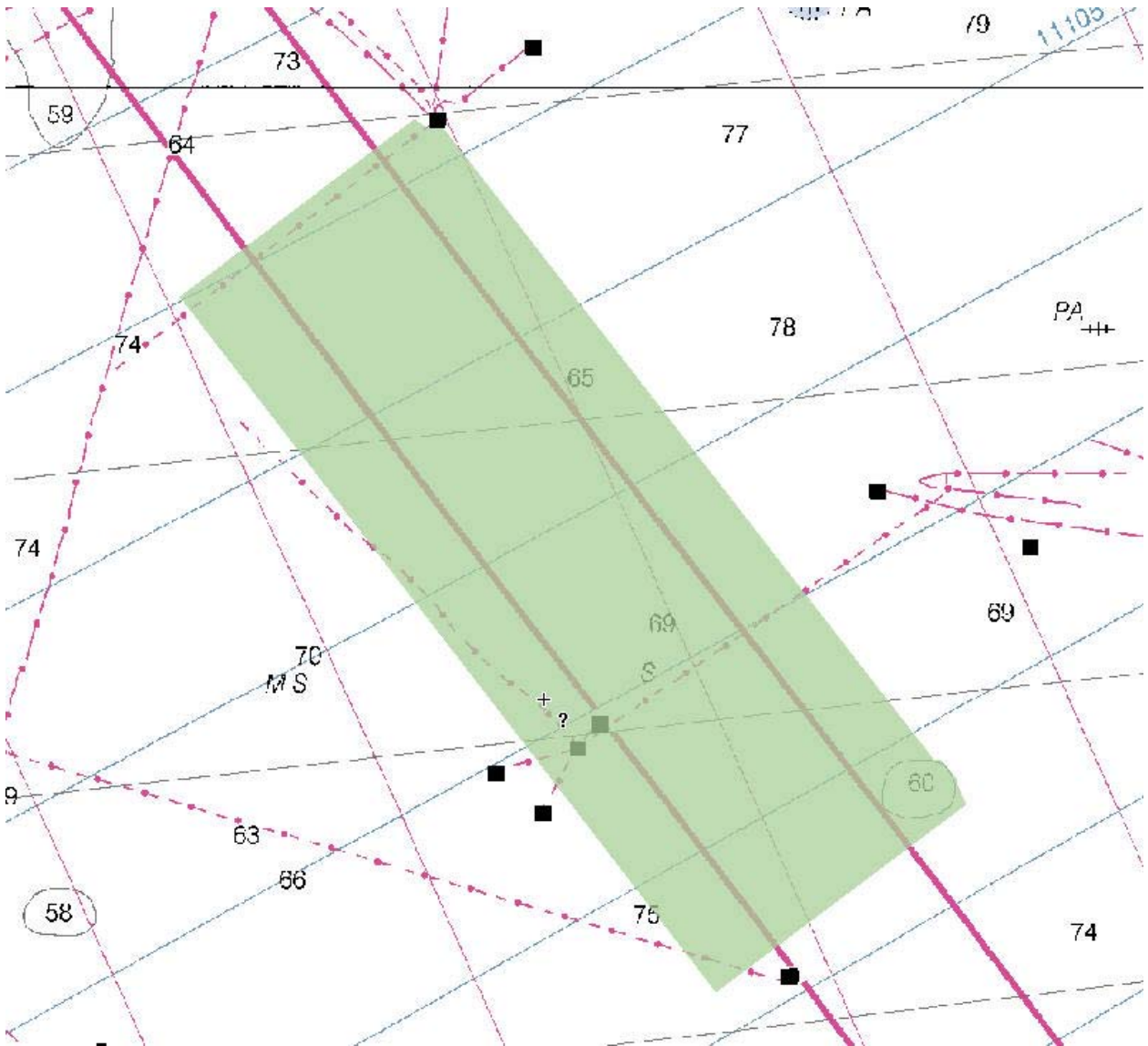


Figure 1.1.1

# Appendix III

## Progress Sketch



## **Appendix IV**

### **Tides and Water Levels**

**1. Request for Approved Tides**

**2. Final Tide Notes**



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NOAA Ship THOMAS JEFFERSON (MOA-TJ)  
439 West York St  
Norfolk, VA 23510-1145

May 12, 2010

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: CDR Shep Smith, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. Six Minute Water Level data (Co-ops web site)

Transmit data to the following:

NOAA/NOS/Atlantic Hydrographic Branch  
N/CS33, Building #2  
439 West York Street  
Norfolk, VA 23510  
ATTN: Chief AHB

Commanding Officer  
NOAA Ship Thomas Jefferson (S222)  
439 West York St.  
Norfolk, VA 23510  
ATTN: CO Thomas Jefferson

These data are required for the processing of the following hydrographic survey:

Project No.: OPR-K371-TJ-10  
Registry No.: H12188  
State: Louisiana  
Locality: Northern Gulf of Mexico  
Sublocality: 45 NM Southeast of Sabine, TX

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from Pydro

cc: N/CS33



---

Year_DOY	Min Time	Max Time
2010_110	14:37:53	22:16:02
2010_111	14:55:53	22:04:28
2010_112	15:07:50	20:34:11
2010_116	13:51:46	23:55:35
2010_117	14:35:03	23:55:25
2010_118	00:12:44	20:41:48
2010_125	12:21:56	23:45:12
2010_126	00:25:44	22:50:10
2010_128	14:18:11	23:48:26
2010_129	00:13:16	23:54:45
2010_130	00:33:17	13:30:29
2010_131	14:39:15	20:41:06
2010_132	02:04:09	02:38:49



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
National Ocean Service  
Silver Spring, Maryland 20910

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** May 25, 2010

**HYDROGRAPHIC BRANCH:** Atlantic  
**HYDROGRAPHIC PROJECT:** OPR-K371-TJ-2010  
**HYDROGRAPHIC SHEET:** H12188

**LOCALITY:** Northern Gulf of Mexico 45 NM Southeast of Sabine, Tx  
**TIME PERIOD:** April 20 - May 12, 2010

**TIDE STATION USED:** 877-1510 Galveston Pleasure Pier, Tx  
Lat. 29° 17.12' N Long. 94° 47.37' W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.563 meters

**REMARKS: RECOMMENDED ZONING**

Preliminary zoning is accepted as the final zoning for project OPR-K371-TJ-2010, H12188, during the time period between April 20 to May 12, 2010.

Please use the zoning file "K371TJ2010CORP" submitted with the project instructions for Cameron, LA to Sabine, TX. Zones WGM89, WGM90, WGM294 and WGM393 are the applicable zones for H12188.

**Refer to attachments for zoning information.**

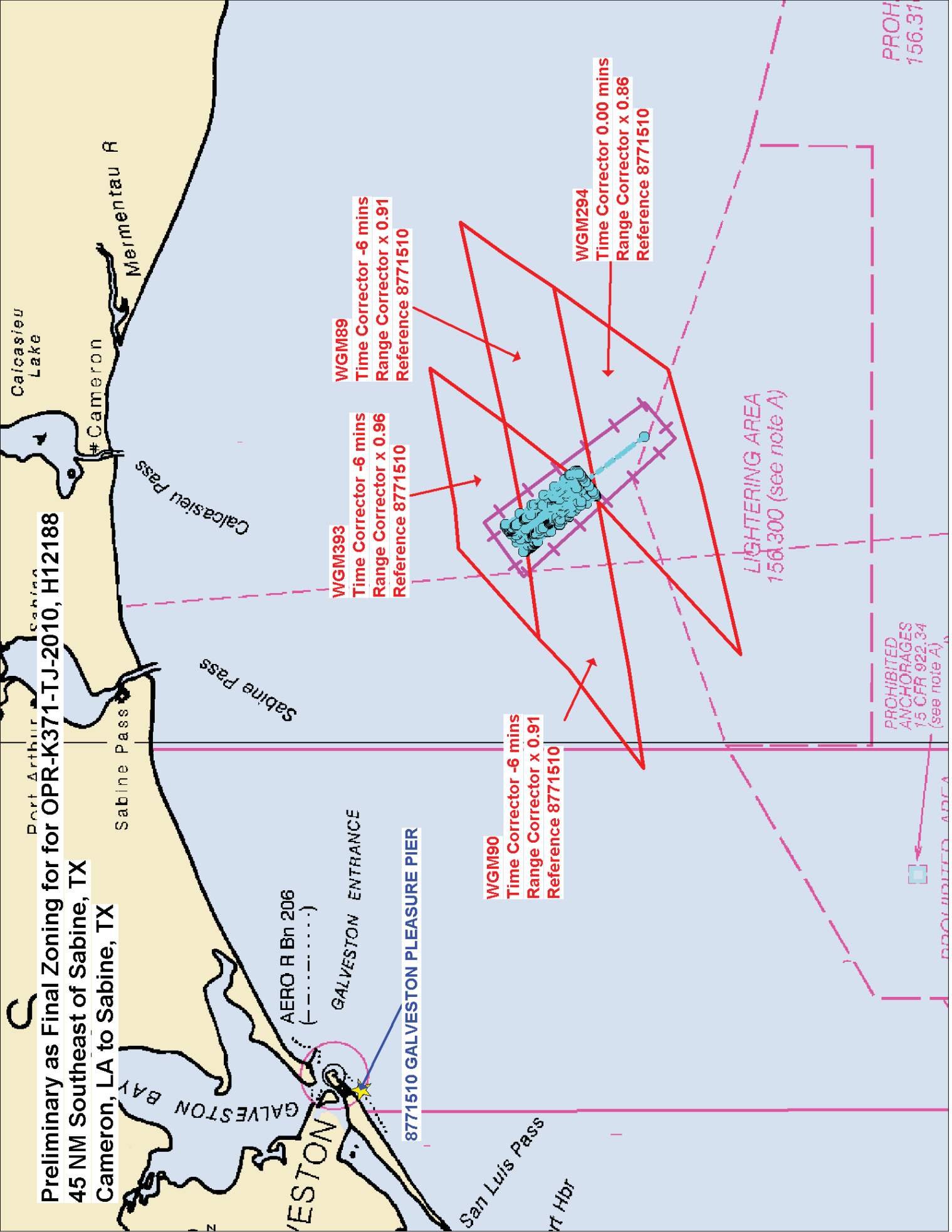
**Note 1:** Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

**Peter J. Stone**

Digitally signed by Peter J. Stone  
DN: cn=Peter J. Stone, o=CO-OPS, ou=NOAA/NOS,  
email=peter.stone@noaa.gov, c=US  
Date: 2010.05.25 12:01:52 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION





**Preliminary as Final Zoning for OPR-K371-TJ-2010, H12188**

**45 NM Southeast of Sabine, TX  
Cameron, LA to Sabine, TX**

**WGM393**  
Time Corrector -6 mins  
Range Corrector x 0.96  
Reference 8771510

**WGM89**  
Time Corrector -6 mins  
Range Corrector x 0.91  
Reference 8771510

**WGM90**  
Time Corrector -6 mins  
Range Corrector x 0.91  
Reference 8771510

**WGM294**  
Time Corrector 0.00 mins  
Range Corrector x 0.86  
Reference 8771510

**LIGHTERING AREA**  
156.300 (see note A)

**PROHIBITED ANCHORAGES**  
15 CFR 922.34  
(see note A)

**PROHIBITED AREA**  
156.317

Calcasieu Lake

#Cameron

Mermentau R

Calcasieu Pass

Sabine Pass

AERO R Bn 206

GALVESTON ENTRANCE

8771510 GALVESTON PLEASURE PIER

San Luis Pass

PROHIBITED AREA

## **Appendix V**

### **Supplemental Survey Records & Correspondence**



**UNITED STATES DEPARTMENT COMMERCE**

National Oceanic and Atmospheric Administration  
Office of Marine and Aviation Operations  
NOAA Ship *Thomas Jefferson* S-222  
439 West York Street  
Norfolk, VA 23510-1114

August 17, 2010

Memorandum For: Nautical Data Branch

From: CDR Shepard M. Smith, NOAA  
Commanding Officer, NOAA Ship *Thomas Jefferson*

Subject: Coast Pilot Report, H12188

Digitally signed by  
Shepard Smith  
Date: 2010.08.20  
08:21:34 -04'00'

The relevant Coast Pilot sections for this survey have been reviewed, and no additions or corrections have been noted.

**Subject:** Re: Crossline comparison

**From:** Chris van Westendorp <Christiaan.VanWestendorp@noaa.gov>

**Date:** Thu, 10 Sep 2009 13:00:35 -0400

**To:** "mark.blankenship" <Mark.Blankenship@noaa.gov>

**CC:** LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>, Castle Parker <Castle.E.Parker@noaa.gov>, Edward Owens <Edward.Owens@noaa.gov>, LT Jasper Schaer <jasper.schaer@noaa.gov>, CDR Shep Smith <Shep.Smith@noaa.gov>, Daniel Wright <Daniel.Wright@noaa.gov>

Mark,

Per 5.1.4.3 of the HSSD, AHB authorizes TJ to use the Standard Deviation layer to conduct surface difference comparison and analysis on future survey submissions of multibeam data. This meets the crossline comparison requirement laid out in HSSD.

Please let me know if you have any questions or need for further clarification.

R/

LCDR Chris van Westendorp, NOAA

mark.blankenship wrote:

Chris,

You mentioned in the meeting today that AHB was not going to require the multiple CUBE surface comparison, instead allowing us to use a single surface standard deviation layer to do our checks with. Is there any memo coming out for that?

Mark

LCDR Chris van Westendorp <[christiaan.vanwestendorp@noaa.gov](mailto:christiaan.vanwestendorp@noaa.gov)>

Atlantic Hydrographic Branch

NOAA OCS



## AHB COMPILATION LOG

<b>General Survey Information</b>	
REGISTRY No.	H12188
PROJECT No.	OPR-K371-TJ-10
FIELD UNIT	NOAA SHIP THOMAS JEFFERSON
DATE OF SURVEY	20100420 - 20100512
LARGEST SCALE CHART	<i>11330_1, edition 20, 20091101, 1:250,000</i>
ADDITIONAL CHARTS	N/A
SOUNDING UNITS	<b>FEET</b>
COMPILER	Jasmine Cousins / James J. Miller II

<b>Source Grids</b>	<b>File Name</b>
	T:\SAR\H12188_K371_TJ\AHB_H12188\SAR Final Products\GRIDS
	<b>H12188_CUBE_NOAA_2m_Final.csar</b> <b>H12188_CUBE_NOAA_50cm_Final.csar</b>
<b>Surfaces</b>	<b>File Name</b>
	T:\SAR\H12188_K371_TJ\AHB_H12188\COMPILE\Working
<i>Combined</i>	<b>H12188_4m_Combined.csar</b>
<i>Interpolated TIN</i>	\Interpolated TIN\H12188_12m_InterpTIN.csar
<i>Shifted Interpolated TIN</i>	\Shifted Surface\H12188_12m_InterpTIN_shifted.csar
<b>Final HOBs</b>	<b>File Name</b>
	T:\SAR\H12188_K371_TJ\AHB_H12188\COMPILE\Final_Hobs
<i>Survey Scale Soundings</i>	<b>H12188_SS_Soundings.hob</b>
<i>Chart Scale Soundings</i>	<b>H12188_CS_Soundings.hob</b>
<i>Contour Layer</i>	<b>H12188_Contours.hob</b>
<i>Feature Layer</i>	<b>H12188_Features.hob</b>
<i>Meta-Objects Layer</i>	<b>H12188_MetaObjects.hob</b>
<i>Blue Notes</i>	<b>H12188_BlueNotes.hob</b>
<i>ENC Retain Soundings</i>	N/A

<b>Meta-Objects Attribution</b>	
<b>Acronym</b>	<b>Value</b>
<b>M_COVR</b>	
CATCOV	1 – coverage available
SORDAT	20100512
SORIND	US,US,graph,H12188
<b>M_QUAL</b>	
CATZOC	6 – zone of confidence U (data not assessed)
INFORM	NOAA Ship Thomas Jefferson
POSACC	10.0 m
SORDAT	20100512
SORIND	US,US,graph,H12188
SUREND	20100512
SURSTA	20100420
<b>DEPARE</b>	
DRVALV 1	59.000 ft
DRVALV2	83.000 ft
SORDAT	20100512
SORIND	US,US,graph,H12188

<b>M_CSCL</b>	
CSCALE	N/A
SORDAT	N/A
SORIND	N/A

**SPECIFICATIONS:**

- I. COMBINED SURFACE:
  - a. Number of SAR Final Grids: 2
  - b. Resolution of Combined (m): 4 m
  
- II. SURVEY SCALE SOUNDINGS (SS):
  - a. Attribute Name: Depth
  - b. Selection criteria: Radius, Shoal bias
  - c. Radius value is: mm at map scale
    - i. Use single-defined radius: 1.00
    - ii. And/Or use radius table file: N/A [XXk = chart scale]
  - d. Queried Depth of All Soundings
    - i. Minimum: 18.496 m
    - ii. Maximum: 25.106 m
  
- III. INTERPOLATED TIN SURFACE:
  - a. Resolution (m): 12 m
  - b. Interpolation method: Natural Neighbor
  - c. Shift value: -0.75 ft [only include applicable shift values]  
[-0.75 feet (And/Or) -0.75 fathoms]
  
- IV. CONTOURS:
  - a. Attribute Name: Depth
  - b. Use a Depth List: H12188\_depth\_contours.txt
  - c. Output Options: Create contour lines
    - i. Line Object: DEPCNT
    - ii. Value Attribute: VALDCO
  
- V. FEATURES:
  - a. Number of Chart Features: 4 [all features included in H-Cell]
  - b. Number of Non-Chart Features: 0 [all features submitted by field & not included in H-Cell]
  
- VI. CHART SURVEY SOUNDINGS (CS):
  - a. Number of ENC CS Soundings: 5
  - b. Attribute Name: Depth
  - c. Selection criteria: Radius, Shoal bias
  - d. Radius value is: Distance on the ground (m)
    - i. Use single-defined radius: 5,600.00 m
    - ii. And/Or use radius table file: N/A [XXk = chart scale]
    - iii. Enable Filter: Interpolated !=1
  - e. Number Survey CS Soundings: 8
  
- VII. NOTES:
 

[Type text]

**ATLANTIC HYDROGRAPHIC BRANCH  
H-CELL REPORT to ACCOMPANY  
SURVEY H12188 (2010)**

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 50cm and 2m 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 1mm at the 1:250,000 chart scale. A TIN was created from the survey scale soundings, from which an interpolated surface was generated. The chart scale soundings were selected from the filtered interpolated surface using a single defined radius of 5,600m (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.

Depth contours were created from a shifted interpolated TIN surface of 12m resolution, with the contours in feet (60 ft). 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 H12188 AHB Compilation Log contained within this document. The Final HOB files include depth areas (DEPARE), depth contours (DEPCNT), soundings (SOUNDG), meta-objects (M\_COVR, M\_QUAL), cartographic Blue Notes (\$CSYMB), and features (OBSTRN, SBDARE, SNDWAV).

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 HOM ENC 3.3. Quality assurance and topology checks were conducted using CARIS S-57 Composer 2.1 validation tests and DKART Inspector 5.0 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:

TABLE 1 - Contents of H-Cell Files			
H12188_CS.000		Scale 1:250,000	
Object Class Types	Geographic	Cartographic	Meta
S-57 Object Acronyms	DEPARE	\$CSYMB	M_COVR
	OBSTRN		M_QUAL
	SBDARE		
	SNDWAV		
	SOUNDG		
H12188_SS.000		Scale 1:40,000	
Object Class Types	Geographic		
S-57 Object Acronyms	DEPCNT		
	SOUNDG		

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

Survey H12188 (2010) junctions with survey H12187 (2010) to the north, which is currently undergoing Survey Acceptance Review. Most present survey depths compare within 2 feet of survey H12187.

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

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

CARIS Bathy DataBASE version 2.1/SP1/HF10

CARIS Bathy DataBASE version 2.3/HF16

CARIS Bathy DataBASE version 3.0/HF5

CARIS HIPS and SIPS version 7.0/SP2/HF3

CARIS S-57 Composer version 2.1/HF4

CARIS HOM ENC version 3.3/SP3/HF8

DKART Inspector version 5.0

HSTP Pydro version 10.9 (r3015)

#### **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**

#### **11330 (20th Edition, NOV/09)**

Mermentau River to Freeport

LA-TX

Corrected through NM 09/11/2010

Corrected through LNM 08/31/2010

Scale 1:250,000

### **ENC COMPARISON**

#### **US3GC02M**

Mermentau River to Freeport

Edition 18

Application Date 2010/05/11

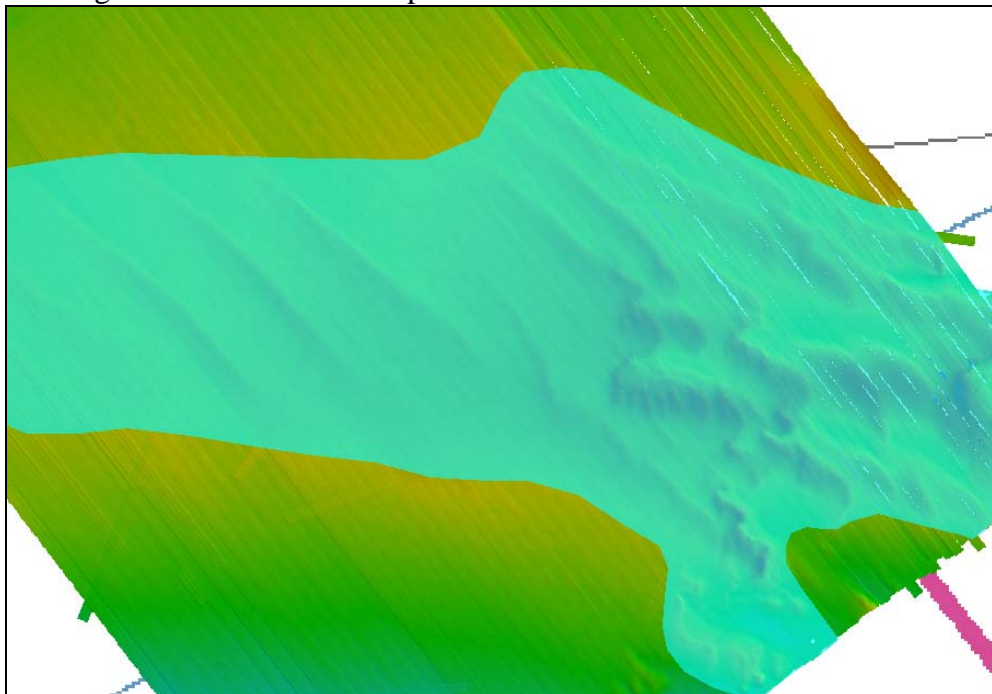
Issue Date 2010/08/04

Chart 11330

### **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 exception is noted:

1. One sandwave area (SNDWAV) was included with the H-Cell. This area was defined by undulating sandwaves with an amplitude of 1m or more.



## **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 and Appendix I and II of the DR for further recommendations by the hydrographer.

**APPROVAL SHEET  
H12188**

**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.



Jasmine  
Cousins  
2010.10.19  
16:19:32 Z

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**ENS Jasmine Cousins, NOAA**  
Atlantic Hydrographic Branch



James J. Miller II  
2010.10.19  
10:04:48 -04'00'

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**James J. Miller II**  
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: \_\_\_\_\_  
**CDR Richard T. Brennan, NOAA**  
Chief, Atlantic Hydrographic Branch