

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. David Evans and Associates, Inc.

Registry No. H11836

LOCALITY

State Louisiana

General Locality Gulf of Mexico

Sublocality Blind Bay

2009

CHIEF OF PARTY

Jonathan L. Dasler, PE (OR) , PLS (OR,CA)

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DATE _____

NOAA FORM 77-28 (11-72) <p style="text-align: center;">U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</p> <p style="text-align: center;">HYDROGRAPHIC TITLE SHEET</p>	REGISTRY No H11836
INSTRUCTIONS – The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.	FIELD No David Evans and Associates, Inc.
<p>State <u>Louisiana</u></p> <p>General Locality <u>Gulf of Mexico</u></p> <p>Sub-Locality <u>Blind Bay</u></p> <p>Scale <u>1:10,000</u> Date of Survey <u>June 22, 2008 -August 20, 2008 and January 31 , 2009</u></p> <p>Instructions dated <u>March 10, 2008</u> Project No. <u>OPR-J977-DE-08</u></p> <p>Vessel <u>R/V Taku and R/V Chinook</u></p> <p>Chief of party <u>Jonathan L. Dasler, PE (OR) , PLS (OR,CA)</u></p> <p>Surveyed by <u>John Staly and Mike Hill</u></p> <p>Soundings by echo sounder, hand lead, pole <u>RESON 8101, Odom CV100, EdgeTech 4200-FS, EdgeTech 4200-HFL</u></p> <p>Graphic record scaled by <u>N/A</u></p> <p>Graphic record checked by <u>N/A</u> Automated Plot <u>N/A</u></p> <p>Verification by <u><i>Atlantic Hydrographic Branch (bold, red, italic font)</i></u></p> <p>Soundings in <u>Feet at MLLW</u></p>	
<p>REMARKS: <u>All times are UTC.</u></p> <p><u>The purpose of this contract is to detect and map debris for the Gulf of Mexico Marine Debris Project and provide NOAA with modern, accurate hydrographic survey data with which to update nautical charts of the assigned area.</u></p>	
<p>SUBCONSULTANTS: <u>Zephyr Marine, P.O. Box 1575, Petersburg, AK 99833</u></p> <p style="text-align: center;"><u>John Oswald and Associates, 2000 E Dowling Road, Suite 10, Anchorage, AK 99507</u></p> <p>Datum NAD83 - (UTM) Zone 16 North Projection</p>	

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Acronyms and Abbreviations

AHB	Atlantic Hydrographic Branch
AtoN	Aid to Navigation
AWOIS	Automated Wreck and Obstruction Information System
BAG	Bathymetric Attributed Grid
CO-OPS	Center for Operational Oceanographic Products and Services
COTR	Contracting Officer's Technical Representative
CUBE	Combined Uncertainty and Bathymetry Estimator
DAPR	Data Acquisition and Processing Report
DEA	David Evans and Associates, Inc.
DtoN	Danger to Navigation
DGPS	Differential Global Positioning System
ENC	Electronic Navigational Chart
HIPS	Hydrographic Information Processing System
IHO	International Hydrographic Organization
LNM	U.S. Coast Guard Local Notice to Mariners
MBES	Multibeam Echo Sounder
MCD	Marine Chart Division
MLLW	Mean Lower Low Water
NAD83	North American Datum of 1983
NM	U.S. Notice to Mariners
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NWLON	National Water Level Observation Network
OBSTRN	Obstruction
OFSPFL	Offshore Platform
QUASOU	Quality of Sounding
R/V	Research Vessel
SOW	Statement of Work
TECSOU	Technique of Sounding
TPU	Total Propagated Uncertainty
TXTDES	Text Description
UTM	Universal Transverse Mercator
VBES	Vertical Single Beam Echosoundings

Descriptive Report to Accompany Hydrographic Survey H11836
Project OPR-J977-DE-08
Gulf of Mexico, Louisiana
Blind Bay
Scale 1:10,000
June 2008 – January 2009
David Evans and Associates, Inc.
Lead Hydrographers: Jonathan L. Dasler, Jason C. Creech

A. AREA SURVEYED

David Evans and Associates, Inc. (DEA) conducted a hydrographic survey in the Gulf of Mexico. The survey area (Figure 1) is located in the state of Louisiana, from Blind Bay northerly to Willow Point. *Concur.*

The purpose of this survey was to provide accurate hydrographic data suitable for item detection and debris mapping in the project area. H11836 was conducted in accordance with the Statement of Work (SOW) for OPR-J977-DE-08, dated March 1, 2008. *Concur.*

The project instructions required 200% side scan sonar coverage of the survey area with single beam sonar data acquired in conjunction with side scan operations. The survey was conducted over a 40-meter set line spacing (50-meter side scan sonar range). Twenty-three (23) bottom samples were also acquired for this survey. Eight (8) Automated Wreck and Obstruction Information System (AWOIS) item investigations were located with H11836 survey area. The search radius of one additional AWOIS item, 14124, spans the junction between H11835 and H11836 and is discussed in H11835 descriptive report. *Concur.*

DEA acquired data from June 22, 2008 (Day Number 174) to August 20, 2008 (Day Number 233). During follow-on review and compilation of 100% and 200% side scan sonar contacts, one contact was reclassified from insignificant to significant. With prior approval from the project Contracting Officer's Technical Representative (COTR), DEA contracted TerraSond, Ltd. to perform a multibeam investigation of this contact. On January 31, 2009 (DN031), while in the area performing contract survey (S-J977-KR-TE-08), TerraSond, Ltd. investigated this contact as well as another contact previously investigated with multibeam by DEA for system comparison. Table 1 presents a detailed list of acquisition dates. *Concur.*

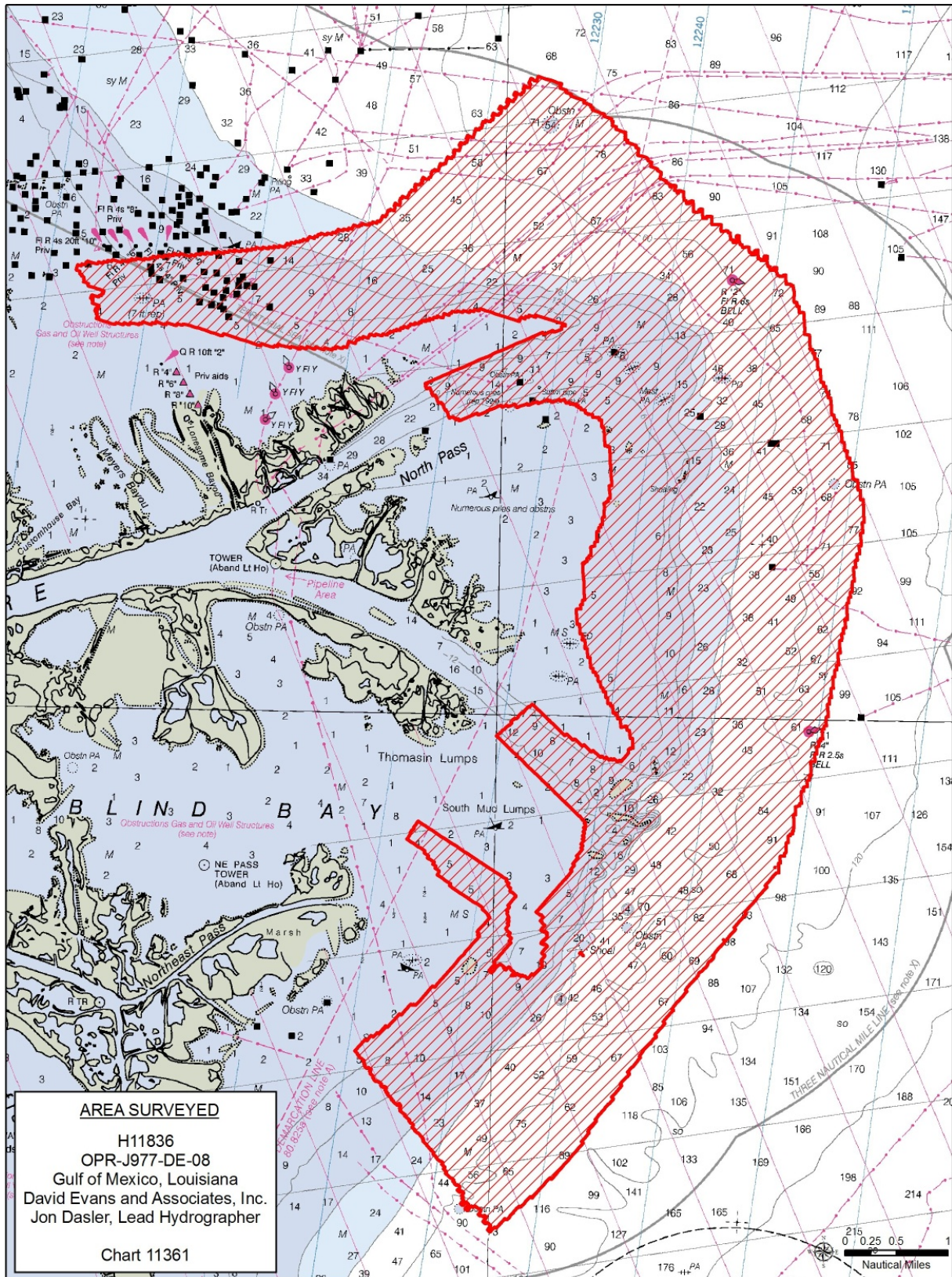


Figure 1. H11836 Survey Area

Table 1. H11836 Days of Acquisition

Dates of Acquisition	
Month and Year	Dates
June 2008	22-30
July 2008	01-05,07-13,15-25,30,31
August 2008	3,5,6,7,20
January 2009	31

Detailed survey statistics of H11836 are provided in Table 2.

Table 2. H11836 Survey Statistics

Survey Statistics	Research Vessels (R/V) TAKU and CHINOOK
VBES (mainscheme nm)	-
MBES (mainscheme nm)	-
LIDAR (mainscheme nm)	-
SSS (mainscheme nm)	-
Combination lines (SSS and VBES nm)	1391.73
Crosslines (VBES nm)	123.01
Lidar Crosslines (nm)	-
Developments (MBES nm)	39.42
Shoreline (nm)	2.24
Number of Bottom Samples	23
Number of Item Investigations that required additional survey effort (DPs)	-
Total number of square nautical miles	28.95

B. DATA ACQUISITION AND PROCESSING *see also Evaluation Report*

B1. Equipment

Equipment and vessels used by David Evans and Associate, Inc for data acquisition and survey operations are listed in Tables 3 and 4. The equipment and vessel used for the item investigation conducted by TerraSond, Ltd. is listed in Table 5. For detailed equipment and vessel specifications for *M/V Bella Marie* please refer to the *S-J977-KR-TE-08 Data Acquisition and Processing Report** submitted by TerraSond, Ltd under separate cover. **Concur. *TerraSond DAPR included with survey deliverables.**

Table 3. R/V TAKU Equipment and Vessel Specifications

R/V TAKU	
Builder	Armstrong Marine
Design	Catamaran
Length Overall	28'
Beam	10.5'
Draft, Maximum	2'
Cruising Speed	27 knots
Echosounders	ODOM CV-100 and RESON 8101
Side Scan Sonar	Edgetech 4200-FS and 4200-FSL
Sound Velocity Equipment	Applied Microsystems Smart SV&P
Positioning & Attitude	Applanix POS/MV 320 v4, Trimble DSM 132

Table 4. R/V CHINOOK Equipment and Vessel Specifications

R/V CHINOOK	
Builder	Armstrong Marine
Design	Catamaran
Length Overall	28'
Beam	10.5'
Draft, Maximum	2'
Cruising Speed	27 knots
Max Survey Speed	8.5 knots
Echosounders	Odom CV-100
Side Scan Sonar	Edgetech 4200-FS and 4200-FSL
Sound Velocity Equipment	Applied Microsystems Smart SV&P
Positioning & Attitude	SPS750 and SPS550, Trimble DSM132, TSS DMS05

Table 5. M/V BELLA MARIE Equipment and Vessel Specifications

M/V Bella Marie	
Echosounders	Reson 8101
Sound Velocity Equipment	Odom Digibar Pro
Positioning & Attitude	Kongsberg Seapath 200, Seatex MRU

Please refer to section B3.a of this report for deviations from *OPR-J977-DE-08 Data Acquisition and Processing Report (DAPR)** submitted previously. ***Included with survey deliverables.**

B2. Quality Control

Quality control is discussed in detail in Section B of the *OPR-J977-DE-08 DAPR**. The results from the positioning system comparison and leadline to multibeam comparison may be found in Separate I *Acquisition and Processing Logs*** and the sound velocity profile sensor weekly evaluation table may be found in Separate II *Sound Speed Data***. Single beam data were reviewed at multiple levels of data processing including hydrographic information processing system (HIPS) conversion, line editing, subset editing, and analysis of anomalies revealed in uncertainty surfaces. Side scan data were reviewed multiple times for contacts with reviews occurring: real-time during data acquisition, during contact verification and bottom tracking, and again during mosaic generation. One side scan contact was reclassified as significant as a result of this thorough review process. Significant side scan contacts were compared to multibeam during HIPS subset editing and compared to anomalies in the multibeam data sun-illuminated imagery. ***Included with survey deliverables. **Data filed with original field records.**

B2.a Crosslines

A total of 123.01 nautical miles of crosslines, or 8.84% of mainscheme lines, were run for analysis of survey accuracy. Crosslines were run perpendicular to mainscheme lines across the entire surveyed area providing a good representation for analysis of consistency. **Concur.**

The mainscheme bathymetry was manually compared to crosslines in CARIS subset mode, as well as compared to multibeam investigation lines by creating a difference surface. Crosslines agreed well with differences within tolerance for an International Hydrographic Organization (IHO) Order 1 survey. A statistical Quality Control Report was generated in CARIS HIPS by comparing all the crosslines to a two-meter uncertainty weighted surface. Beam number was selected for output results. The quality control report is included in Separate IV *Crossline Comparisons**. The results of the analysis exceeded the requirements set in the *NOS Hydrographic Surveys Specifications and Deliverables* (April 2007). **Concur.**

B2.b Uncertainty

The calculated uncertainty values of all nodes of the unfinalized Combined Uncertainty and Bathymetry Estimator (CUBE) surfaces range from 0.254 meters to 0.318 meters.

During HIPS processing, the "greater of the two" option was selected, where the calculated uncertainty from total propagated uncertainty (TPU) is compared to the standard deviation of the soundings influencing the node, and the greater value is assigned as the final uncertainty of the node. As a result, the uncertainty of the finalized surface and associated Bathymetric Attributed Grids (BAGs) increased for nodes where the standard deviation of the node was greater than the calculated uncertainty. No area within the survey exceeds IHO Order 1 specifications for depth accuracy. ***Concur.***

B2.c Junctions

H11836 junctions with survey H11835 to the south. The junction analysis between H11836 and H11835 is discussed in the H11835 Descriptive Report. ***Concur.***

B2.d Unusual Conditions or Data Degradation

No unusual conditions or data degradation was observed in H11836. ***Concur.***

B2.e Object Detection and Coverage Requirements

Survey speeds were adjusted so that object detection requirements were exceeded throughout the survey. ***Concur.***

Demonstration of 200% side scan sonar coverage was achieved by producing separate 100% and 200% 50-centimeter mosaics. A fill plan was created for all holidays in water depths 4 feet or deeper. Complete coverage was obtained within the survey area; however, shoaling limited the achievable area of coverage. In these areas the inshore limit of hydrography was the 4-foot contour as defined in the *OPR-J977-DE-08 SOW*. ***Concur.***

Every attempt was made to obtain complete coverage within the survey area; however, depths shoaler than 4-feet restricted survey operations in some areas. ***Concur.***

Vertical beam echosounder (VBES) data were acquired in conjunction with the side scan sonar. All along track holidays in VBES were filled prior to the end of survey operations. The coverage requirement for a "Set Line Spacing" survey was achieved. ***Concur.***

Shallow water multibeam data were acquired for least depth determination on significant contacts. High resolution, 50-centimeter, CUBE surfaces were created to ensure that every feature's least depth was accurately portrayed. The disambiguation method configuration used to create all 50-centimeter CUBE surfaces was set to "Shoal" which corresponds to the NOS *Hydrographic Surveys Specifications and Deliverables* (April 2007) Object Detection Coverage requirements. ***Concur.***

B3. Corrections to Echo Soundings

Data reduction procedures for survey H11836 are detailed in the *OPR-J977-DE-08 DAPR**, submitted under separate cover. The multibeam swath angle filter that was applied to each survey line varied depending on location, conditions, and search objects. In general, data were filtered at a 45/45 degree angle from nadir. For detailed information pertaining to applied filters please refer to the multibeam processing logs. ****Included with survey deliverables.***

The survey area for H11836 contained numerous baring platforms. The least depths of the baring features were marked as “Examined” and the remainder of the feature was flagged as "Rejected" to the mudline. The baring features are not included in the finalized bathymetric sounding set after they were positioned. This was done to ensure that the generated surface represented the true seafloor. ***Concur.***

B3.a Deviations from DAPR

There are several deviations from the *OPR-J977-DE-08 DAPR** resulting from changes in survey and processing methodology or from reporting errors in the DAPR.

- DEA contracted TerraSond, Ltd. to perform a multibeam investigation of an item that was reclassified by DEA during data review. The investigation was performed using a Reson 8101 multibeam sonar with Kongsberg Seapath 200 RTK positioning system and Seatex MRU motion sensor on M/V *Bella Marie*. A schematic of M/V *Bella Marie* including sensor offsets is included in Separate V *Supplemental Records** of this report. Acquisition and Processing logs for the investigation can be found in Separate I - *Acquisition and Processing Logs*. Additional information regarding TerraSond, Ltd. data acquisition procedures can be found in the *Data Acquisition and Processing Report* submitted with S-J977-KR-TE-08*. The investigation survey lines were converted, processed, and reviewed by DEA following procedures described in the *OPR-J977-DE-08 Data Acquisition and Processing Report**. ***Concur with clarification. The schematic of M/V Bella Marie is located in Appendix V: Supplemental Records. The TerraSond DAPR S-J977-KR-TE-08 is included with survey deliverables.***
- R/V Taku and R/V Chinook vessel sketches in the DAPR* show the surveyed 0.5m VBES Z offsets while the HVFs report a Z offset of 0.0m. The 0.5 meter VBES draft offset for each vessel was entered into the ODOM CV-100 and applied in real time during acquisition and therefore not included in the HVFs. Draft checks were observed twice daily (beginning and end of day) to account for vessel loading and fuel consumption. The draft readings were then used to compute HIPS water line values with respect the vessel reference point. This methodology was consistently verified through weekly leadline checks. ***Concur.***
- The R/V Chinook vessel sketch incorrectly lists VBES horizontal offsets relative to the gunnel directly above the VBES transducer. The DAPR* VBES forward offset is in error by -0.003m while the VBES starboard offset is in error by 0.008m. The positions listed in the HVF are correct and are relative to the face of the transducer. ***Concur.***
- Minor changes were made to the Hydrographic Vessel File TPU Values as reported in Table 6 of the DAPR*. The HVFs used for survey H11835 had changes to vessel speed,

loading, draft, and delta draft a priori static error estimates. Values included in the HVFs submitted with the project were used in TPU calculations.

** Included with survey deliverables.*

B3.b Additional Calibration Tests

The initial system calibration tests for R/V Chinook (squat and latency) took place on April 11, 2008 (DN102) with the opening test for R/V TAKU (patch, squat, and latency) occurring on April 27, 2008 (DN118). Additional patch tests for the R/V Taku were performed periodically (DN 178, 212, 220 and 235) to verify the adequacy of the known system biases. *Concur.*

B4. Data Processing (Data Representation)

B4.a Single Beam

A single, two-meter uncertainty weighted surface of the single beam data is delivered with the complete single beam data set. *Concur.*

B4.b Multibeam

CUBE surface resolutions and depth ranges were set in accordance with the NOS *Hydrographic Surveys Specifications and Deliverables* (April 2007). Final CUBE surfaces were created at a resolution of 50 centimeters and used to determine least depths of significant side scan sonar contacts. In order to keep CUBE surfaces at a manageable size, the main survey area was broken up into three Field Sheets (H11836_1of3, etc.) When combined the Field Sheets encompass the entire area of acquired multibeam bathymetry. A BAG was created for each CUBE surface and both the CUBE and BAG surfaces have been included with the digital data. *Concur.*

C. HORIZONTAL AND VERTICAL CONTROL *see also Evaluation Report*

A complete description of horizontal and vertical control for survey H11836 can be found in the OPR-J977-DE-08 *Horizontal and Vertical Control Report**, submitted under separate cover. A summary of horizontal and vertical control for this survey follows. **Included with survey deliverables.*

C1. Vertical Control

The vertical datum for this project is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Pilots Station East, Southwest Pass, LA (8760922) served as control for datum determination. A subordinate water level station was installed at the Devon Energy Facility, North Pass, LA (8760417) and served as the primary source for water level reducers for all zones for survey H11836. *Concur.*

Soundings were reduced to MLLW using water level files from the NWLON station at Pilots Station East, SW Pass, LA and the tertiary station at Devon Energy Facility, North Pass, LA. *Concur.*

The Aquatrak acoustic distance measurements at the Devon Energy Facility station were converted to water level heights by subtracting the measured distance from the sensor "0" station datum elevation. Outliers were then removed from the data set by smoothing with a five-hour fifth degree polynomial. Daily high and low readings were then picked from the data set and monthly means were computed. The monthly means from Devon Energy Facility were compared to the verified monthly means at Pilots Station East. From these comparisons, tidal datums were computed for Devon Energy Facility. A MLLW corrector file for Devon Energy Facility was created by applying the offset from station datum to MLLW to the smoothed Devon Energy station datum six-minute water level file. *Concur.*

MLLW was recomputed by CO-OPS for the Pilots Station East, Southwest Pass (876-0922) station in February 2009, which impacted the MLLW determination of the Devon Energy Facility station. For this survey MLLW at Devon Energy Facility was acquired, processed, and submitted using the datum for Pilots Station East, Southwest Pass that preceded the February 2009 adjustment by CO-OPS. *Concur.*

Additionally, MLLW at Devon was computed using a four month datum determination which corresponds with the time that the gauge was used for OPR-J977-DE-08 (April - August 2008). The subordinate water level station at the Devon Energy Facility, North Pass was also used on another contract survey (S-J977-KR-TE-08) performed by TerraSond Ltd. with a nine month datum determination. Comparison of water levels submitted with this project to those used on S-J977-KR-TE-08, which are computed on the new datum, will show a shift between the two water level files as a result of the nine month datum determination and the revised datum at Pilots Station East, SW Pass, LA. This difference was discussed with the Office of Coast Survey, Chief of Hydrographic Surveys, and a determination was made to hold datums valid for the duration of this survey. *Concur.*

C2. Discussion of Tide Zoning

Evaluation of tides was accomplished through comparison of zoned water levels from the primary station to the secondary station, crossline comparisons, and by visually comparing adjacent lines during CARIS subset editing. *Concur.*

Tide zoning for Devon Energy Facility, North Pass, LA (8760417) was created by modifying the preliminary Center for Operational Oceanographic Products and Services (CO-OPS) zoning files tied to Pilots Station East, Southwest Pass, LA (8760922). No changes were made to the preliminary zone boundaries except for moving the vertices of several zones so that adjacent zones have vertices that matched exactly to remove some very small slivers from the file. The Devon Energy Facility zone file used the same boundaries as the modified Pilot Station East, SW Pass, LA, but the time and range correctors were been back zoned from Pilot Station East, SW Pass to transfer relative to Devon Energy Facility. *Concur.*

C3. Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Position data consists of both geographic and projected coordinates. Projected coordinates are in meters using the Universal Transverse Mercator (UTM) Zone 16 North projection. Differential Global Positioning System (DGPS) was the sole method of positioning, with differential corrections received from the U.S. Coast Guard beacon at English Turn, Louisiana (broadcast site ID 814 at 293 kilo Hertz). *Concur.*

D. RESULTS AND RECOMMENDATIONS

D1. Chart Comparison

A photo was taken for most baring features located in OPR-J977-DE-08 survey area. Each photo is named for the correlating side scan contact number and is included with the deliverables with the Supporting Data for SSS Contacts. *Concur.*

D1.a Survey Agreement with Chart

During the course of data acquisition and processing H11836 was compared to the largest scale raster and electronic navigation charts (ENC). The results of these comparisons are described below, as well as in Sections D2.b through D2.f of this report. *Concur.*

A sounding plot for H11836 was created from the combined, 2-meter CUBE surface in CARIS, with a 75-meter on the ground radius overplot removal in Base Editor. Contours were also generated from the combined, 2-meter CUBE surface exported from CARIS HIPS. Contours and soundings were created solely for comparison purposes and are not submitted as a final deliverable. The "Examined" CARIS flag was used to confer completion of a multibeam investigation examination where no contact was located, or if the multibeam least depth was part of a baring feature. Depths marked as examined should not be used when generating final bathymetric products. *Concur.*

H11836 contours and soundings were compared in CARIS HIPS and ArcGIS to the depths and contours on the charts listed in Table 6.

Table 6. Charts compared to H11836

Chart	Scale	Edition	Edition Date	Issue Date	Latest LNM	Cleared Through Date
11361	1:80,000	74	09/01/2007	06/07/2008	40	06/07/2008
US4LA30M	---	13	---	01/12/2009	---	---

Survey H11836 depths were compared to the charted soundings on Charts 11361 and corresponding ENC US4LA30M. Depths from survey H11836 vary significantly from charted (Figure 2). **Concur.**

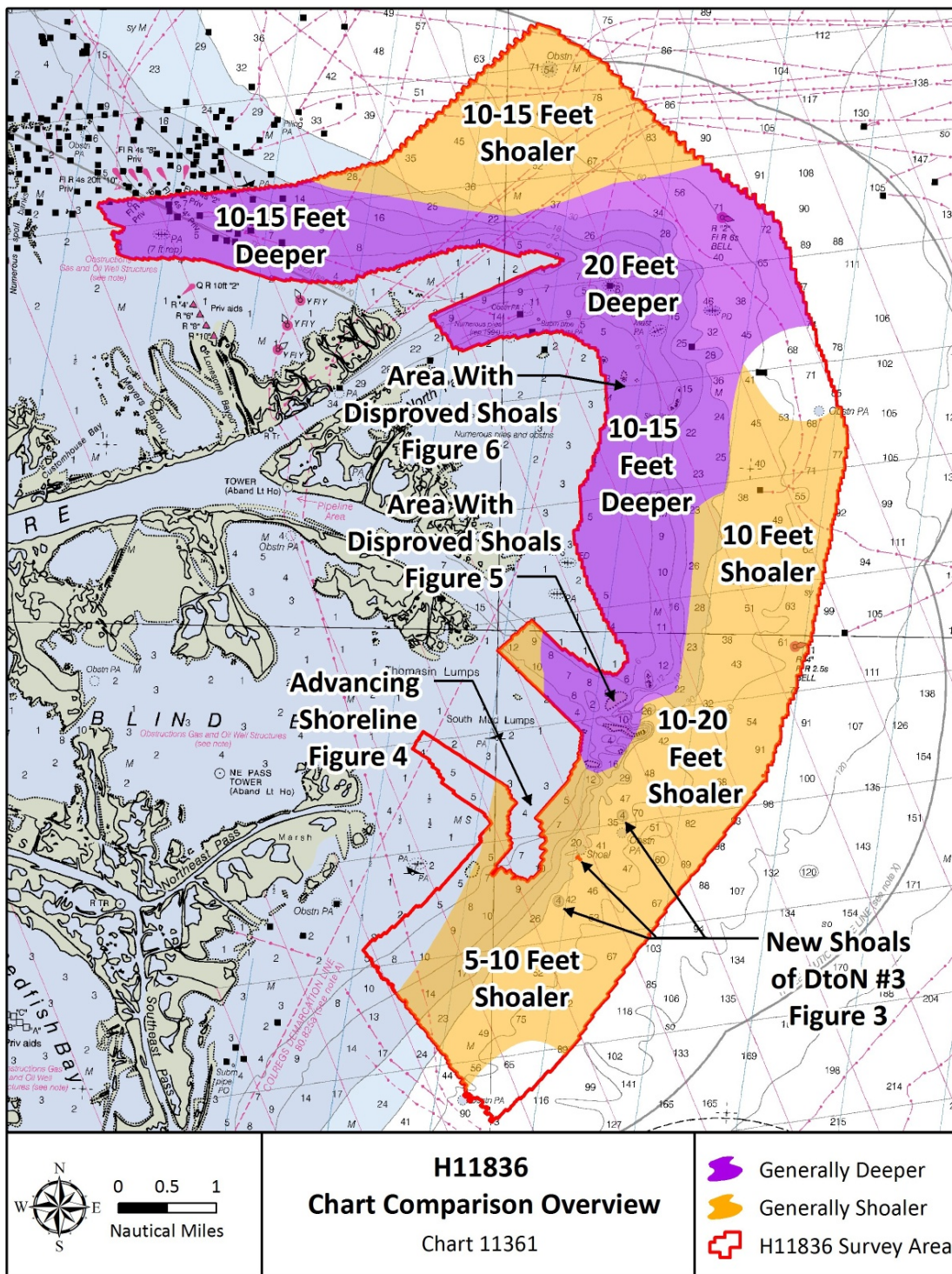


Figure 2. Overview of depth discrepancies between H11836 and Chart 11361

The most significant discrepancies between the chart and H11836 are discussed below. The Hydrographer recommends that the shoreline be updated.

H11836 located three new significant shoals:

1. H11836 located three new shoals east of South Mud Lumps (Figure 3). The shoals were submitted as Danger to Navigation #3. **Concur.**

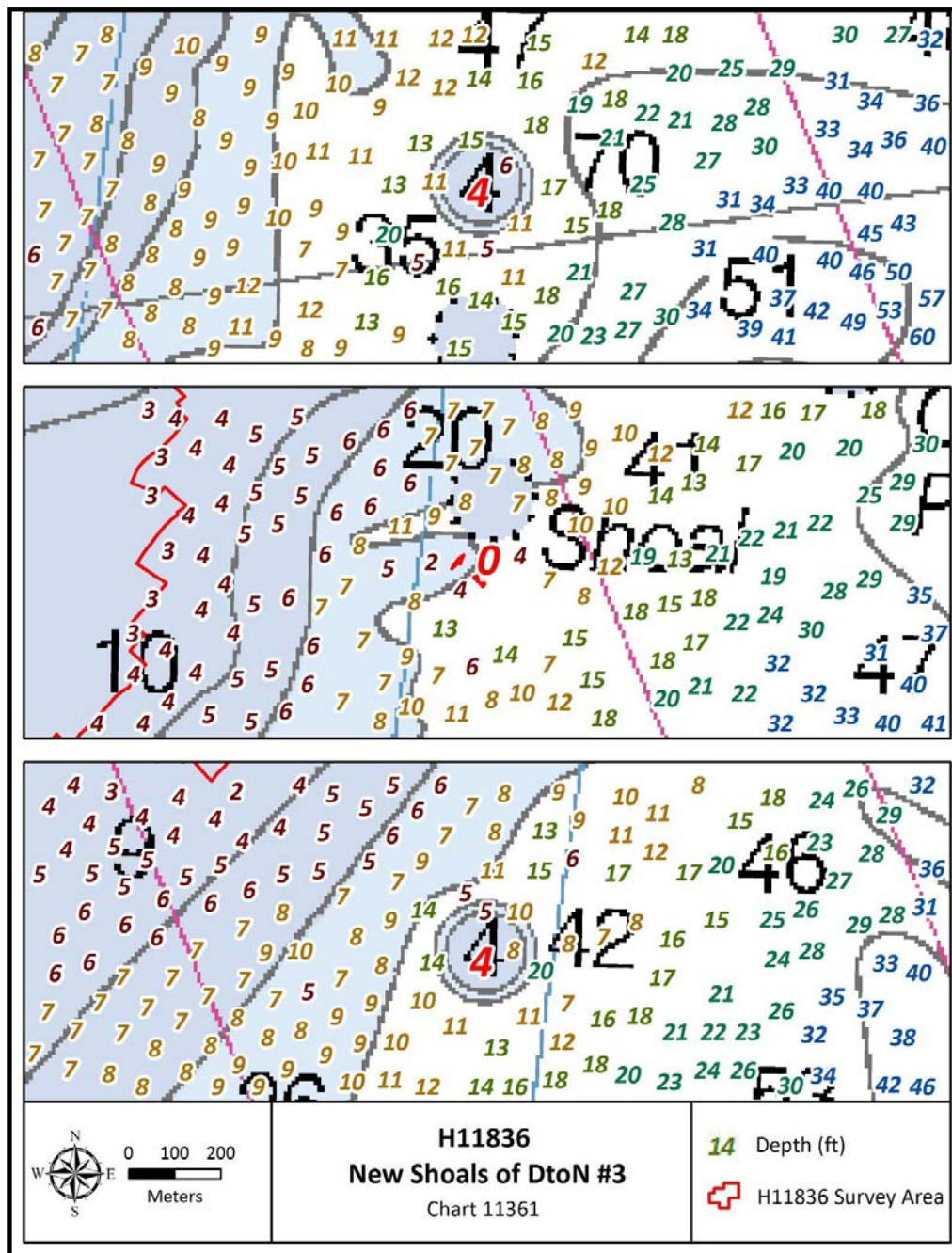


Figure 3. New Shoals east of charted South Mud Lumps

- H11836 located a new mound like shoal east of Blind Bay. Figure 4 depicts the migration of the shoal less than 4-feet in this area, which extends seaward of the charted 10-foot sounding. The hydrographer recommends charting the area based on current hydrography. **Concur. Area includes intertidal zone, sent as DtoN during AHB processing (see DR Appendix I).**

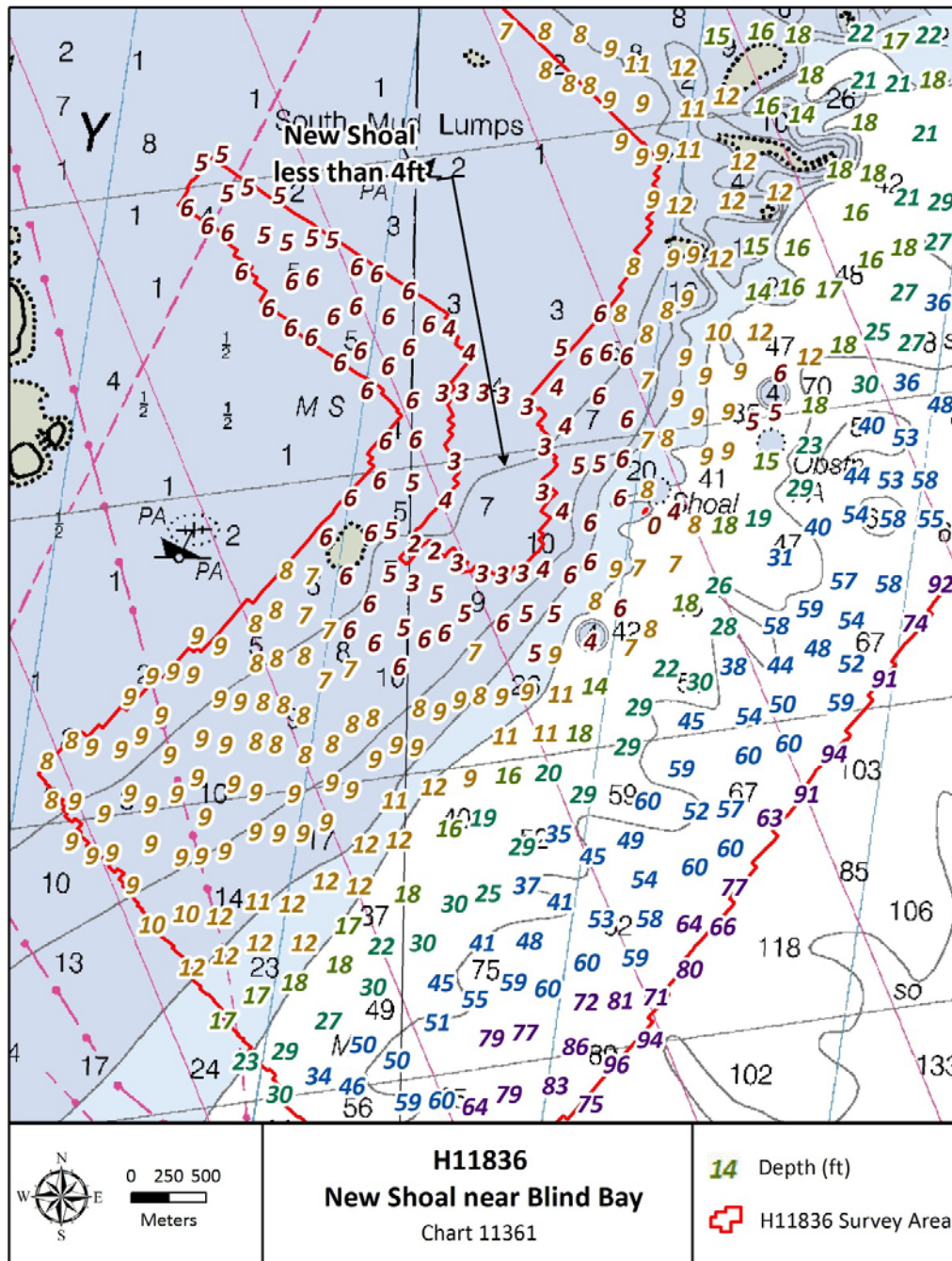


Figure 4. New Shoal

The latest electronic and raster versions of Charts 11361 were reviewed to ensure that all U.S. Coast Guard Local Notice to Mariners (LNM) issued during survey acquisition and impacting the survey area were applied and addressed by this survey. **Concur. The same precaution was taken during compilation.**

DI.b Comparison to Significant Shoals

The charted shoals east of South Mud Lumps were disproved with vertical beam echosounder and 200% side scan (Figure 5). It appears that the shoals have migrated to the south. New shoals were submitted to Atlantic Hydrographic Branch (AHB) as Danger to Navigation # 3. Current survey depths range from 9 feet to 21 feet (2.7 meters to 6.4 meters) over the charted shoals. The hydrographer recommends charting the area based on current hydrography. **Concur.**

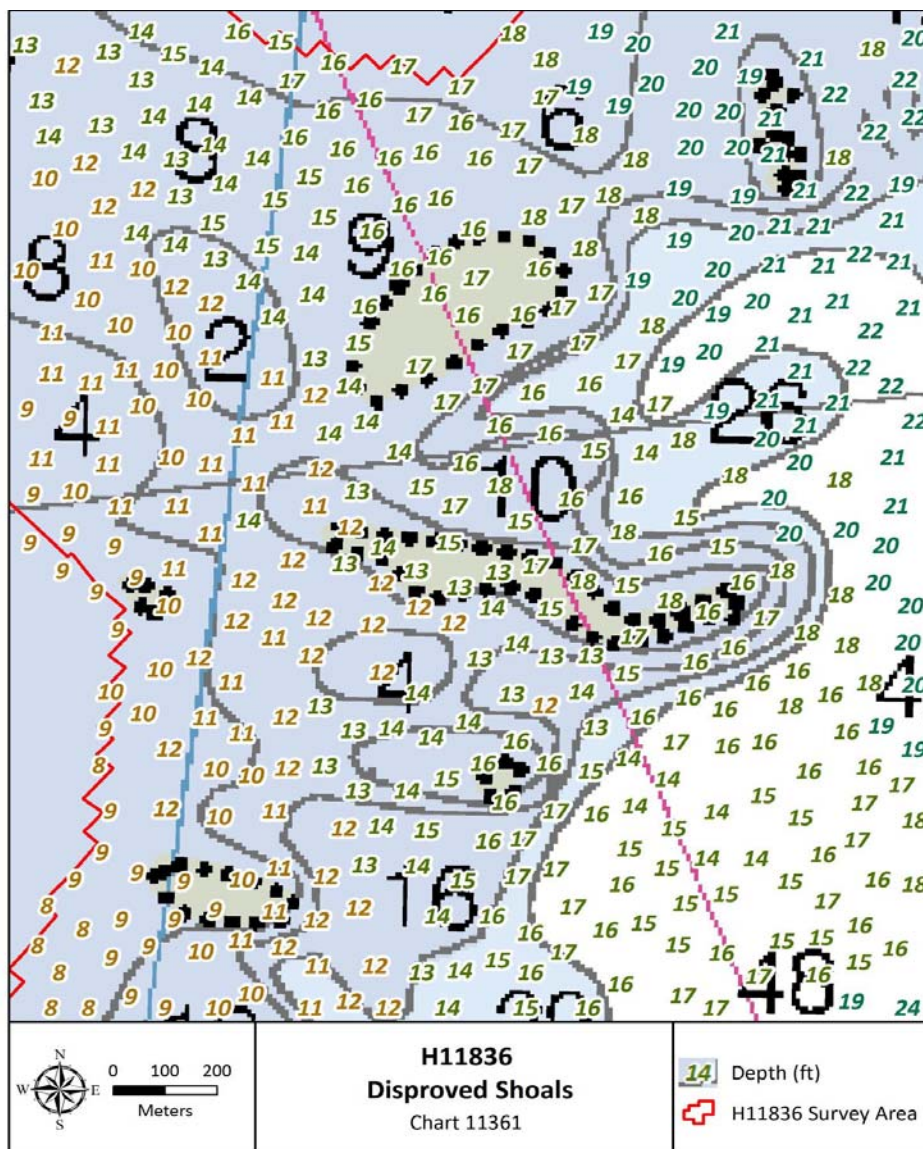


Figure 5. Disproved charted shoals near South Mud Lumps

The charted shoaling at 29-12-19.04N, 88-57-57.96W was disproved with vertical beam echosounder and 200% side scan (Figure 6). Current survey depths on the charted shoals and high water features range from 26 feet to 33 feet (7.9 meters to 10 meters). The hydrographer recommends charting the area based on current hydrography. **Concur.**

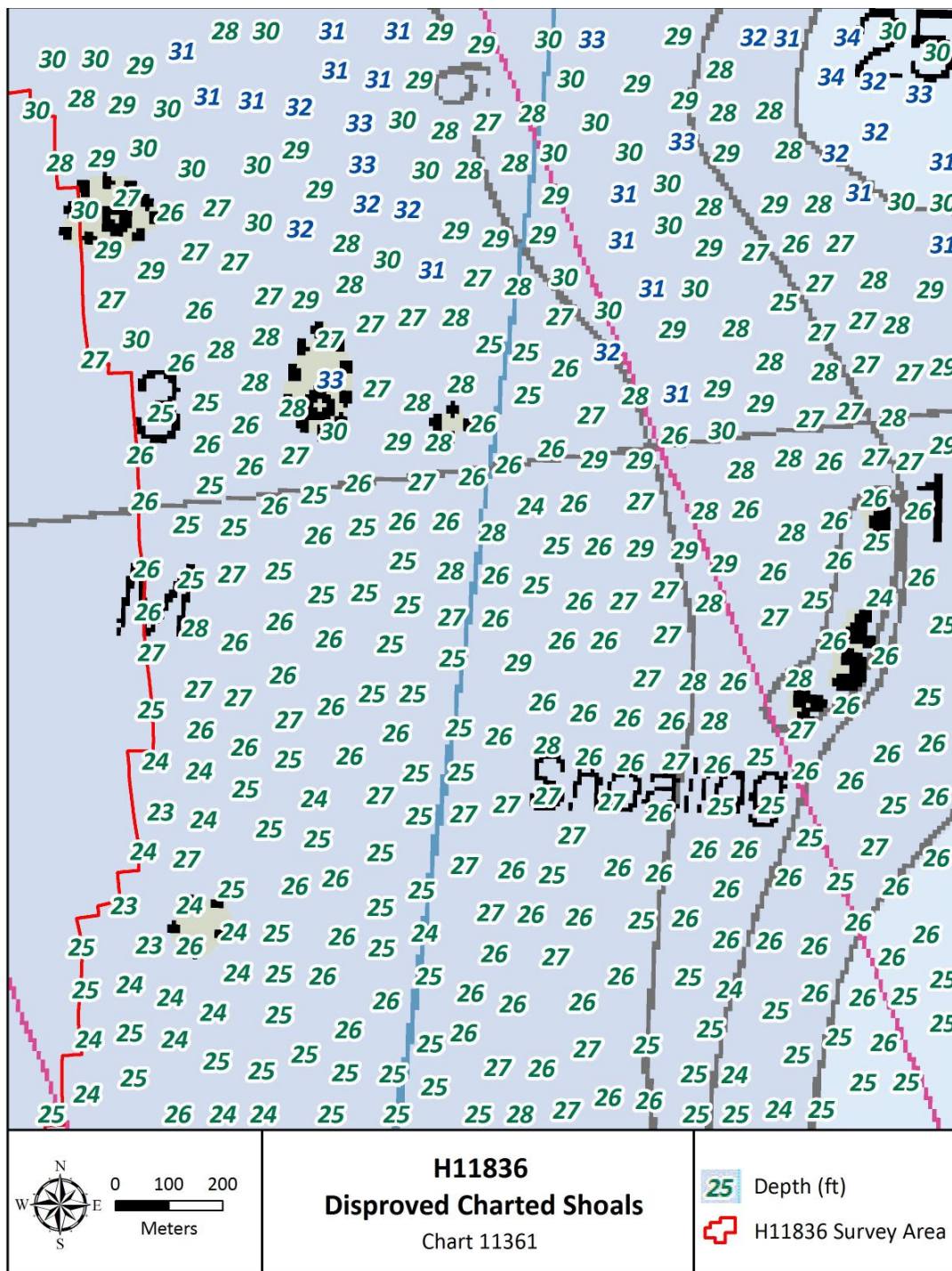


Figure 6. Disproved charted shoaling

DI.c Comparison to Charted Features

Eight (8) AWOIS items are located within H11836 survey limits (Figure 7). Seven (7) of the AWOIS items were assigned for investigation. The search radius of one additional AWOIS item (14124) extends into the H11835 and H11836 survey area and is discussed in the H11835 *Descriptive Report*. The side scan sonar record was thoroughly reviewed for significant contacts within the search radius of all of the AWOIS items located on H11836. **Concur.**

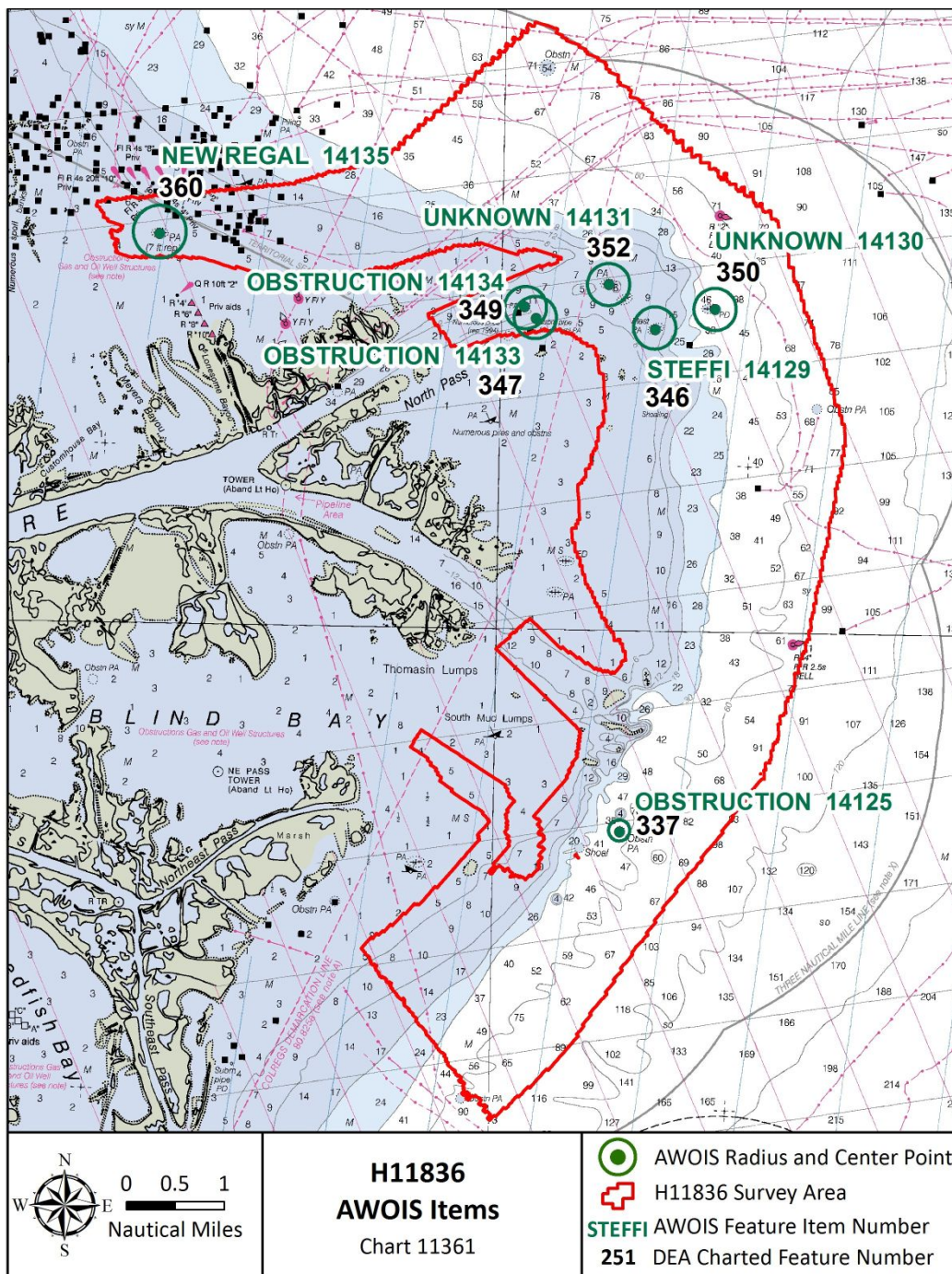


Figure 7. H11836 AWOIS Investigations

Two hundred percent (200%) side scan sonar coverage was achieved over the following AWOIS items, and where applicable, were investigated with multibeam sonar for least depth determination. **Concur.**

- The charted obstruction (PA) (AWOIS 14125) at 29-07-57.8N, 088-58-31.23W was disproved with 200% side scan sonar. No indication of an unmarked structure just above the waterline as discussed in the AWOIS was observed. A series of geologic mounds rising 1.6 feet to 2.2 feet (0.5 meters to 0.7 meters) above the natural bottom were observed in a multibeam investigation that falls within the search radius. The hydrographer recommends removing the charted obstruction and updating the AWOIS database as disproved. **Concur.**
- The charted wreck (PD) (AWOIS 14130) at 29-13-18.79N, 088-57-30.14W was disproved with 200% side scan sonar. No indication of an 80-foot barge was observed as discussed in the AWOIS. The hydrographer recommends removing the charted wreck and updating the AWOIS database as disproved. **Concur.**
- The charted wreck (Mast PA) (AWOIS 14129) at 29-13-06.79N, 088-58-12.15W was disproved with 200% side scan sonar. No indication of a 65-foot wreck with mast visible as discussed in the AWOIS was observed. A smaller 15-foot wreck was observed 500 meters to the northwest of the AWOIS position, outside the search radius, and submitted as H11836 Danger to Navigation (Dton) #5. This wreck is included in the S-57 feature file for this survey. The hydrographer recommends removing the charted wreck and updating the AWOIS database as disproved. **Concur with clarification. Evidence suggests that Dton#5 is AWOIS item 14129. Update database accordingly.**
- The charted wrecks (PA) (AWOIS 14131) at 29-13-33N, 088-58-45W were disproved with 200% side scan sonar. No indication of dangerous wrecks as discussed in the AWOIS was observed in the search radius. The hydrographer recommends removing the charted wreck and updating the AWOIS database as disproved. **Concur.**
- The charted obstruction (PA) (AWOIS 14134) at 29-13-18.001N, 088-59-43.001W was disproved with 200% side scan sonar. No indication of rig remains was observed as discussed in the AWOIS. An obstruction with a least depth of 6.7 meters at MLLW was observed in a multibeam investigation 250 meters southwest of the charted AWOIS item and was submitted in the H11836 S-57 feature file. The hydrographer recommends removing the charted obstruction (PA), updating the AWOIS database as disproved and charting the nearby obstruction as depicted in the S-57 feature file. **Concur with clarification. Delete AWOIS 14134 charted dangerous obstruction "PA" and update AWOIS database. It was determined that the nearby obstruction 250 meters to the southwest of AWOIS 14134 is AWOIS 14133. Refer to references to AWOIS 14133 of this report for charting recommendation of this feature.**
- The charted wreck (PA) (AWOIS 14135) at 29-14-00.791N, 089-04-00.160W was disproved with 200% side scan sonar within the survey limits. No indication of a wreck with mast or the reported 7 feet of water was observed as discussed in the AWOIS.

Portions of the search radius were outside the survey area and not investigated. The hydrographer recommends removing the charted obstruction (PA), updating the AWOIS database as disproved. **Concur.**

- The charted submerged pipe (uncovers) (AWOIS 14133) was located at 29-13-14.022N, 088-59-50.907W (Figure 8) 420 meters west of the charted position **29-13-11.629N, 088-59-35.513W** near a disproved charted platform. The pipe rises 5.0 feet (1.5 meters) and has a least depth of 22.1 feet (6.7 meters). The search radius for AWOIS 14134; submerged rig, (charted Obstruction PA) significantly overlaps the search radius for AWOIS 14133, however there is no indication of the rig framing in sonar imagery as discussed in the AWOIS. The hydrographer therefore believes this to be the charted submerged pipe and recommends removing the pipe and uncovers annotation and charting a submerged pipe as depicted in the S-57 feature file. **Concur with clarification Chart dangerous obstruction "Subm Pipe" least depth 22 feet at the survey position.**

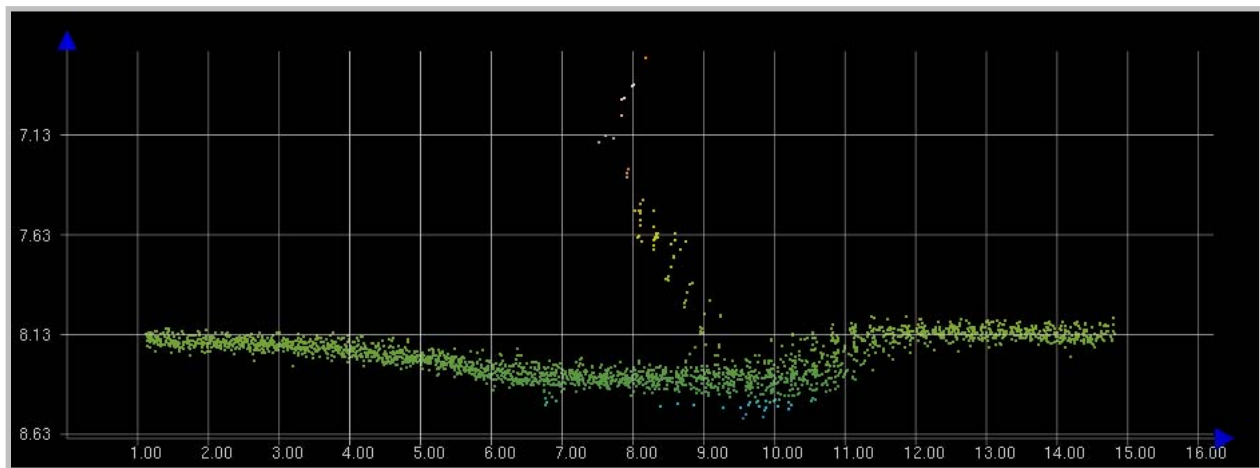


Figure 8. AWOIS item 14133 submerged pipe

D1.d Comparison of Soundings in Designated Anchorages and Along Channels

There are no anchorage grounds located in H11836 survey area. **Concur.**

The northern extent of H11836 includes a small section of the entrance of the North Pass of Pass a Loutre. Depths in this area are generally 20 feet (6 meters) deeper than charted. **Concur.**

DI.e New Submerged Features

New submerged features are listed in tabular format in Appendix II *Survey Feature Report*. Several new items of interest are discussed below.

An obstruction was located at 29-14-29.892N, 89-01-59.601W (Figure 9). The obstruction rises approximately 6.6 feet (2.0 meters) from the natural seafloor and has a multibeam least depth of 21.97 feet (6.7 meters). This rectangular obstruction is included in the S-57 feature file. **Concur with clarification. Chart dangerous obstruction least depth 22 feet at the survey position.**

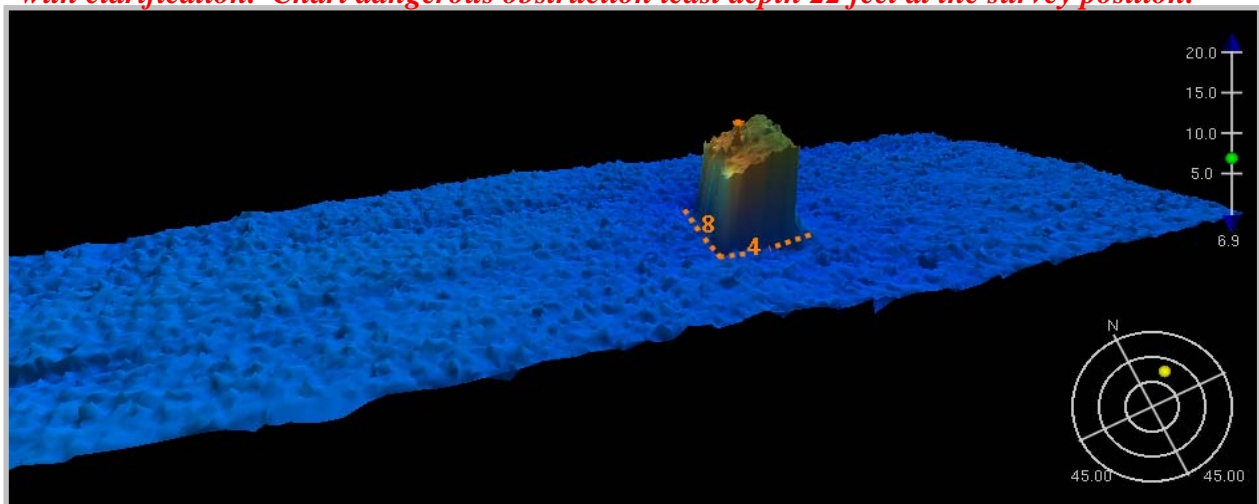
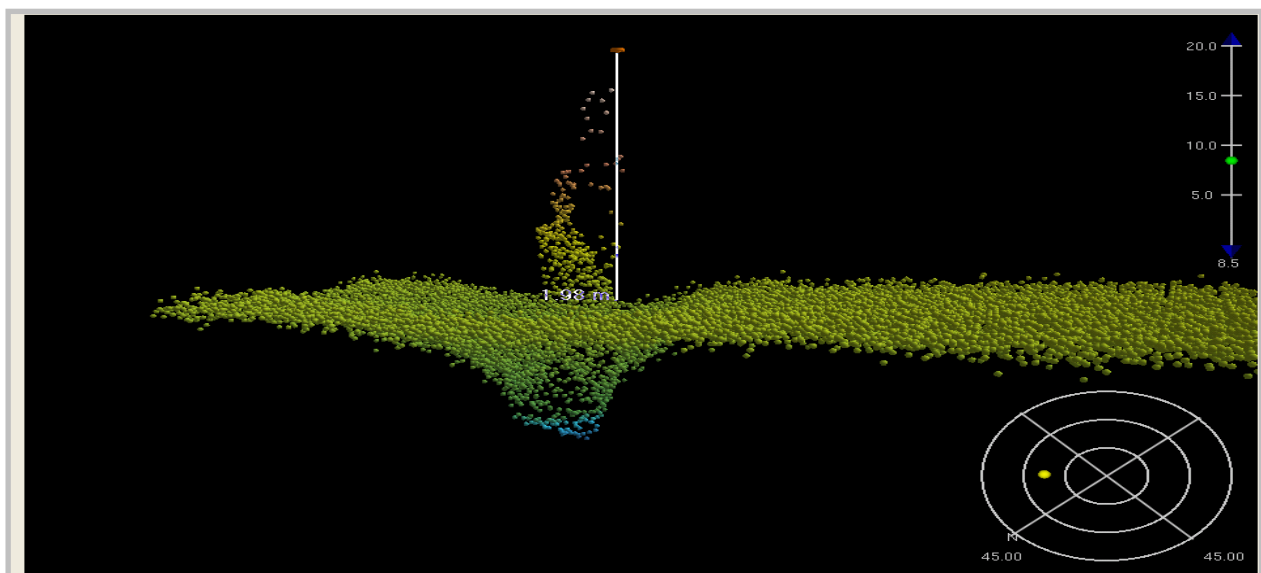


Figure 9. New obstruction

An obstruction was located at 29-14-26.145N, 89-02-43.445W (Figure 10). The obstruction rises approximately 6.6 feet (2.0 meters) from the natural seafloor and has a multibeam least depth of 16.86 feet (5.1 meters). The obstruction is included in the S-57 feature file. **Concur with**



clarification. Office processing determined that the feature is insignificant in relation to charted features and bathymetry in the vicinity. Chart as 17 foot sounding at the survey position.

Figure 10. New obstruction

A wreck was located at 29-14-02.035N, 89-03-08.502W (Figure 11). During initial review of the side scan contact the wreck was misclassified as platform supports and not further investigated. During subsequent office review the item was reclassified as a wreck and it was decided that the contact required investigation for least depth determination. However, DEA had already ended survey operations in the area and demobilized the survey vessels. With the approval of the NOAA COTR, TerraSond Ltd., who also was contracted through NOAA for Gulf of Mexico debris mapping (Project S-J977-KR-TE-08), was hired by DEA to acquire 100% multibeam coverage on the wreck and on an additional feature as a confidence check. The additional feature is an obstruction that DEA had previously surveyed with both multibeam and vertical beam (two independent sonars) echosounders. **Concur.**

The obstruction was used to compare the vertical and horizontal agreement between TerraSond and DEA datasets. A vertical offset of approximately 20 cm is apparent between the two datasets, with TerraSond data being deeper. All depths were reduced using zoned water level correctors from Devon Energy Facility, North Pass, LA (8760417) using the 4-month datum and the datum preceding the adjustment made by CO-OPS in February 09 to Pilots Station East, Southwest Pass (876-0922) (see C1. Vertical Control). The tide file was thoroughly reviewed for weather related anomalies and spikes. The HIPS Vessel File for *M/V Belle Marie* was also reviewed for any unresolved vertical offsets. Please refer to the *S-J977-KR-TE-08 Data Acquisition and Processing Report** for information pertaining to *M/V Bella Marie* vessel configuration. The likely cause of the discrepancy between the two datasets over common area is the use of zoned water levels and the change in conditions from August to January. **Concur.**
***TerraSond DAPR included in the survey deliverables.**

The least depth of the wreck is 13.19 feet (4.0 meters). The wreck is included in the S-57 feature file. **Concur with clarification.** Chart dangerous wreck least depth 13 feet at the survey position.

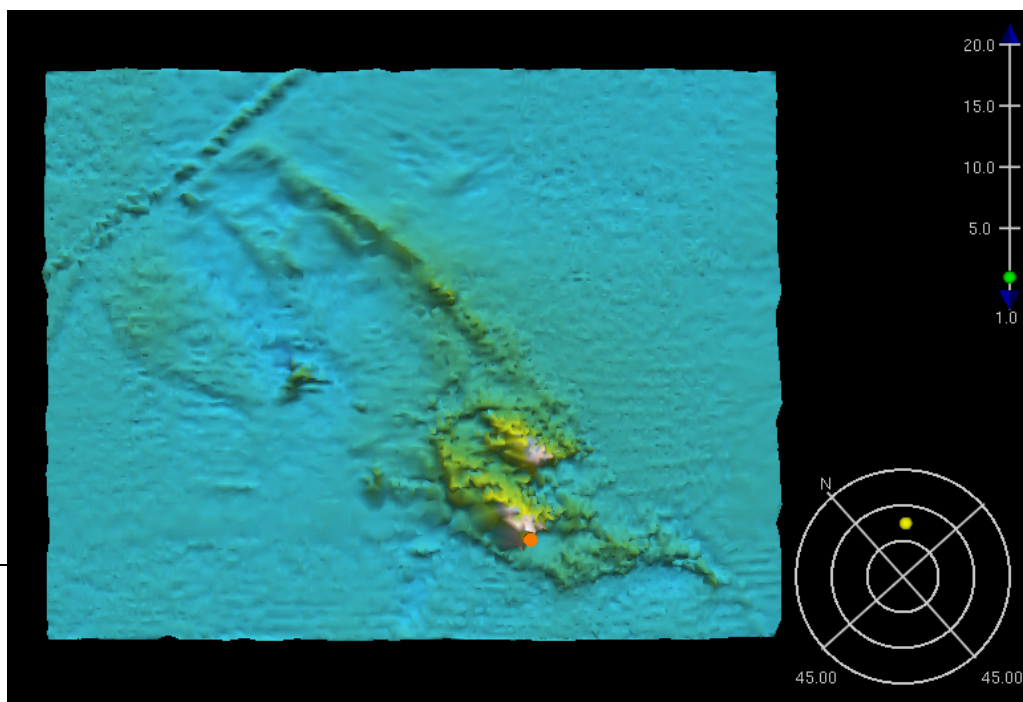


Figure 11. New wreck

DI.f Dangers to Navigation (DtoN)

Five (5) DtoNs were located during survey H11836 and have been submitted to AHB. All DtoNs were reviewed by AHB and those deemed worthy of charting were forwarded on to the Marine Chart Division (MCD). Copies of the AHB DtoN submissions are included in Appendix I *Danger to Navigation Reports*. ***Concur with clarification. Five DtoN reports were submitted to AHB. An additional DtoN was sent to MCD during AHB review (see DR Appendix I).***

The least depths of several of the DtoNs were preliminary and reduced to MLLW using unverified water levels. Since submission, the DtoNs have been reduced to MLLW with zoned verified water levels. All DtoNs are included in the S-57 feature file and should be charted as depicted in the file (Table 7). ***Do not concur. The DtoN's which are uncharted pipelines were not applied to chart as obstructions, due to a preexisting note on the chart warning about uncharted pipelines and for mariners to use extreme caution. DtoN 3.1 and 3.3 were applied to the chart as 4 foot soundings. An additional DtoN was found during AHB processing and sent to MCD (see details in DR Appendix I).***

Table 7. H11836 DtoN Charting Status

DtoN	Contact	Feature	Applied to Raster Chart	Applied to ENC	AHB Submitted to MCD
DtoN 1.1	175-141339-S	Pipeline	No	No	Yes
DtoN 1.2	175-142245-S	Pipeline	No	No	Yes
DtoN 1.3	175-190823-S	Pipeline	No	No	Yes
DtoN 1.4	175-192949-S	Pipeline	No	No	Yes
DtoN 1.5	175-201643-S	Pipeline	No	No	Yes
DtoN 1.6	175-203842-S	Pipeline	No	No	Yes
DtoN 1.7	175-203325-P	Pipeline	No	No	Yes
DtoN 1.8	175-210420-S	Pipeline	No	No	Yes
DtoN 1.9	180-162332-P	Pipeline	No	No	Yes
DtoN 1.10	180-163033-P	Pipeline	No	No	Yes
DtoN 1.11	180-172130-S	Pipeline	No	No	Yes
DtoN 1.12	180-180323-P	Pipeline	No	No	Yes
DtoN 1.13	180-182120-P	Pipeline	No	No	Yes
DtoN 1.14	180-202755-S	Pipeline	No	No	Yes
DtoN 1.15	180-202625-P	Pipeline	No	No	Yes

DtoN	Contact	Feature	Applied to Raster Chart	Applied to ENC	AHB Submitted to MCD
DtoN 1.16	180-203209-P	Pipeline	No	No	Yes
DtoN 1.17	184-142123-P	Pipeline	No	No	Yes
DtoN 1.18	184-142848-P	Pipeline	No	No	Yes
DtoN 1.19	178-180120-P	Pipeline	No	No	Yes
DtoN 1.20	178-195610-P	Pipeline	No	No	Yes
DtoN 1.21	190-160955-S	Pipeline	No	No	Yes
DtoN 1.22	190-142825-S	Pipeline	No	No	Yes
DtoN 1.23	190-151917-S	Pipeline	No	No	Yes
DtoN 1.24	192-155030-P	Pipeline	No	No	Yes
DtoN 1.25	192-161346-S	Pipeline	No	No	Yes
DtoN 1.26	192-182313-S	Pipeline	No	No	Yes
DtoN 1.27	198-182508-S	Pipeline	No	No	Yes
DtoN 1.28	197-164903-S	Pipeline	No	No	Yes

Table 7. H11836 DtoN Charting Status (cont'd.)

DtoN	Contact	Feature	Applied to Raster Chart	Applied to ENC	AHB Submitted to MCD
DtoN 1.29	192-172733-S	Pipeline	No	No	Yes
DtoN 1.30	197-164902-S	Pipeline	No	No	Yes
DtoN 1.31	197-183632-P	Pipeline	No	No	Yes
DtoN 1.32	190-170411-P	Pipeline	No	No	Yes
DtoN 2	176-205201-S	Obstrn	Yes	Yes	Yes
DtoN 3.1	--	Obstrn	Yes	No	Yes
DtoN 3.2	--	Obstrn	Yes	Yes	Yes
DtoN 3.3	--	Obstrn	Yes	No	Yes
DtoN 4.1	204-141049-P	Pipeline	No	No	Yes
DtoN 4.2	206-202515-P	Pipeline	No	No	Yes
DtoN 5	207-151525-P	Wreck	No	No	Yes

D2. Additional Results

D2.a Shoreline Investigations

Shoreline verification was not required for survey H11836. **Concur.**

D2.b Comparison with Prior Surveys

Comparison with prior surveys was not required under this task order. **Concur.**

D2.c Aids to Navigation (AtoN)

All U.S. Coast Guard aids to navigation (AtoN) within the survey limits were found to be correctly charted and serving their intended purpose. ***Concur.***

D2.d Overhead Clearance

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

D2.e Cables, Pipelines and Offshore Structures

The H11836 survey area contains 35 platforms. Nineteen (19) of the platforms were correctly charted. All of the platforms located during survey operations are depicted in the S-57 feature file. The production platforms were attributed as offshore platforms (OFSPLF) and annotated as production platform in the text description (TXTDES) of the S-57 feature file. ***Concur with clarification. Recommend to update the position of all charted platforms with the results of this survey.***

Elevated sections of pipelines were submitted as DtoN #1 and DtoN #4 are also submitted in the S-57 feature file. The submitted elevated pipelines were not investigated with multibeam sonar, but are included in the feature file. After discussion with the COTR, it was decided that these are temporary and will be reburied as required by the mineral management service. Least depths of these items were estimated based on side scan shadow heights and tide corrected VBES soundings collected in the vicinity of the section of elevated pipeline. Features with estimated least depths have the technique of sounding (TECSOU) attribute set to “found by side scan (2)” and the quality of sounding attribute (QUASOU) set to “unreliable (4)”. ***Concur.***

Ten (10) platforms were disproved with 200% side scan sonar (Figure 12) and are detailed in tabular format in Appendix II *Survey Feature Report**. ***Concur.***
****Included with survey deliverables.***

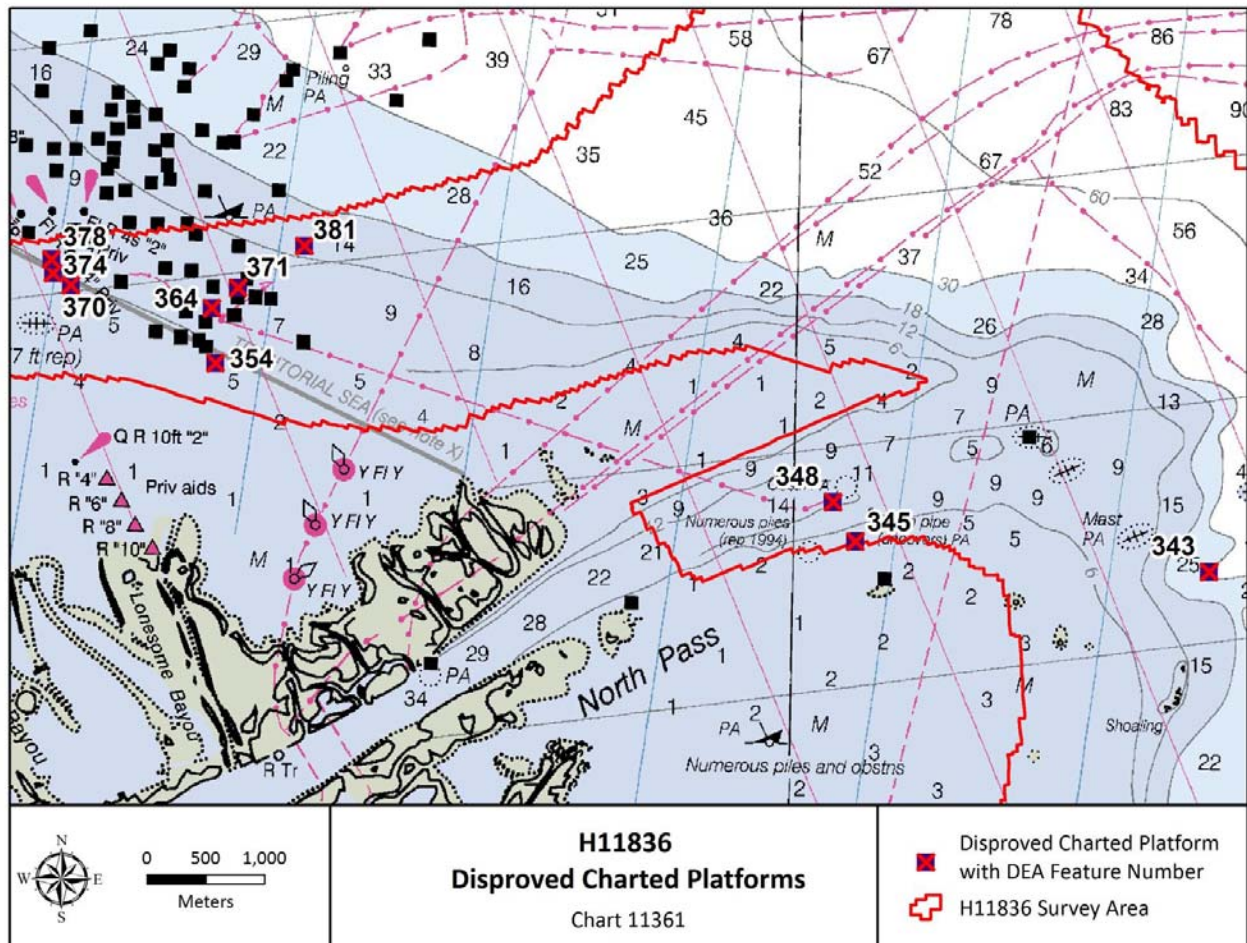


Figure 12. Disproved charted platforms

Six (6) platforms were found to be mischarted (Figure 13) and are detailed in tabular format in Appendix II *Survey Feature Report*. The hydrographer recommends charting these features as depicted in the S-57 feature file. **Concur with clarification. Recommend to update the position of all charted platforms per present survey findings.**

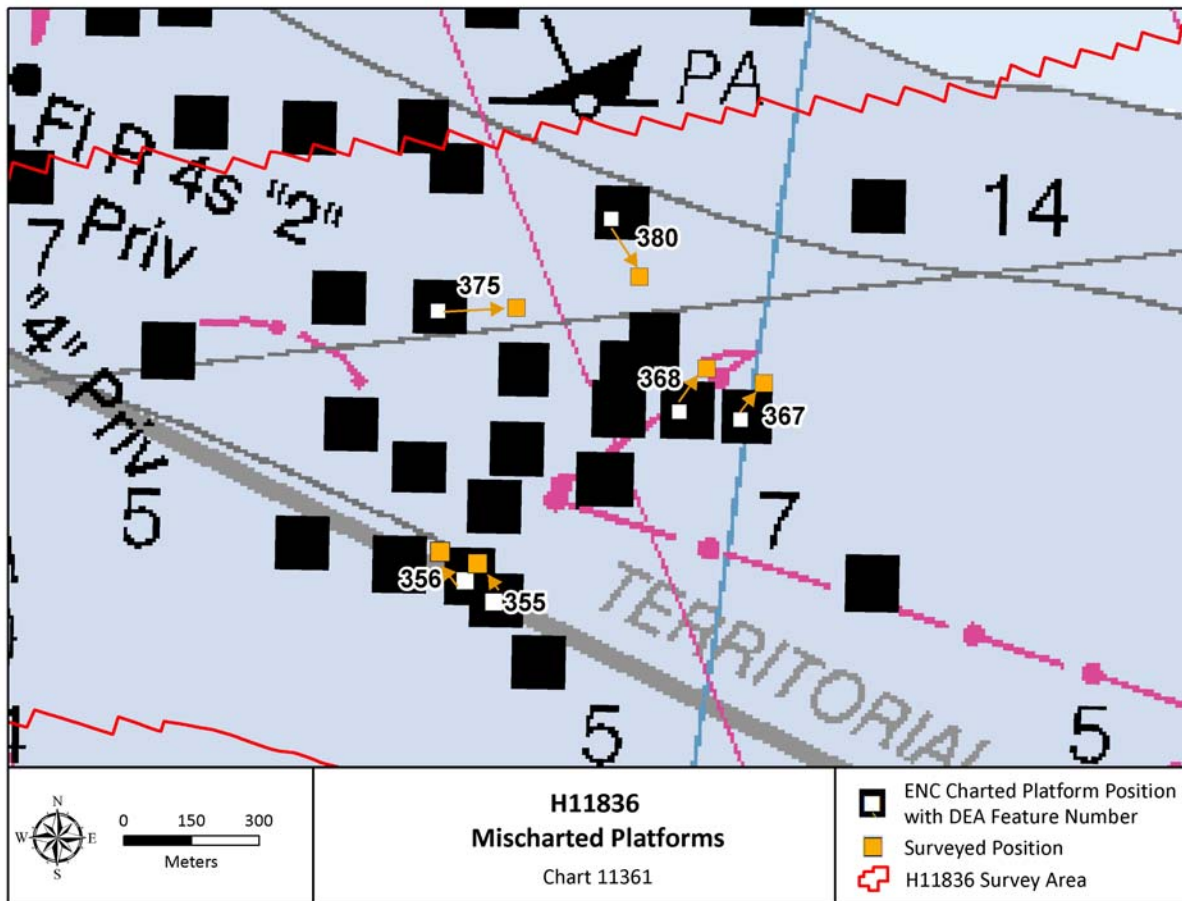


Figure 13. H11836 Mischarted Platforms

D2.f Environmental Conditions and Scientific Significance

Gas seepage was noted at 29-14-10.038N, 089-02-56.73W in 100% side scan sonar from an elevated pipeline. No indication of the leak was evident in the 200% side scan sonar. This area has multiple production platforms in close proximity. **Concur.**

D2.g Construction Projects

No construction projects were observed in H11836. **Concur.**

D2.h Bottom Characteristics

Twenty-three (23) bottom samples were obtained on Day Numbers 202, 206 and 207 (July 20, 24 and 25, 2008) and are included in the S-57 attributed feature file in the *Supporting Data* folder. A table listing the position and description of each bottom sample is included in Appendix V *Supplemental Survey Records and Correspondence*, along with photographs of each sample. **Concur.**

E. LETTER OF APPROVAL

LETTER OF APPROVAL

OPR-J977-DE-08
REGISTRY NO. H11835

This report and the accompanying data are respectfully submitted.

Field operations contributing to the accomplishment of survey H11835 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and associated data have been closely reviewed and are considered complete and adequate as per the OPR-J977-DE-08 *Statement of Work*.

Jon Dasler
Digitally signed by Jon Dasler
DN: cn=Jon Dasler, email=jld@deainc.com,
o=David Evans and Associates, Inc., c=US
Date: 2009.05.01 11:14:13 -07'00'

Jonathan L. Dasler, PE (OR) , PLS (OR,CA)
Lead Hydrographer

Jason Creech
Digitally signed by Jason Creech
DN: cn=Jason Creech, email=jasc@deainc.com,
o=David Evans and Associates, Inc., c=US
Date: 2009.05.01 11:14:34 -07'00'

Jason Creech
Lead Hydrographer

David Evans and Associates, Inc.
August 2008

F. SUPPLEMENTAL REPORTS

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

<u>Title</u>	<u>Submittal Date</u>
OPR-J977-DE-08 Data Acquisition and Processing Report*	November 21, 2008
OPR-J977-DE-08 Horizontal and Vertical Control Report*	May 1, 2009

**Included with survey deliverables.*

Concur.

APPENDIX I
DANGER TO NAVIGATION RECORDS

H11836 DToN#1

Registry Number: H11836
State: Louisiana
Locality: GULF OF MEXICO
Sub-locality: BLIND BAY
Project Number: OPR-J977-DE-08
Survey Date: 06/23/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11361	74th	09/01/2007	1:80,000 (11361_1)	USCG LNM: 09/16/2008 (09/16/2008) NGA NTM: 01/08/2005 (09/20/2008)
11366	11th	01/01/2008	1:250,000 (11366_1)	[L]NTM: ?
11360	42nd	02/01/2007	1:456,394 (11360_1)	[L]NTM: ?
1115A	42nd	02/01/2007	1:456,394 (1115A_1)	[L]NTM: ?
11006	32nd	08/01/2005	1:875,000 (11006_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Obstruction-#30 40-ft Obstruction	GP	12.22 m	29° 12' 31.9" N	088° 56' 56.5" W	---
1.2	Obstruction-#31 37-ft Obstruction	GP	11.20 m	29° 11' 36.7" N	088° 56' 55.8" W	---

1 - Danger To Navigation

1.1) Obstruction-#30 40-ft Obstruction

DANGER TO NAVIGATION

Survey Summary

Survey Position: 29° 12' 31.9" N, 088° 56' 56.5" W
Least Depth: 12.22 m (= 40.09 ft = 6.682 fm = 6 fm 4.09 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-175.00:00:00.000 (06/23/2008)
GP Dataset: H11836_DToN#1.xls
GP No.: 30
Charts Affected: 11361_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

Depths are estimates based on side scan shadow lengths. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana. Horizontal Datum is North American Datum of 1983 (NAD83).

All dangers to navigation are elevated exposed pipelines of various heights and lengths on sheet H11836. Summary chartlets and individual contact images follow.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11836_DToN#1.xls	30	0.00	000.0	Primary

Hydrographer Recommendations

These features were a reported depth. Recommend to apply features as "rep 2008", considering bathy data for a least depth was not collected.

Cartographically-Rounded Depth (Affected Charts):

40ft (11361_1)

6 ½fm (1115A_1, 11360_1, 11006_1, 411_1)

6fm 4ft (11366_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: INFORM - obstn: elevated pipeline section
QUASOU - 9:value reported (not confirmed)
SORDAT - 20080623
SORIND - US,US,survey,H11836
TECSOU - 2:found by side scan sonar
VALSOU - 12.22 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

~~This danger submission is preliminary. No data has been provided to AHB for verification. Feature will be reviewed and verified once the survey data has been submitted.~~

Do not concur. Although this DtoN was originally sent to MCD on 03 OCT 2008, it has since been decided that charting as an obstruction is not necessary, as there exists a note on chart 11361 regarding the existence of exposed pipelines, and for mariners to use extreme caution. Do not chart obstruction. Obstruction is not currently charted so no further action is necessary.

Feature Images
DTON 1.30

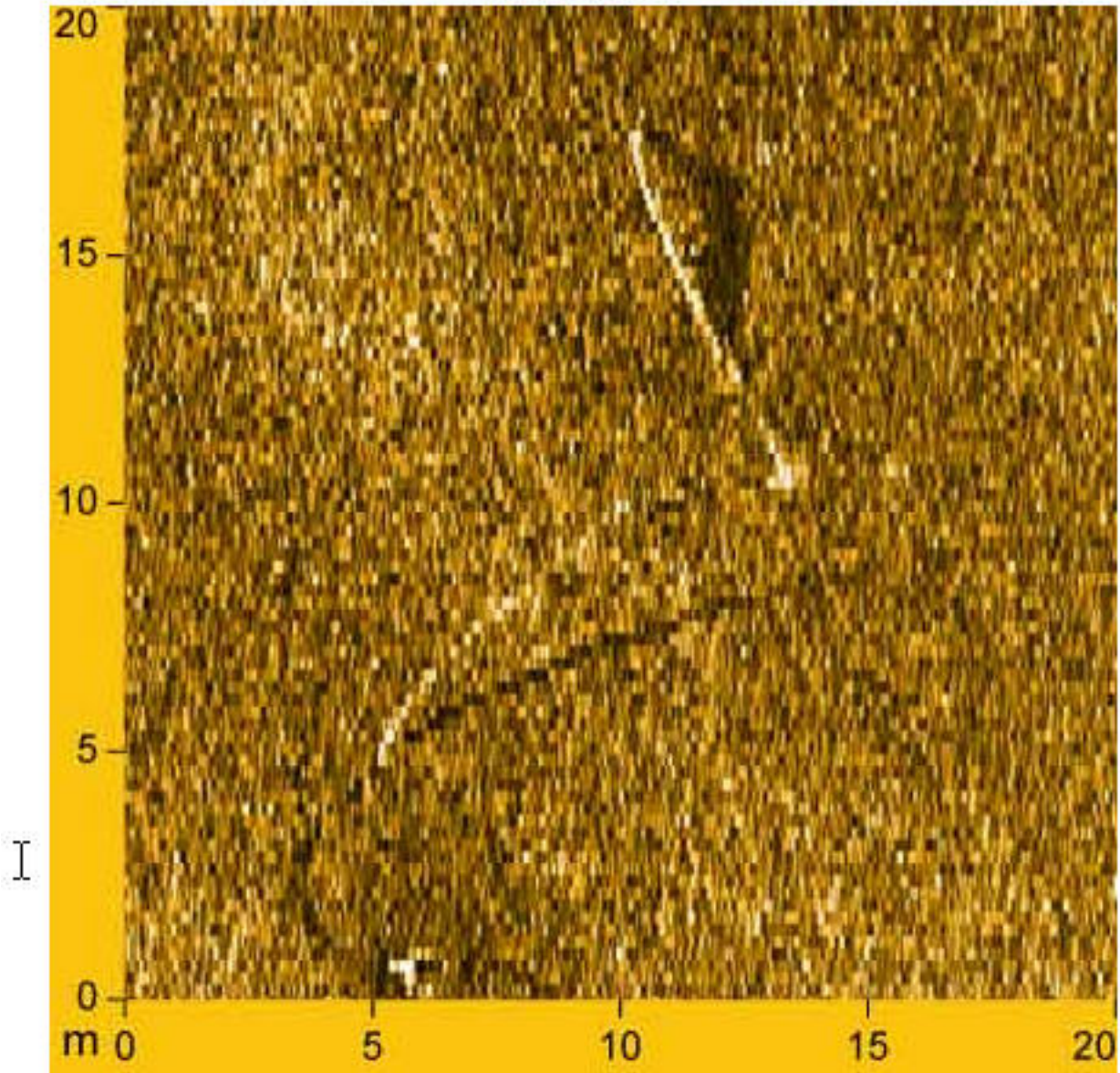


Figure 1.1.1

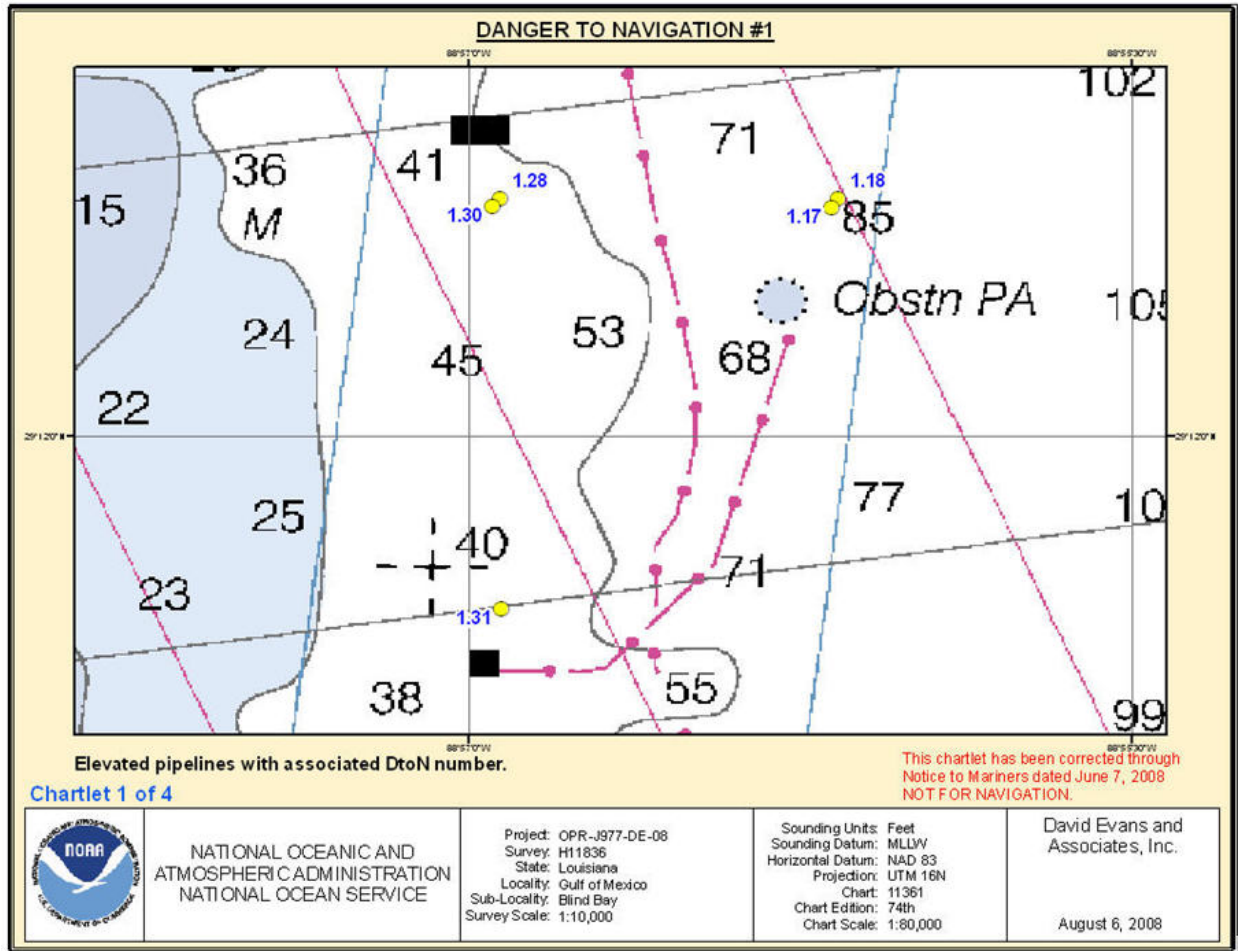


Figure 1.1.2

1.2) Obstruction-#31 37-ft Obstruction

DANGER TO NAVIGATION

Survey Summary

Survey Position: 29° 11' 36.7" N, 088° 56' 55.8" W
Least Depth: 11.20 m (= 36.75 ft = 6.124 fm = 6 fm 0.75 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-175.00:00:00.000 (06/23/2008)
GP Dataset: H11836_DToN#1.xls
GP No.: 31
Charts Affected: 11361_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

Depths are estimates based on side scan shadow lengths. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana. Horizontal Datum is North American Datum of 1983 (NAD83).

All dangers to navigation are elevated exposed pipelines of various heights and lengths on sheet H11836. Summary chartlets and individual contact images follow.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11836_DToN#1.xls	31	0.00	000.0	Primary

Hydrographer Recommendations

These features were a reported depth. Recommend to apply features as "rep 2008", considering bathy data for a least depth was not collected.

Cartographically-Rounded Depth (Affected Charts):

36ft (11361_1)

6fm (1115A_1, 11360_1, 11006_1, 411_1)

6fm 0ft (11366_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)
Attributes: INFORM - obstn: elevated pipeline section
QUASOU - 9:value reported (not confirmed)
SORDAT - 20080623
SORIND - US,US,survey,H11836
TECSOU - 2:found by side scan sonar
VALSOU - 11.2 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

~~This danger submission is preliminary. No data has been provided to AHB for verification. Feature will be reviewed and verified once the survey data has been submitted.~~

Do not concur. Although this DtoN was originally sent to MCD on 03 OCT 2008, it has since been decided that charting as an obstruction is not necessary, as there exists a note on chart 11361 regarding the existence of exposed pipelines, and for mariners to use extreme caution. Do not chart obstruction. Obstruction is not currently charted so no further action is necessary.

Feature Images

DTON 1.31

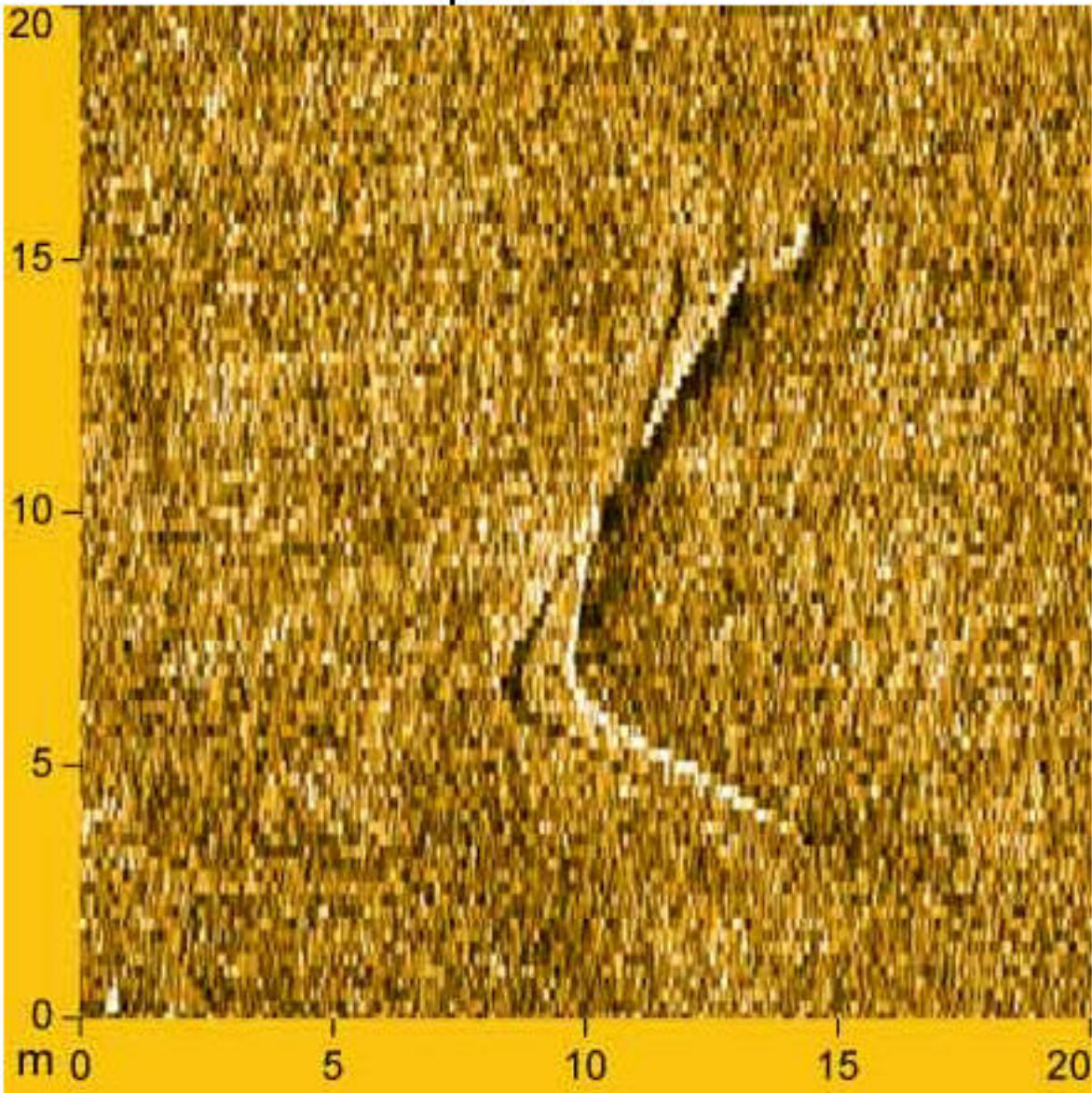


Figure 1.2.1

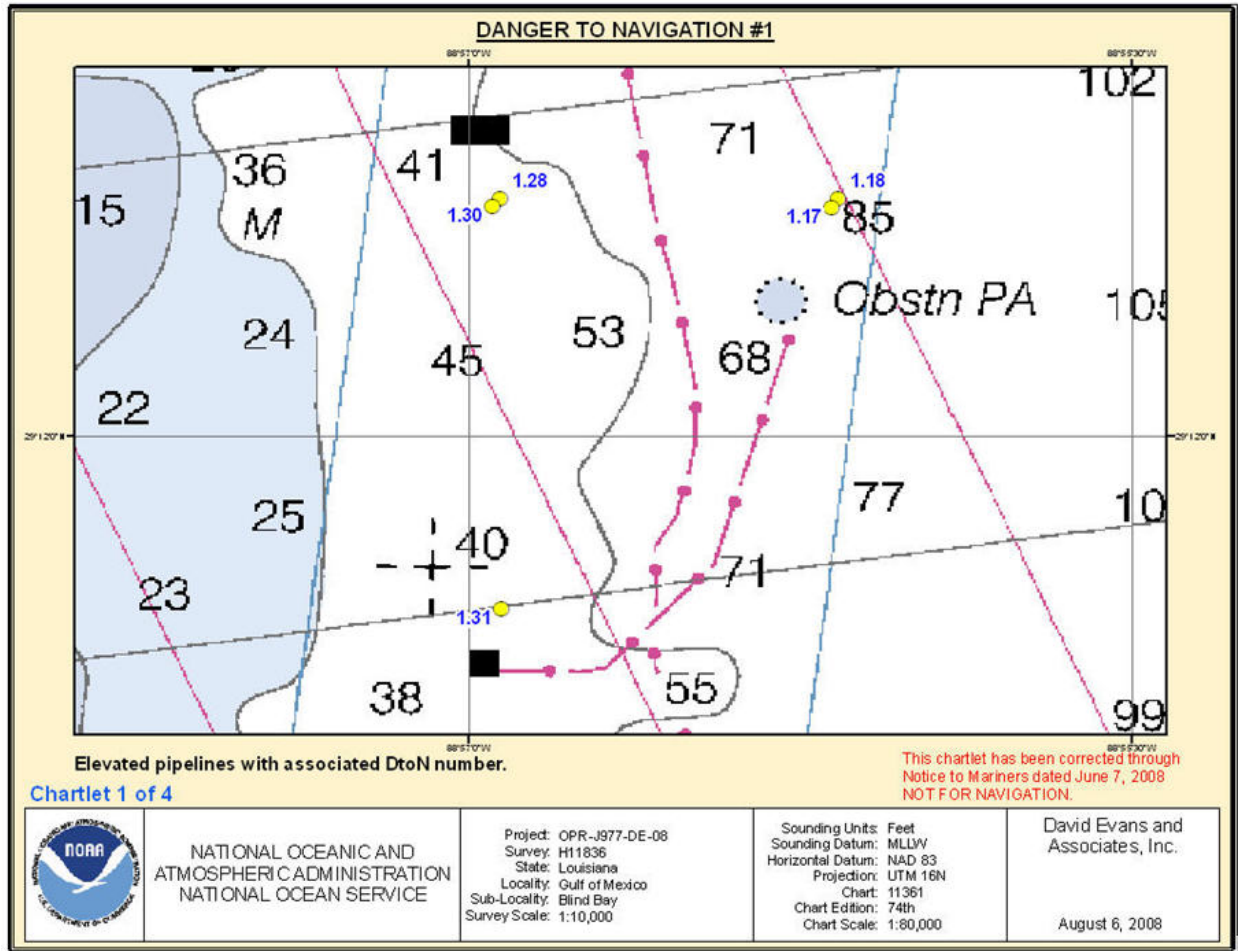


Figure 1.2.2

H11836 DTon #2

Registry Number: H11836
State: Louisiana
Locality: GULF OF MEXICO
Sub-locality: BLIND BAY
Project Number: OPR-J977-DE-08
Survey Date: 06/24/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11361	74th	09/01/2007	1:80,000 (11361_1)	USCG LNM: 09/16/2008 (09/16/2008) NGA NTM: 01/08/2005 (09/20/2008)
11366	11th	01/01/2008	1:250,000 (11366_1)	[L]NTM: ?
11360	42nd	02/01/2007	1:456,394 (11360_1)	[L]NTM: ?
1115A	42nd	02/01/2007	1:456,394 (1115A_1)	[L]NTM: ?
11006	32nd	08/01/2005	1:875,000 (11006_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Obstruction	GP	16.48 m	29° 15' 45.0" N	088° 59' 30.9" W	---

1 - Danger To Navigation

1.1) GP No. - 1 from H11836_DToN#2.xls**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 29° 15' 45.0" N, 088° 59' 30.9" W
Least Depth: 16.48 m (= 54.07 ft = 9.011 fm = 9 fm 0.07 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-176.00:00:00.000 (06/24/2008)
GP Dataset: H11836_DToN#2.xls
GP No.: 1
Charts Affected: 11361_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

Depths were acquired with a Reson 8101 Multibeam Sonar. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417)) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana.

Horizontal Datum is North American Datum of 1983 (NAD83).

The obstruction is a debris pile approximately 5.9ft (1.8m) above the natural bottom.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11836_DToN#2.xls	1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

54ft (11361_1)

9fm (1115A_1, 11360_1, 11006_1, 411_1)

9fm 0ft (11366_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known
SORDAT - 20080624
SORIND - US,US,survey,H11836
TECSOU - 2,3:found by side scan sonar,found by multi-beam
VALSOU - 16.48 m
VERDAT - 12:Mean lower low water
WATLEV - 3:always under water/submerged

Office Notes

~~This Danger submission is preliminary. No data has been provided to AHB for verification. Feature will be reviewed and verified once the survey data has been submitted.~~

Concur. DtoN sent to MCD on 03 OCT 2008, hence obstruction is already on the chart. No further action necessary.

Feature Images

Chartlet to Accompany Danger to Navigation

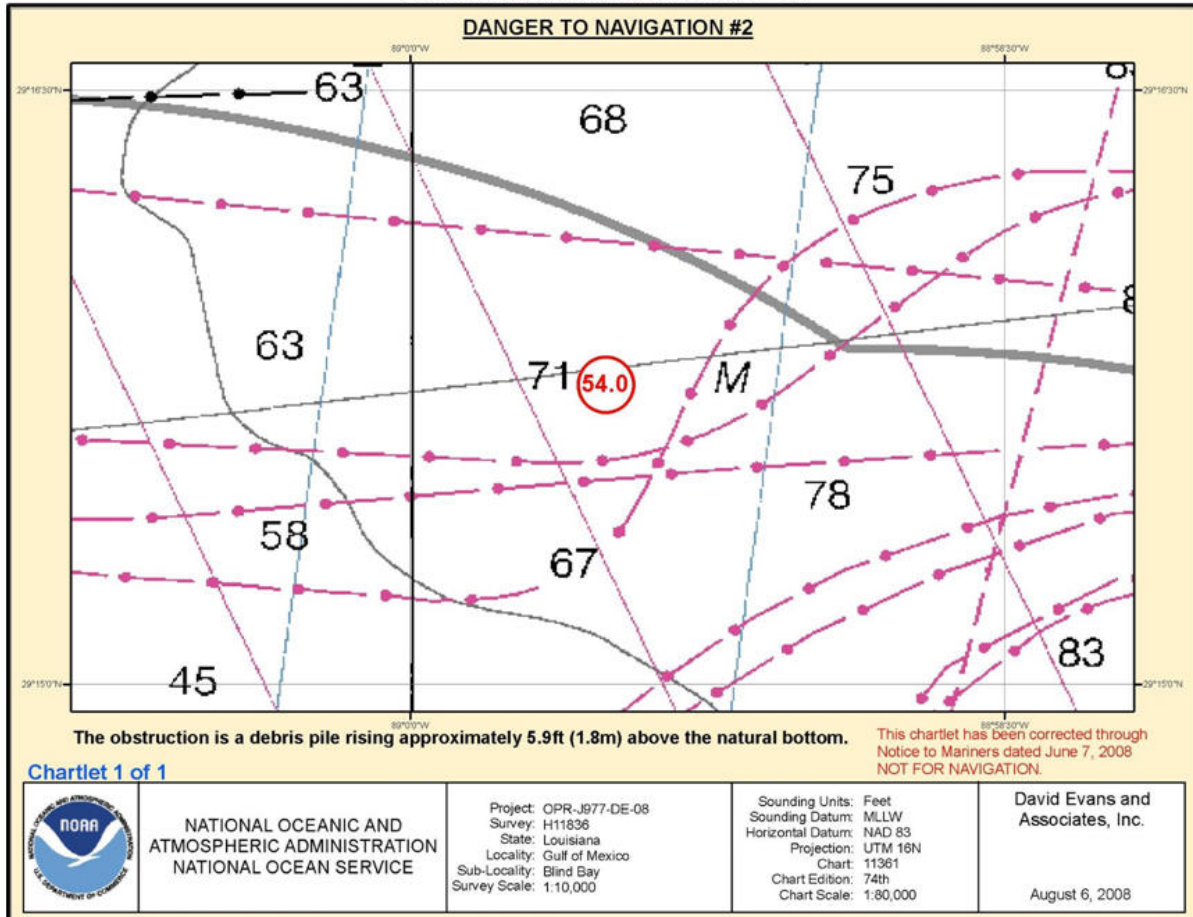


Figure 1.1.1

DTON 2.1, Contact 176-205201-S

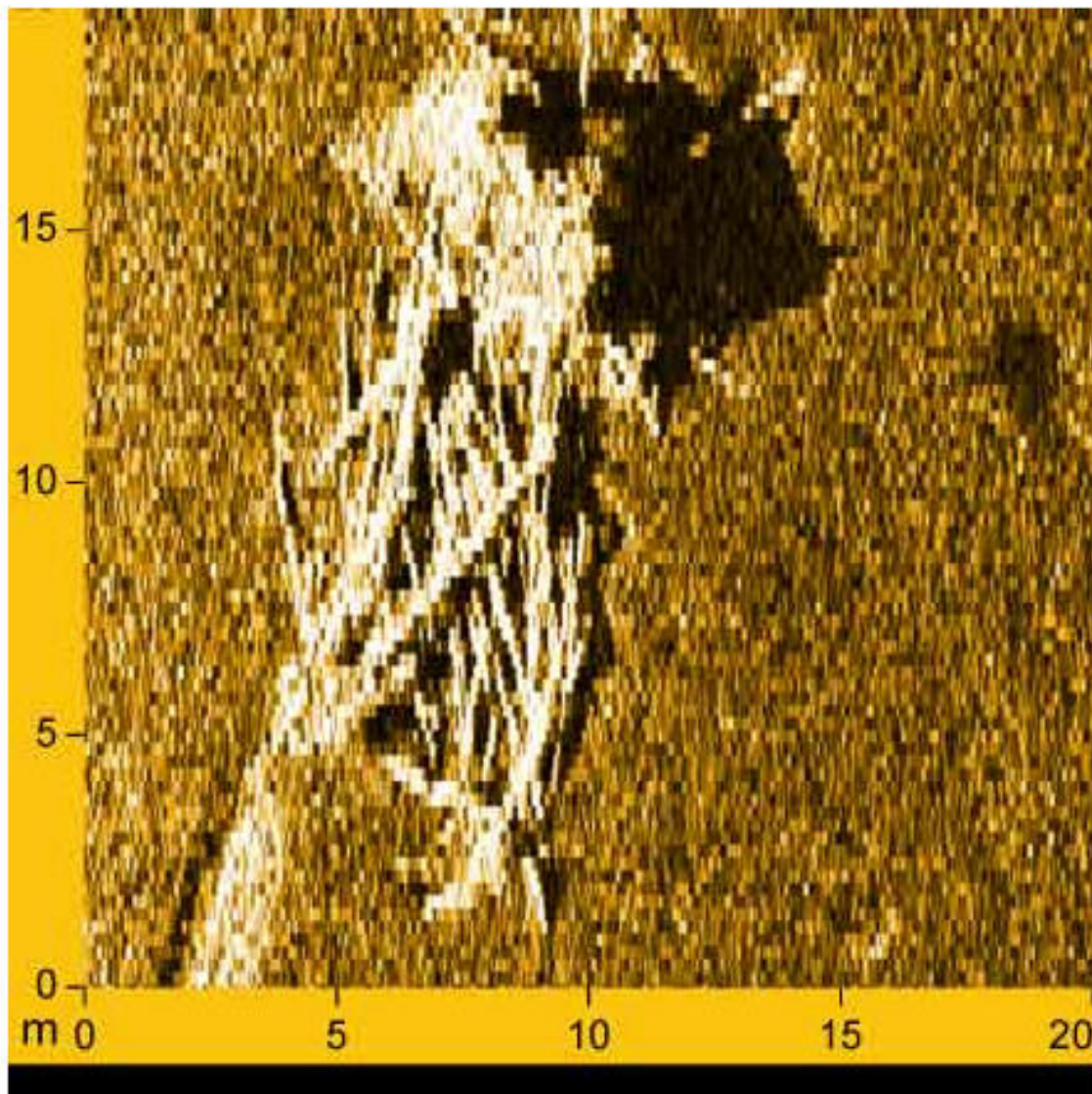


Figure 1.1.2

DTON 2.1, 2D MB

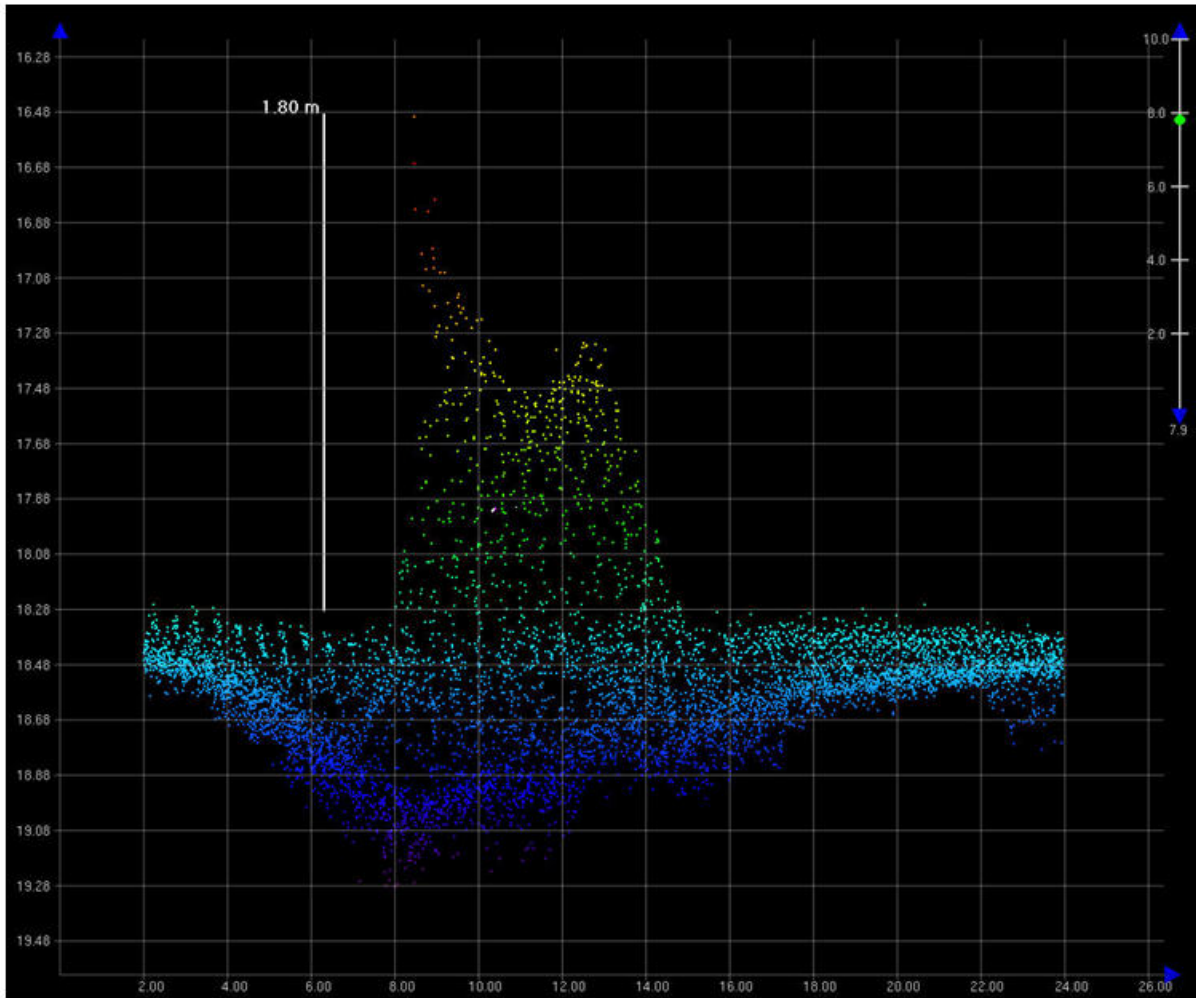


Figure 1.1.3

DTON 2.1, 3D MB

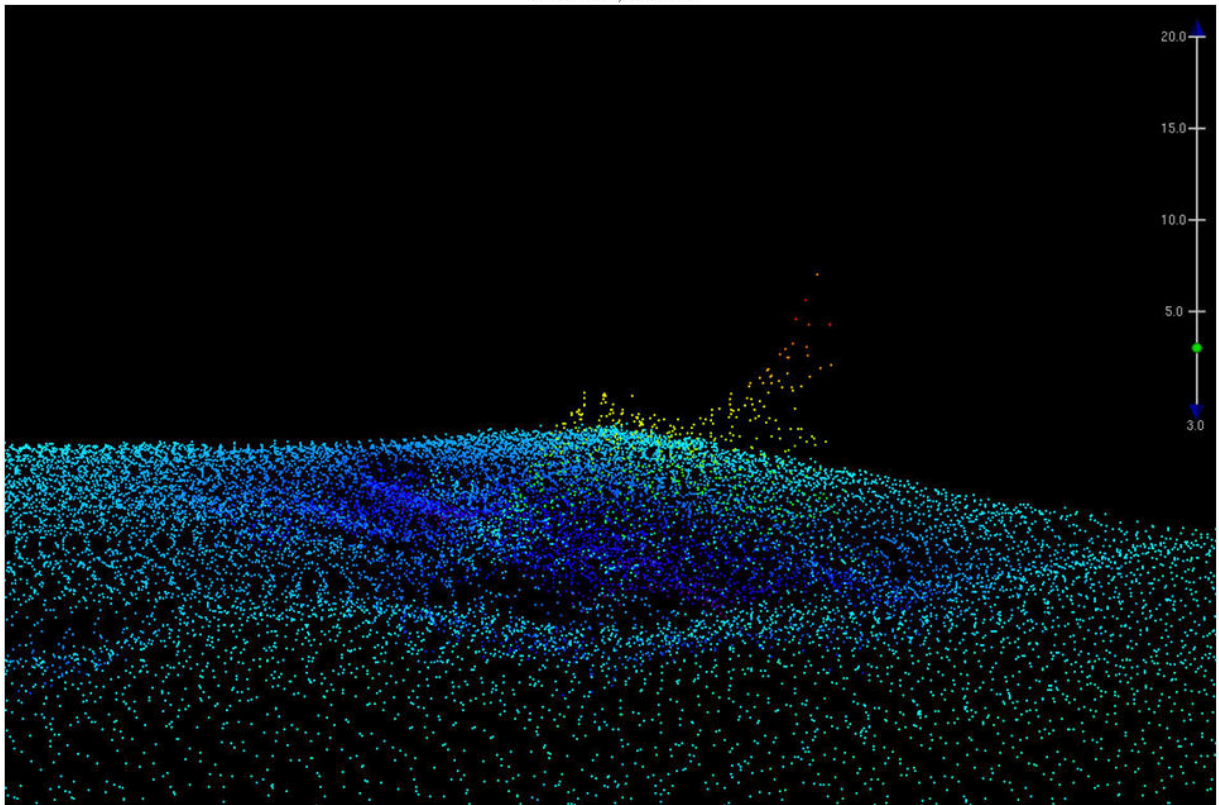


Figure 1.1.4

H11836 DToN#3

Registry Number: H11836
State: Louisiana
Locality: GULF OF MEXICO
Sub-locality: BLIND BAY
Project Number: OPR-J977-DE-08
Survey Date: 06/24/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11361	74th	09/01/2007	1:80,000 (11361_1)	USCG LNM: 09/16/2008 (09/16/2008) NGA NTM: 01/08/2005 (09/20/2008)
11366	11th	01/01/2008	1:250,000 (11366_1)	[L]NTM: ?
11360	42nd	02/01/2007	1:456,394 (11360_1)	[L]NTM: ?
1115A	42nd	02/01/2007	1:456,394 (1115A_1)	[L]NTM: ?
11006	32nd	08/01/2005	1:875,000 (11006_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	4-ft Shoal Sounding #3.1	GP	1.22 m	29° 08' 07.7" N	088° 58' 30.7" W	---
1.2	0-ft Sounding (Shoal Awash) #3.2	GP	0.11 m	29° 07' 46.2" N	088° 58' 59.3" W	---
1.3	4-ft Shoal Sounding #3.3	GP	1.36 m	29° 07' 14.4" N	088° 59' 14.5" W	---

1 - Danger To Navigation

1.1) GP No. - 1 from H11836_DToN#3.xls**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 29° 08' 07.7" N, 088° 58' 30.7" W
Least Depth: 1.22 m (= 4.00 ft = 0.667 fm = 0 fm 4.00 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-176.00:00:00.000 (06/24/2008)
GP Dataset: H11836_DToN#3.xls
GP No.: 1
Charts Affected: 11361_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

Depths were acquired with single beam sonar. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana. Horizontal Datum is North American Datum of 1983 (NAD83).

The sounding represents significant shoaling within survey H11836. In addition, the chartlet illustrates significant movement of the 6, 12, 18, and 30 foot contours.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11836_DToN#3.xls	1	0.00	000.0	Primary

Hydrographer Recommendations

Submit 4-ft sounding as a Danger to Navigation. Append chart with a 4-ft sounding at the surveyed location.

Cartographically-Rounded Depth (Affected Charts):

4ft (11361_1)

0 ½fm (1115A_1, 11360_1, 11006_1, 411_1)

0fm 4ft (11366_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: INFORM - 4-ft Shoal Sounding
QUASOU - 1:depth known
SORDAT - 20080624
SORIND - US,US,Survey,H11836
TECSOU - 1:found by echo-sounder

Office Notes

~~This danger submission is preliminary. No data has been provided to AHB for verification. Feature will be reviewed and verified once the survey data has been submitted.~~

Concur. DtoN sent to MCD on 08 OCT 2008, hence sounding already exists on the chart. No further action necessary.

Feature Images

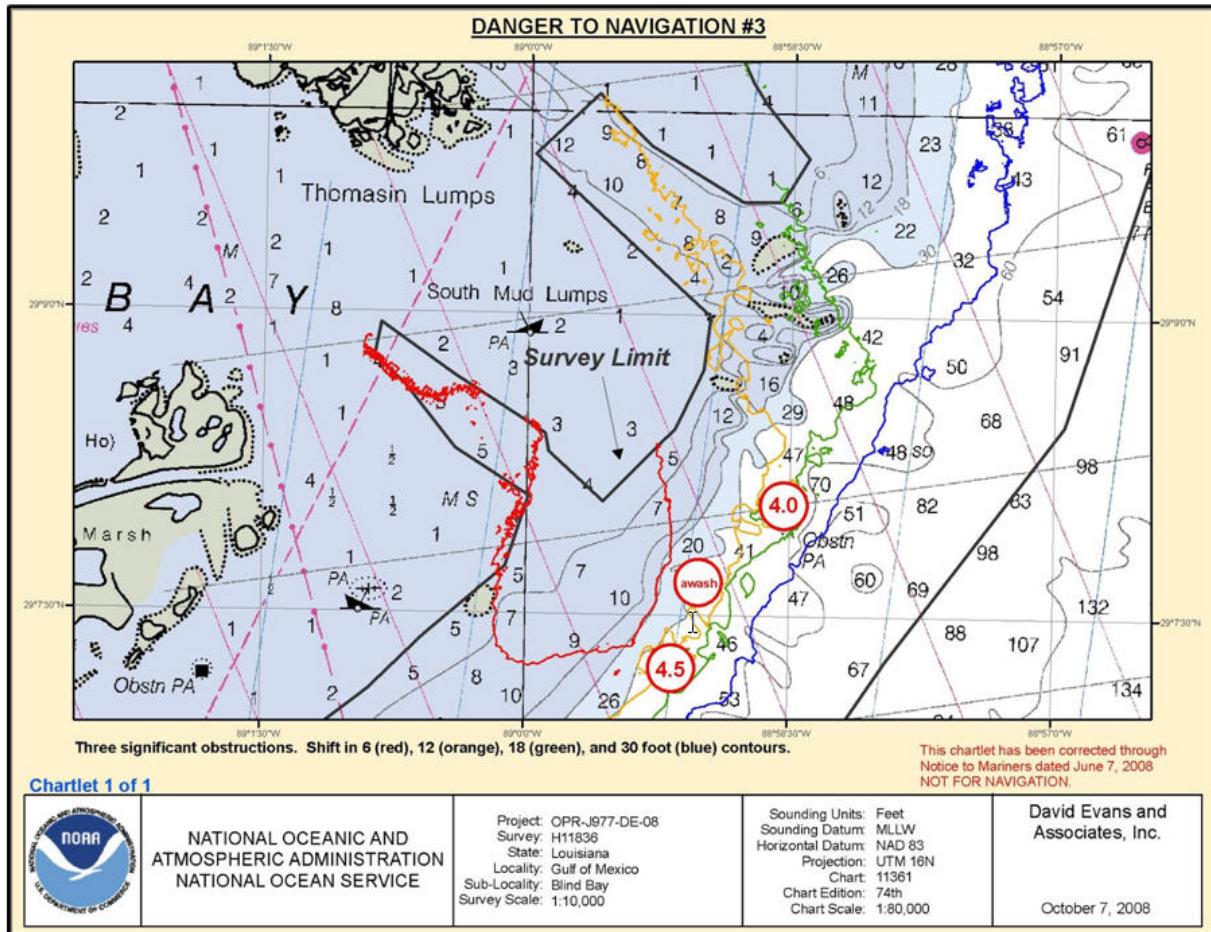


Figure 1.1.1

DTON 3.1

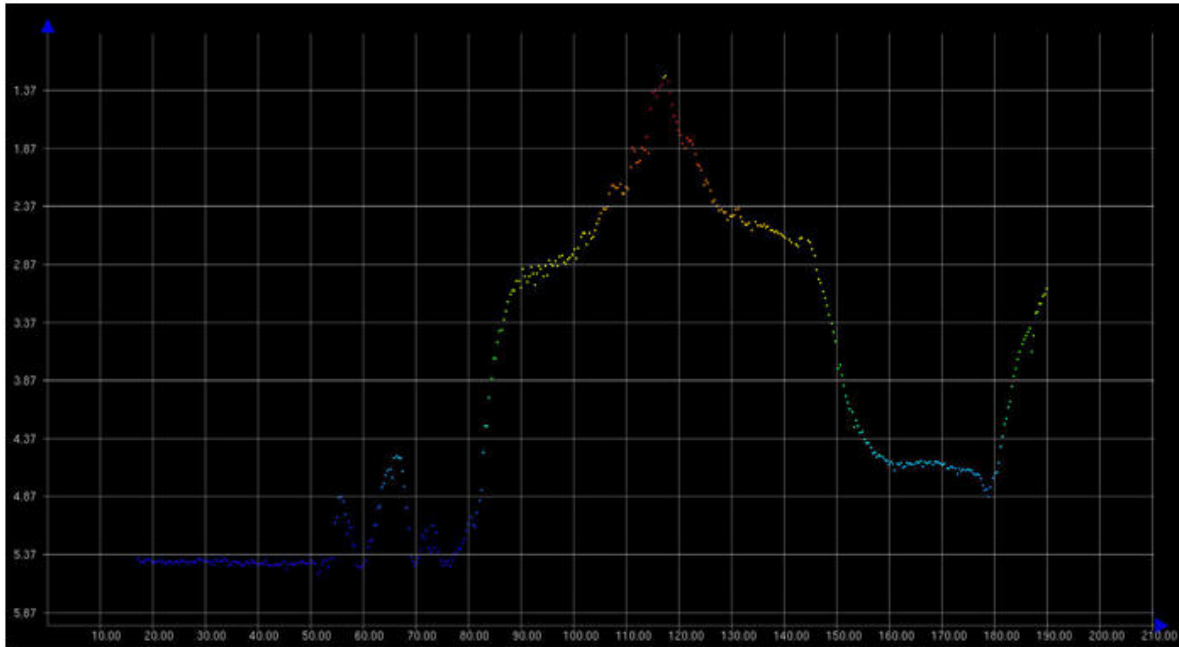


Figure 1.1.2

1.2) GP No. - 2 from H11836_DToN#3.xls**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 29° 07' 46.2" N, 088° 58' 59.3" W
Least Depth: 0.11 m (= 0.36 ft = 0.060 fm = 0 fm 0.36 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-176.00:00:00.000 (06/24/2008)
GP Dataset: H11836_DToN#3.xls
GP No.: 2
Charts Affected: 11361_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

Depths were acquired with single beam sonar. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana. Horizontal Datum is North American Datum of 1983 (NAD83).

The 0-ft sounding (shoal awash) represents a significant shoaling area within survey H11836. The exact limits have not been submitted to AHB for review. This area will be updated during AHB production.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11836_DToN#3.xls	2	0.00	000.0	Primary

Hydrographer Recommendations

Append chart with 0-ft sounding at the surveyed location.

Cartographically-Rounded Depth (Affected Charts):

0ft (11361_1)

0fm (1115A_1, 11360_1, 11006_1, 411_1)

0fm 0ft (11366_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: INFORM - 0-ft Sounding (shoal awash)
QUASOU - 1:depth known
SORDAT - 20080624
SORIND - US,US,Survey,H11836
TECSOU - 1:found by echo-sounder

Office Notes

~~This danger submission is preliminary. No data has been provided to AHB for verification. Feature will be reviewed and verified once the survey data has been submitted.~~

Concur. DtoN sent to MCD on 08 OCT 2008, hence Shoal already exists on the chart. No further action necessary.

Feature Images

DTON 3.2

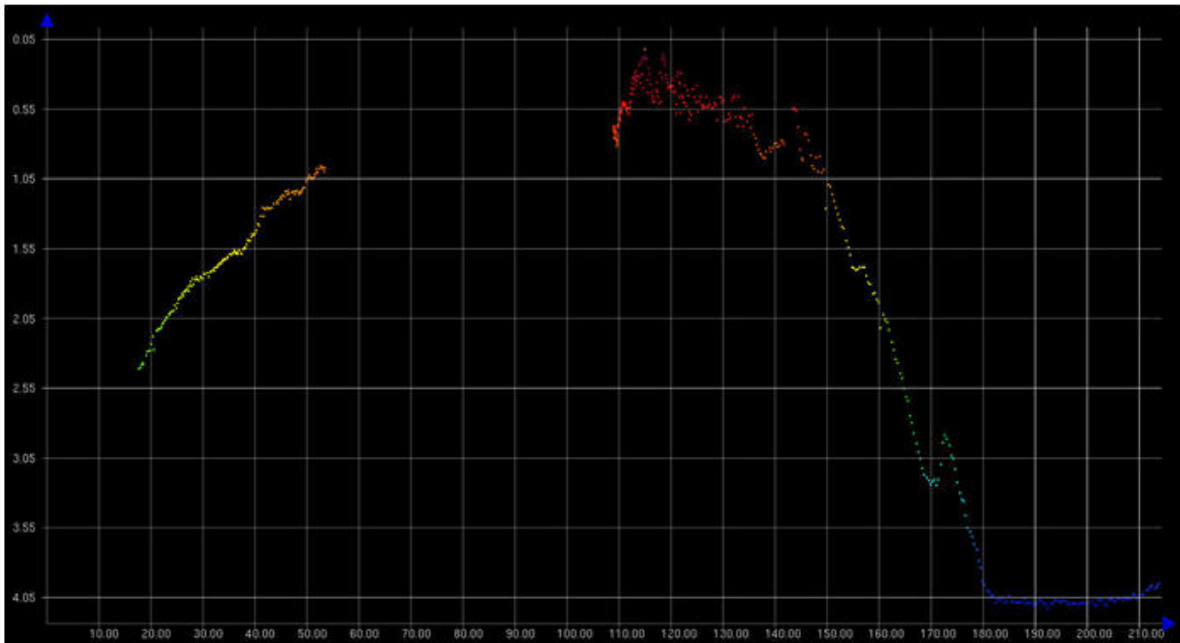


Figure 1.2.1

1.3) GP No. - 3 from H11836_DToN#3.xls**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 29° 07' 14.4" N, 088° 59' 14.5" W
Least Depth: 1.36 m (= 4.46 ft = 0.744 fm = 0 fm 4.46 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2008-176.00:00:00.000 (06/24/2008)
GP Dataset: H11836_DToN#3.xls
GP No.: 3
Charts Affected: 11361_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

Depths were acquired with single beam sonar. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana. Horizontal Datum is North American Datum of 1983 (NAD83).

The 4-ft sounding represents significant shoaling within survey H11836.

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11836_DToN#3.xls	3	0.00	000.0	Primary

Hydrographer Recommendations

Append chart with 4-ft sounding at the surveyed location.

Cartographically-Rounded Depth (Affected Charts):

4ft (11361_1)

0 $\frac{3}{4}$ fm (1115A_1, 11360_1, 11006_1, 411_1)

0fm 4ft (11366_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: INFORM - 4-ft Sounding

QUASOU - 1:depth known

SORDAT - 20080624

SORIND - US,US,Survey,H11836

TECSOU - 1:found by echo-sounder

Office Notes

~~This danger submission is preliminary. No data has been provided to AHB for verification. Feature will be reviewed and verified once the survey data has been submitted.~~

Concur. DtoN sent to MCD on 08 OCT 2008, hence sounding already exists on the chart. No further action necessary.

Feature Images

DTON 3.3

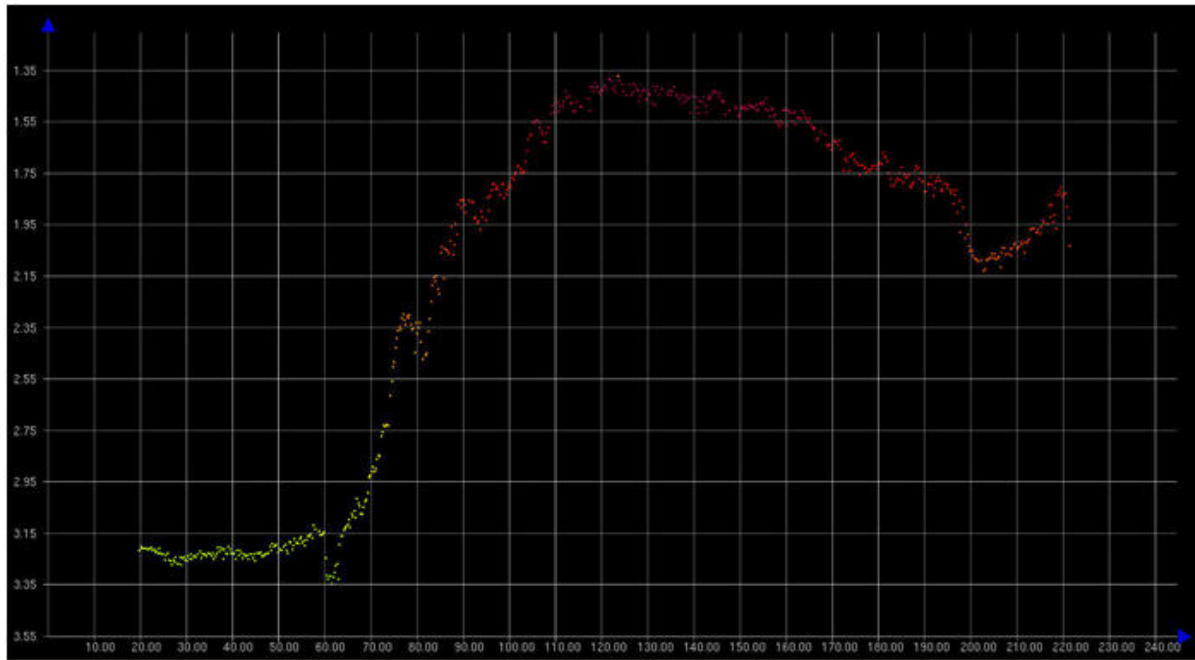


Figure 1.3.1

AHB H11836 0.03ft shoal DToN

Registry Number:

State:

Locality:

Sub-locality:

Project Number:

Survey Date: 06/03/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11361	74th	09/01/2007	1:80,000 (11361_1)	USCG LNM: 04/28/2009 (04/28/2009) NGA NTM: 01/08/2005 (05/02/2009)
11366	11th	01/01/2008	1:250,000 (11366_1)	[L]NTM: ?
11360	43rd	11/01/2008	1:456,394 (11360_1)	[L]NTM: ?
1115A	43rd	11/01/2008	1:456,394 (1115A_1)	[L]NTM: ?
11006	32nd	08/01/2005	1:875,000 (11006_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	0.03m Shoal DToN	Shoal	0.03 m	29° 07' 41.1" N	088° 59' 49.0" W	---

1 - Danger To Navigation

1.1) GP No. - 1 from H11836_DtoN#6.xls

DANGER TO NAVIGATION

Survey Summary

Survey Position: 29° 07' 41.1" N, 088° 59' 49.0" W
Least Depth: 0.03 m (= 0.09 ft = 0.014 fm = 0 fm 0.09 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) [None] ; TVU (TPEv) [None]
Timestamp: 2009-154.00:00:00.000 (06/03/2009)
GP Dataset: H11836_DtoN#6.xls
GP No.: 1
Charts Affected: 11361_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

[None]

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11836_DtoN#6.xls	1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0ft (11361_1)
 0fm (1115A_1, 11360_1, 11006_1, 411_1)
 0fm 0ft (11366_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: QUASOU - 1:depth known
 SORDAT - 01/31/2009
 SORIND - Us,Us,Survy,H11836
 TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

Office Notes

AHB discovered a 0.03m shoal DToN (GP 29.12809353, -088.99695042). This DToN is a shoal area located inside the 6ft contour in a navigationaly insignificant area.AHB recommends charting as a 0ft sounding and modifying the 6ft curve.

APPENDIX II
SURVEY FEATURE REPORT

Registry Number: H11836
State: Louisiana
Locality: Gulf of Mexico
Sub-locality: Blind Bay
Project Number: OPR-J977-DE-08
Survey Date: June 2008 – August 2008; January 2009

List of Features

AWOIS # 351 3
AWOIS # 14125 3
AWOIS # 14129 4
AWOIS # 14130 4
AWOIS # 14131 5
AWOIS # 14133 6
AWOIS # 14134 7
AWOIS # 14135 7

List of Figures

Figure 1 AWOIS 14133 submerged pipe 6

~~AWOIS # 351~~

AWOIS #14135

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS # 351	Undetermined	29/13/24.79	088/58/34.15

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Disproved	N/A	29/13/24.79	088/58/34.15

Remarks:

No vessel term or history was provided for AWIOS Item ~~351~~. No side scan contacts were located in the vicinity of AWOIS Item ~~351~~.

Hydrographer Recommendation:

The hydrographer recommends updating the AWOIS database as disproved.

Concur. Remove wreck.

AWOIS # 14125

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS #14125	200m	29/07/57.8	088/58/31.23

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Disproved	N/A	29/07/57.8	088/58/31.23

Remarks:

The Obstruction PA (AWOIS 14125) obstruction was disproved with 200% side scan sonar and visual search. No indication of an unmarked structure just above the waterline was observed. A series of geologic mounds rising 1.6 to 2.2 feet (0.5 to 0.7 meters) above the natural bottom were observed in a multibeam investigation that fall within the search radius.

Hydrographer Recommendation:

The hydrographer recommends removing the charted obstruction and updating the AWOIS database as disproved.

Concur. Obstruction insignificant for charting.

Remove obstruction from chart.

AWOIS # 14129

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS #14129	400m	29/13/6.79	88/58/12.15

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Disproved	N/A	29/13/6.79	88/58/12.15

Remarks:

The charted wreck (Mast PA) (AWOIS 14129) was disproved with 200% side scan sonar. No indication of a 65 foot wreck with mast visible was observed. A smaller 15 foot wreck was observed 500 meters to the northwest of the AWOIS position outside the search radius and submitted as H11836 DtoN #5 and is included in the S-57 feature file for this survey.

Hydrographer Recommendation:

The hydrographer recommends removing the charted wreck and updating the AWOIS database as disproved. *Concur with clarification. Remove wreck from this position, and chart wreck in the position 500 meters to the northeast. DtoN 5 is AWOIS 14129.*

AWOIS # 14130

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS #14130	400m	29/13/18.79	088/57/30.14

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Disproved	N/A	29/13/18.79	088/57/30.14

Remarks:

The charted wreck (PD) (AWOIS 14130) was disproved with 200% side scan sonar. No indication of an 80 foot barge was observed.

Hydrographer Recommendation:

The hydrographer recommends removing the charted wreck and updating the AWOIS database as disproved. *Concur. Remove wreck from chart.*

AWOIS # 14131

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS #14131	400m	29/13/33	088/58/45

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Disproved	N/A	29/13/33	088/58/45

Remarks:

The charted wrecks (PA) (AWOIS 14131) were disproved with 200% side scan sonar. No indication of dangerous wrecks was observed in the search radius.

Hydrographer Recommendation:

They hydrographer recommends removing the charted wreck and updating the AWOIS database as disproved.

Concur. Remove wreck from chart.

AWOIS # 14133

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS #14133	400m	29/13/12	88/59/36

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Located	6.7 meters	29/13/14.022	088/59/50.907

Remarks:

The charted submerged pipe (uncovers) (AWOIS 14133) was located 420 meters west of the charted position near a disproved charted platform. The pipe rises 5.0 feet (1.5 meters) and has a least depth of 22.1 feet (6.7 meters). The search radius for AWOIS item 14134; submerged rig, (charted Obstruction PA) significantly overlaps the search radius for AWOIS 14133, however no indication of the rig framing was observed. The hydrographer believes this to be the charted submerged pipe.

Hydrographer Recommendation:

The hydrographer recommends removing the pipe and uncovers annotation and charting a submerged pipe at the surveyed position.

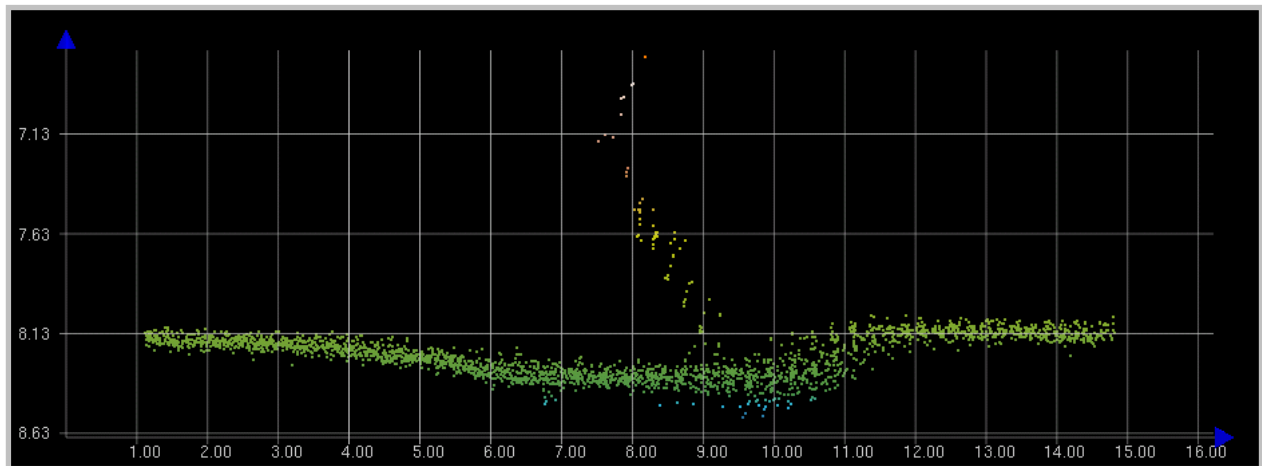


Figure 1 AWOIS 14133 submerged pipe

Concur with clarification. Chart dangerous obstruction "Subm Pipe", least depth 22 feet at the survey position.

AWOIS # 14134

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS #14134	400m	29/13/18	088/59/43

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Disproved	N/A	29/13/18	088/59/43

Remarks:

The charted obstruction (PA) (AWOIS 14134) was disproved with 200% side scan sonar. No indication of a rig remains was observed. An obstruction with a least depth of 6.7 meters at MLLW was observed in a multibeam investigation 250 meters southwest of the charted AWOIS item and was submitted in the H11836 S-57 feature file.

Hydrographer Recommendation:

The hydrographer recommends removing the charted obstruction (PA), updating the AWOIS database as disproved and charting the nearby obstruction as depicted in the S-57 feature file.

Concur with clarification. Delete AWOIS 14134 charted dangerous

AWOIS # 14135

obstruction "PA" and update AWOIS database. It was determined that the nearby obstruction 250m southwest of AWOIS 14134 is AWOIS 14133.

REPORTED

FEATURE	RADIUS	LATITUDE (N)	LONGITUDE (W)
AWOIS #14135	500m	29/14/00.79	89/4/00.16

SURVEYED

FEATURE	LEAST DEPTH	LATITUDE (N)	LONGITUDE (W)
Disproved	N/A	29/14/00.79	89/4/00.16

Remarks:

The charted wreck (PA) (AWOIS 14135) was disproved with 200% side scan sonar within the survey limits. No indication of a wreck with mast or the reported 7 feet of water was observed. Portions of the search radius were outside the survey area and not investigated. The hydrographer recommends removing the charted obstruction (PA), updating the AWOIS database as disproved

Hydrographer Recommendation:

The hydrographer recommends removing the charted obstruction (PA), updating the AWOIS database as disproved.

Concur with clarification. Remove charted wreck PA and (7 ft rep).

Appendix II
S-57 Features

OPR-J977-DE-08
H11836
Survey Features
OBSTRN

Charted:

None

Mischarted:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
347	29-13-11.601	88-59-35.509	29-13-14.022	088-59-50.907	Mischarted obstruction. AWOIS item 14133.	Remove charted submerged pipe. Chart as depicted in the S-57 feature file.

Concur.

Disproved:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
349	29-13-18.516	88-59-43.890	---	---	Disproved; AWOIS # 14134	Remove from chart
337	29-07-57.000	88-58-31.001	---	---	Disproved; AWOIS # 14125	Remove from chart
340	29-12-18.000	88-56-17.995	---	---	Appears to be geological mounds in this area	Remove from chart

Concur.

Concur.

Concur.

New:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
---	---	---	29-12-57.304	088-57-47.872	DEA Charted Feature # 343. Charted platform disproved. Possible platform ruins	Chart as depicted in the S-57 feature file. Concur.
---	---	---	29-14-26.145	089-02-43.445	Debris rising 1.2 meters above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-15.684	089-00-30.296	H11836 DtoN #1.01. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-15.629	089-00-19.346	H11836 DtoN #1.02. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-34.986	088-59-14.024	H11836 DtoN #1.03. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-09.700	089-00-06.682	H11836 DtoN #1.04. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-16.043	088-59-33.317	H11836 DtoN #1.05. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-15.830	088-59-22.844	H11836 DtoN #1.06. Exposed pipeline, possibly broken.	Chart as depicted in the S-57 feature file. Do not concur.

OPR-J977-DE-08
H11836
Survey Features
OBSTRN

New (Cont'd.):

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
---	---	---	29-13-04.771	088-59-55.903	H11836 DtoN #1.07. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-11.719	088-59-16.454	H11836 DtoN #1.08. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-26.185	089-02-41.975	H11836 DtoN #1.09. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-25.818	089-02-42.558	H11836 DtoN #1.10. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-19.252	089-02-47.749	H11836 DtoN #1.11. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-22.484	089-03-07.708	H11836 DtoN #1.12. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-13.877	089-02-42.310	H11836 DtoN #1.13. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-26.178	089-02-41.669	H11836 DtoN #1.14. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-21.998	089-02-32.320	H11836 DtoN #1.15. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-30.379	089-02-47.778	H11836 DtoN #1.16. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-12-32.479	088-56-10.079	H11836 DtoN #1.17. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-12-31.255	088-56-10.907	H11836 DtoN #1.18. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-38.287	088-59-12.142	H11836 DtoN #1.19. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-56.158	088-59-02.162	H11836 DtoN #1.20. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.

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Survey Features
OBSTRN

New (Cont'd.):

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
---	---	---	29-14-02.242	089-03-03.974	H11836 DtoN #1.21. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-09.499	089-02-48.091	H11836 DtoN #1.22. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-03.631	089-02-49.236	H11836 DtoN #1.23. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-55.265	089-02-39.444	H11836 DtoN #1.24. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-04.542	089-03-03.784	H11836 DtoN #1.25. Pipelines elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-13.470	089-02-49.553	H11836 DtoN #1.26. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-41.671	088-56-57.703	H11836 DtoN #1.27. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-12-31.579	088-56-56.681	H11836 DtoN #1.28. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-14-10.057	089-02-56.749	H11836 DtoN #1.29. Pipeline elevated above the natural bottom with nearby gas seep.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-12-31.950	088-56-56.486	H11836 DtoN #1.30. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-11-36.712	088-56-55.759	H11836 DtoN #1.31. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-59.340	089-03-06.754	H11836 DtoN #1.32. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.

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Survey Features
OBSTRN

New (Cont'd.):

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
---	---	---	29-15-44.604	088-59-31.128	H11836 DtoN #2.1. Debris pile rising 1.8 meters above the natural bottom.	No action necessary feature is charted Concur.
---	---	---	29-14-04.646	088-58-56.428	H11836 DtoN #4.1. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-13-14.984	088-58-16.709	H11836 DtoN #4.2. Pipeline elevated above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur.
---	---	---	29-12-37.895	088-56-58.404	Linear object rising 0.7 meters above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur, insignificant.
---	---	---	29-13-06.205	088-59-33.947	New obstruction at mudline. Multibeam investigation non-conclusive due to shape.	Chart as depicted in the S-57 feature file. Do not concur, insignificant.
---	---	---	29-14-21.727	089-03-00.613	New obstruction rising 2.0 meters above the natural bottom 200 meters northwest of mischarted platform DEA Feature #380.	Chart as depicted in the S-57 feature file. Concur.
---	---	---	29-11-17.575	088-58-16.478	Object rising 0.6 meters above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur, insignificant.
---	---	---	29-09-43.717	088-57-32.909	Object rising 0.8 meters above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur, insignificant.
---	---	---	29-13-09.810	089-00-23.152	Object rising 0.8 meters from the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur, insignificant.
---	---	---	29-06-21.511	088-59-18.322	Object rising 0.9 meters above the natural bottom.	Chart as depicted in the S-57 feature file. Do not concur, insignificant.
---	---	---	29-13-06.911	088-56-43.110	Objects rising 0.6 meters above the natural bottom over charted pipeline.	Chart as depicted in the S-57 feature file. Do not concur, insignificant.
---	---	---	29-14-28.679	089-03-08.086	Obstruction rising 1.5 meters above the natural bottom.	Chart as depicted in the S-57 feature file. Concur.
---	---	---	29-14-29.891	089-01-59.601	Rectangular object 10 meters long by 5 meters wide rising 1 meter above the natural bottom.	Chart as depicted in the S-57 feature file. Concur.

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Survey Features
OBSTRN

New (Cont'd.):

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
---	---	---	29-13-36.724	088-58-46.806	Submerged pile 80 meters north of charted platform, DEA Feature #353	Chart as depicted in the S-57 feature file. <i>Do not concur.</i>
---	---	---	29-13-35.721	088-58-46.805	Submerged pile 80 meters north of charted platform, DEA Feature #353	Chart as depicted in the S-57 feature file. <i>Concur.</i>
---	---	---	29-13-04.461	088-59-34.995	Submerged pile rising 1.7 meters above the natural bottom.	Chart as depicted in the S-57 feature file. <i>Concur.</i>
---	---	---	29-14-08.761	089-02-56.537	Submerged piles 3 meters east of DEA Feature #366, a charted platform. Shadow off end of record, least depth not obtained. Marked as examined due to proximity to charted platform.	Chart as depicted in the S-57 feature file. <i>Do not concur.</i>

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H11836
Survey Features
OF SPLF

Charted:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
339	--	--	29-11-29.872	88-56-58.628	DEA Feature #339. Charted platform.	No action is required. Concur.
341	--	--	29-12-41.368	88-57-02.336	DEA Feature #341. Charted platform.	No action is required. Concur.
342	--	--	29-12-41.623	88-57-00.032	DEA Feature #342. Charted platform.	No action is required. Concur.
353	--	--	29-13-33.539	88-58-45.955	DEA Feature #353. Charted platform.	No action is required. Concur.
357	--	--	29-13-56.924	89-02-36.586	DEA Feature #357. Charted platform.	No action is required. Concur.
358	--	--	29-13-58.141	89-03-12.780	DEA Feature #358. Charted platform.	No action is required. Concur.
359	--	--	29-13-59.236	89-03-21.125	DEA Feature #359. Charted platform.	No action is required. Concur.
361	--	--	29-14-02.663	89-03-05.551	DEA Feature #361. Charted platform.	No action is required. Concur.
362	--	--	29-14-04.337	89-02-57.793	DEA Feature #362. Charted platform.	No action is required. Concur.
363	--	--	29-14-04.538	89-03-10.760	DEA Feature #363. Charted platform.	No action is required. Concur.
365	--	--	29-14-08.138	89-03-17.795	DEA Feature #365. Charted platform.	No action is required. Concur.
366	--	--	29-14-08.930	89-02-56.350	DEA Feature #366. Charted platform.	No action is required. Concur.
369	--	--	29-14-12.232	89-03-01.962	DEA Feature #369. Charted platform.	No action is required. Concur.
372	--	--	29-14-13.330	89-03-31.990	DEA Feature #372. Charted platform.	No action is required. Concur.
373	--	--	29-14-13.862	89-02-53.074	DEA Feature #373. Charted platform.	No action is required. Concur.
376	--	--	29-14-17.585	89-03-19.012	DEA Feature #376. Charted platform.	No action is required. Concur.
379	--	--	29-14-20.177	89-04-38.302	DEA Feature #379. Charted platform.	No action is required. Concur.
382	--	--	29-14-25.789	89-03-44.384	DEA Feature #382. Charted platform.	No action is required. Concur.
383	--	--	29-14-27.157	89-03-09.090	DEA Feature #383. Charted platform.	No action is required. Concur.

Note: update position of each platform per present survey findings.

Disproved:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
343	29-12-56.797	88-57-48.125	---	---	Disproved	Remove chd platform Concur.
345	29-13-03.576	88-59-40.067	---	---	Disproved	Remove chd platform Concur.
348	29-13-14.491	88-59-47.321	---	---	Disproved	Remove chd platform Concur.
354	29-13-50.020	89-03-03.258	---	---	Disproved	Remove chd platform Concur.

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Survey Features
OF SPLF

Disproved (cont):

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude	Surveyed Latitude (N)	Surveyed Longitude	Remarks	Chart Recommendation
364	29-14-05.233	89-03-04.694	---	---	Disproved	Remove chd platform Concur.
370	29-14-10.972	89-03-49.442	---	---	Disproved	Remove chd platform Concur.
371	29-14-10.993	89-02-56.540	---	---	Disproved	Remove chd platform Concur.
374	29-14-14.194	89-03-55.087	---	---	Disproved	Remove chd platform Concur.
378	29-14-18.053	89-03-55.714	---	---	Disproved	Remove chd platform Concur.
381	29-14-22.934	89-02-35.891	---	---	Disproved	Remove chd platform Concur.

Mischarted:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
367	29-14-07.789	89-02-46.561	29-14-10.421	89-02-44.689	DEA Feature #367. Mischarted Platform	Remove charted platform. Chart as depicted in the S-57 feature file. Concur.
368	29-14-08.297	89-02-51.594	29-14-11.404	89-02-49.387	DEA Feature #368. Mischarted Platform	Remove charted platform. Chart as depicted in the S-57 feature file. Concur.
375	29-14-15.223	89-03-11.502	29-14-15.547	89-03-05.058	DEA Feature #375. Mischarted Platform	Remove charted platform. Chart as depicted in the S-57 feature file. Concur.
380	29-14-22.085	89-02-57.440	29-14-17.927	89-02-55.014	DEA Feature #380. Mischarted Platform	Remove charted platform. Chart as depicted in the S-57 feature file. Concur.
355	29-13-54.413	89-03-06.535	29-13-57.158	89-03-07.891	DEA Feature #355. Charted platform.	Remove charted platform. Chart as depicted in the S-57 feature file. Concur.
356	29-13-55.84	89-03-885	29-13-57.954	89-03-10.969	DEA Feature #356. Charted platform.	Remove charted platform. Chart as depicted in the S-57 feature file. Concur.

New:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
--	--	--	29-14-19.014	89-04-30.709	Uncharted Platform	Add new platform Concur.
--	--	--	29-14-12.930	89-04-16.939	Uncharted Platform	Add new platform Concur.
--	--	--	29-14-08.952	89-04-04.256	Uncharted Platform	Add new platform Concur.
--	--	--	29-13-47.222	89-03-32.620	Uncharted Platform	Add new platform Concur.
--	--	--	29-14-20.796	89-03-37.505	Uncharted Platform	Add new platform Concur.
--	--	--	29-14-10.104	89-03-14.339	Uncharted Platform	Add new platform Concur.

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Survey Features
PILPNT

Charted:

None

Mischarted:

None

Disproved:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
344	29-13-00.084	88-59-55.212	--	--	Disproved charted Numerous Piles	Remove danger symbol and annotation.

Do not concur. Insufficient evidence for removal (danger circle not completely ensonified). Retain as charted.

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H11836
Survey Features
WRECKS

Charted:

None

Mischarted:

None

Disproved:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
346	29-13-05.783	88-58-11.917	--	--	Disproved; AWOIS 14129	Remove from chart. Concur.
350	29-13-18.786	88-57-30.150	--	--	Disproved; AWOIS 14130	Remove from chart. Concur.
351	29-13-23.588	88-58-34.093	--	--	Disproved	Remove from chart. Concur.
352	29-13-32.995	88-58-44.998	--	--	Disproved; AWOIS 14131	Remove from chart. Concur.
360	29-13-59.657	89-04-00.386	--	--	Disproved; AWOIS 14135	Remove from chart. Concur.

New:

DEA Charted Feature ID	ENC Latitude (N)	ENC Longitude (W)	Surveyed Latitude (N)	Surveyed Longitude (W)	Remarks	Chart Recommendation
--	--	--	29-13-19.596	88-58-03.540	H11836 DtoN #5.1. Uncharted wreck.	Add new wreck. Concur.
--	--	--	29-14-02.036	089-03-08.502	Uncharted wreck.	Add new wreck. Concur.

APPENDIX III
FINAL PROGRESS SKETCH AND SURVEY OUTLINE

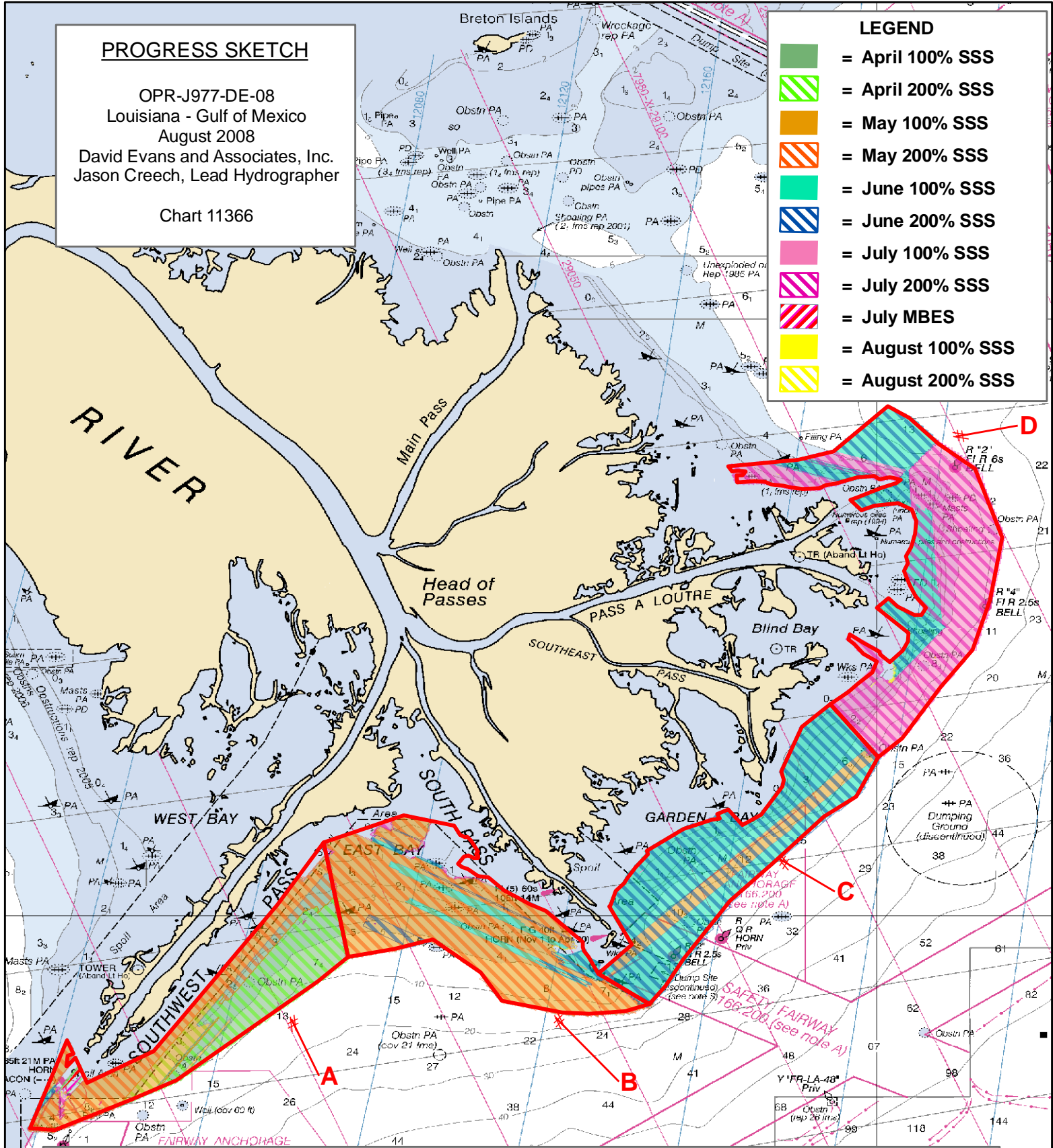
PROGRESS SKETCH

OPR-J977-DE-08
 Louisiana - Gulf of Mexico
 August 2008
 David Evans and Associates, Inc.
 Jason Creech, Lead Hydrographer

Chart 11366

LEGEND

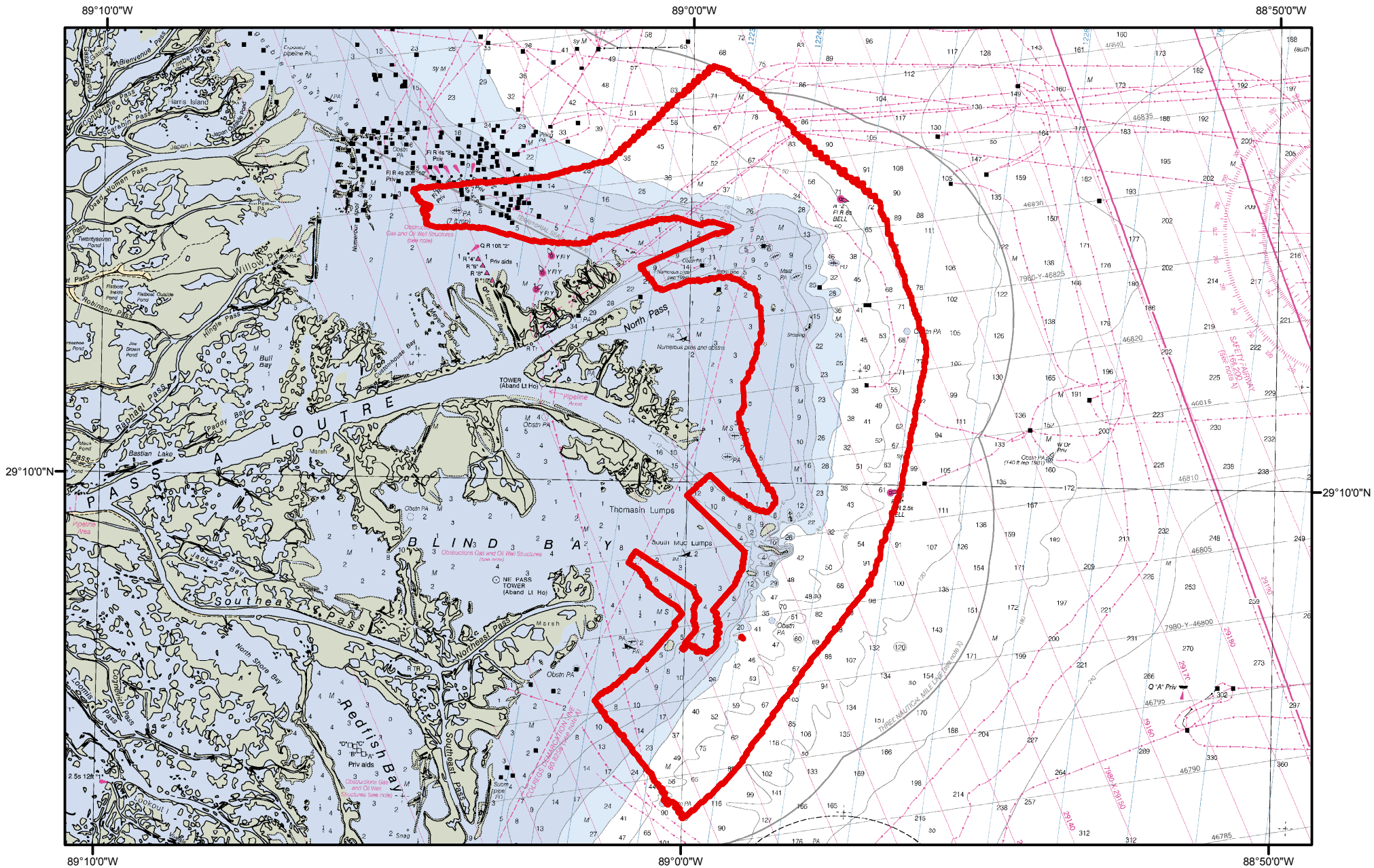
- = April 100% SSS
- = April 200% SSS
- = May 100% SSS
- = May 200% SSS
- = June 100% SSS
- = June 200% SSS
- = July 100% SSS
- = July 200% SSS
- = July MBES
- = August 100% SSS
- = August 200% SSS



Sheet	Reg No	Started	Percent	Completed	Submitted	SQ NM
A	H11833	4/15/2008	100.0%	8/22/2008		0.01
B	H11834	4/28/2008	100.0%	8/22/2008		0.01
C	H11835	5/21/2008	100.0%	7/26/2008		0.00
D	H11836	6/22/2008	100.0%	8/20/2008		0.04

Down time	April	May	June	July	August
Weather - Day	2.5	12.7	9.1	7.0	4.0
Equipment - Day	2.0	1.0	1.2	1.3	0
Other - Day	0	0	0	0	0

Accomplished	April	May	June	July	August
LNM SSS/SB	511.2	1496.9	1611.1	1014.4	3.9
LNM MBES	0	0	0	18.6	0
SQ NM	10.43	33.24	32.62	21.62	0.05
Bottom Samples	0	0	0	80	0
AWOIS Investigations	0	0	0	0	0
Other Investigations	0	2	14	86	86
Tide Gauges Installed/Removed	1	0	0	0	0
Days at Sea	16	31	30	31	10



0 0.5 1 2
Nautical Miles

SURVEY OUTLINE

H11836
 OPR-J977-DE-08
 Gulf of Mexico
 David Evans and Associates
 Jon Dasler Lead Hydrographer
 Chart 11361

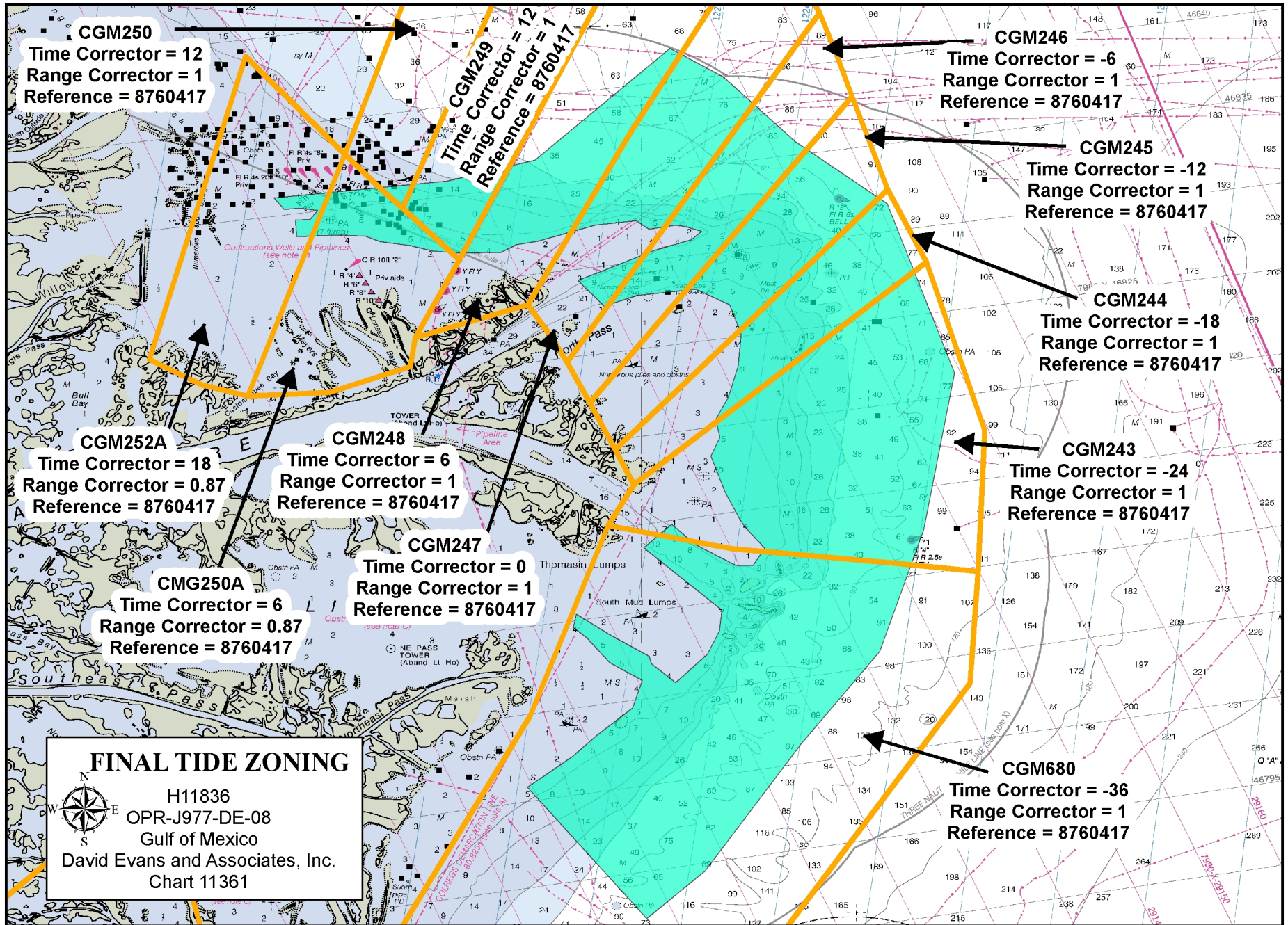
APPENDIX IV
TIDES AND WATER LEVELS

OPR-J977-DE-08
H11836
Times of Hydrography

Date	Start	End
6/22/2008	20:14:02	21:41:16
6/23/2008	13:26:12	21:28:43
6/24/2008	13:26:30	21:41:26
6/25/2008	13:33:27	21:26:42
6/26/2008	14:35:59	21:09:13
6/27/2008	13:48:34	20:41:33
6/28/2008	13:15:07	21:56:56
6/29/2008	13:16:48	18:58:44
6/30/2008	13:42:38	14:37:19
7/1/2008	14:32:51	21:33:09
7/2/2008	13:42:08	19:45:36
7/3/2008	14:02:23	21:22:19
7/4/2008	14:59:53	18:06:06
7/5/2008	14:23:33	21:42:58
7/7/2008	13:44:30	18:24:17
7/8/2008	14:19:58	21:29:21
7/9/2008	14:04:16	17:23:59
7/10/2008	13:33:43	21:30:03
7/11/2008	14:11:47	21:20:06
7/12/2008	13:57:33	21:41:26
7/13/2008	20:08:51	21:24:29
7/15/2008	13:47:54	21:33:54
7/16/2008	13:50:55	19:30:03
7/17/2008	13:24:31	21:32:23
7/18/2008	13:49:15	21:47:09
7/19/2008	13:22:42	21:24:37
7/20/2008	13:15:49	21:40:23
7/21/2008	14:01:34	21:45:21
7/22/2008	13:59:54	15:14:19
7/23/2008	13:43:48	21:42:36
7/24/2008	18:39:25	20:28:43
7/25/2008	14:04:25	19:32:50
7/30/2008	14:21:57	15:02:07
7/31/2008	13:47:28	16:34:12
8/3/2008	19:46:50	20:24:58
8/5/2008	14:09:51	21:58:04
8/6/2008	13:21:42	21:17:37
8/7/2008	15:22:28	18:53:28
8/20/2008	13:25:14	19:39:36
1/31/2009	16:37:03	19:18:42

**FINAL TIDE ZONING
H11836
OPR-J977-DE-08**

Zone	Time Corrector (Mins)	Range Ratio	Reference Station
CGM243	-24	x1.00	8760417
CGM244	-18	x1.00	8760417
CGM245	-12	x1.00	8760417
CGM246	-6	x1.00	8760417
CGM247	0	x1.00	8760417
CGM248	6	x1.00	8760417
CGM249	12	x1.00	8760417
CGM250	12	x1.00	8760417
CGM250A	6	x0.87	8760417
CGM252A	18	x0.87	8760417
CGM680	-36	x1.00	8760417



FINAL TIDE ZONING

H11836
OPR-J977-DE-08
Gulf of Mexico
David Evans and Associates, Inc.
Chart 11361

Jason Creech

From: Jon Dasler
Sent: Monday, April 06, 2009 1:14 PM
To: Jason Creech; Shyla Allen
Subject: FW: FW: FW: Devon monthly mean revisions
Attachments: Jeffrey_Ferguson.vcf

FYI

From: Jeffrey Ferguson [mailto:Jeffrey.Ferguson@noaa.gov]
Sent: Monday, April 06, 2009 1:10 PM
To: Jon Dasler
Subject: Re: FW: FW: Devon monthly mean revisions

Approved.

Jon Dasler wrote:

Jeff,

Related to our discussion today, if we apply the adjustments listed below the depths will increase. Holding the original water levels from Devon will be conservative (shoaler by 9 cm). That said, do we have your approval to submit with the old Pilot Station datum and 4 month datum computation? This would be discussed in the DR.

Jon

Jon Dasler, P.E., P.L.S.
Vice President, Director of Marine Services

David Evans and Associates, Inc. | Marine Services Division
2801 SE Columbia Way, Ste. 130 | Vancouver, WA 98661
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www.deainc.com



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Please consider the environment before printing this email.

From: Jon Dasler
Sent: Wednesday, April 01, 2009 10:29 AM
To: Jeffrey Ferguson
Subject: FW: FW: FW: Devon monthly mean revisions

Jeff,

Not to drag this on but wanted you to be aware that the final adjustment at Devon is 9.6cm. The 9 month observation (end of TerraSond survey) vs. 4 month observation (end of DEA survey) turned out to be slightly more than we anticipated. However, it is unclear which more accurately represents a full year as the added 5 months was during heavier weather. JOA stated that the tides are so flat here that weather plays a significant roll in datum computations. That said, the final adjustments tally up as follows:

New Pilot Station Datum adjustment +5.3cm (may not be exactly a 1:1 relationship)
3 revised monthly mean values adjustment - 0.5cm
9 month datum adjustment +4.8cm (inferred)

In the end it is a 9.6cm adjustment if all of these are applied. Currently the two sheets we submitted are based on the Old Pilot Station datum and our final two sheets are ready for delivery without any of the adjustments at Devon listed above. Let us know how you would like us to proceed so we can complete this survey.

On another note, any idea when we will be able to start on the Chesapeake? We are hoping to start in early May.

Jon

Jon Dasler, P.E., P.L.S.
Vice President, Director of Marine Services

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[Please consider the environment before printing this email.](#)

From: Mike Zieserl [<mailto:mzieserl@gmail.com>]
Sent: Friday, March 27, 2009 9:53 PM

To: Jon Dasler
Cc: Jason Creech; 'John Oswald (JOA)'
Subject: Re: FW: FW: Devon monthly mean revisions

I don't know if the pilot station datum changes the devon datum in a 1:1 way, but generally you're right.

Mike Z

Jon Dasler wrote:

Thanks Mike. Jason was seeing a 9cm difference and this documents that it is a 9.8 cm difference. The 4 to 9 month datum must have been more than the 1cm quoted by Erik. It must be 4.8 cm.

New Pilot Station Datum adjustment +5.3cm
 3 revised monthly mean values adjustment - 0.5cm
 9 month datum adjustment +4.8cm

If you apply all three you get a +9.6cm adjustment.

Does this look right?

From: Mike Zieserl [<mailto:mzieserl@gmail.com>]
Sent: Friday, March 27, 2009 3:38 PM
To: Jon Dasler
Cc: Jason Creech; John Oswald
Subject: Re: FW: FW: Devon monthly mean revisions

Jon,

Summary of the Devon "datum" movement, relative to local station datum.

- 1) Original Devon Energy MLLW (4 months, old Pilot Station Datum): **11.925m**
- 2) Revised Devon Energy MLLW (4 months, old Pilot Station Datum, 3 revised monthly mean values from COOPS): **11.920m**
- 3) Devon Energy MLLW for Terrasond (9 months, new Pilot Station Datum, 3 revised monthly mean values from COOPS): **12.021m**

The range of the tide did not change much, 4 months vs 9 months, but mean sea level did. Water levels at Devon Sept - Dec were higher relative to Pilot Station. This pushed Mean Tide Level up in the 9 month datum, which in turn brings MLLW up too. MLLW is relatively higher in the 9 month datum vs the 4 month datum. Original MLLW tides would seem slightly closer to the 9 month new datum than a "revised" 4 month datum.

It's easy to get turned around on this stuff, but I think that using the original MLLW tides we sent you, your charted depths are shoaler than if you used the 9 month datum.

For example, a station datum water level height of 12.000m:

Original MLLW height = $12.000 - 11.925 = 0.075\text{m}$
New datum MLLW height = $12.000 - 12.021 = -0.021\text{m}$

Sounding depth of 3.000m:
Original MLLW depth = $3.000 - 0.075 = 2.925\text{m}$
New MLLW depth = $3.000 + 0.021 = 3.021\text{m}$

Mike

Jon Dasler wrote:

Do we know if this is in addition to the 5.3cm datum adjustment for a 5.8 cm total difference or does this move the other way for a 4.8cm total adjustment?

-----Original Message-----

From: Jeffrey Ferguson [<mailto:Jeffrey.Ferguson@noaa.gov>]
Sent: Friday, March 27, 2009 1:26 PM
To: Jon Dasler
Subject: Re: FW: Devon monthly mean revisions

Is this a 5mm on top of the 5mm, so we're really talking 10mm final depth error?...

Or is the 2nd a random error that may overlap the first?

Jeff

Jon Dasler wrote:

Jeff,

I know you commented about the 5cm datum revision issue on this project.

This is a slightly different issue relation to datum computation JOA on the order of 5mm. Currently our data is processed and rea

delivery based on JOA's original computation. We would like to h your thoughts on the need to reapply water levels for this 5mm

adjustment.

Our suggestion would be to have JOA resubmit to CO-OPS but not a

the 5mm adjustment to the data. Does HSD concur with this assess

Jon

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-----Original Message-----

From: Mike Zieserl [<mailto:mike@joasurveys.com>]
Sent: Thursday, March 26, 2009 12:43 PM
To: Jason Creech
Cc: Jon Dasler
Subject: Devon monthly mean revisions

Jason,

I used the COOPS monthly mean revisions to recompute the datum f
Devon. I kept everything else the same (only 4 months of data,
the old Pilot Station Datum and monthly means).

The difference between what we submitted and a revised datum:

MLLW, 5mm
MHW, 3mm

COOPS has told us they use a 9mm tolerance when evaluating our
computations, so I hope we're in the clear on this. I asked Man
Samant if he could confirm this for me and he left me a message

"it's complicated, we'll have to talk to OCS" which sounds bad,

maybe OCS can talk some sense to COOPS.

I'm still traveling, will be back in the office Friday.

Mike Z

--

Mike Zieserl
John Oswald & Associates, LLC
2000 E. Dowling Rd., Suite 10
Anchorage, AK 99507
(907) 561-0136 office
(907) 230-5789 cell
mike@joasurveys.com

Jason Creech

From: Jeffrey Ferguson [Jeffrey.Ferguson@noaa.gov]
Sent: Wednesday, March 18, 2009 12:41 PM
To: Jon Dasler
Cc: Jason Creech
Subject: Re: FW: [Fwd: [Fwd: Approval of DEA submitted Devon data]]
Attachments: Jeffrey_Ferguson.vcf

Approved.

Jon Dasler wrote:

Jeff,

Do we have your approval to hold the shorter series datum at Devon? John Oswald claims it is less than 1cm difference and all of our data is currently reduced to this datum.

Jon

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From: Manoj Samant [<mailto:Manoj.Samant@noaa.gov>]
Sent: Wednesday, March 18, 2009 12:27 PM
To: Jeffrey Ferguson; Jon Dasler
Subject: [Fwd: [Fwd: Approval of DEA submitted Devon data]]

Hi Jon:

The approval has to come from OCS and on behalf of CO-OPS I can recommend what you are requesting.

Hi Jeff:

Jon Dassler of DEA has brought to CO-OPS' attention that DEA has submitted required deliverables to OCS based upon the verified data available for the control station at 8760922 Pilot Station east, S. W. Pass, LA. When the data was collected at a subordinate station installed by DEA between the time frame 7/1/2007 and 10/10/2007, the accepted MLLW above the station datum at the control station was 9.124 m based upon a shorter series. CO-OPS updated the datums based upon the longer series from September 2004 to August 2008 on February 9, 2009 for the NWLON control station at 8760922 Pilot Station and the new accepted MLLW is now 9.177 m above the station datum.

Since DEA has processed the data for the subordinate station based upon the verified data for the NWLON control station available from CO-OPS' website prior to February 9, 2009, CO-OPS recommends approval of Jon's request as listed below. DEA has already submitted the deliverables to OCS based upon the CO-OPS' verified data prior to February 9, 2009, and hence DEA does not have to re-process the data because CO-OPS updated the datums after February 9, 2009. Please inform DEA OCS decision. Thanks.

Manoj

----- Original Message -----

Subject: Approval of DEA submitted Devon data

Date: Thu, 12 Mar 2009 14:59:06 -0700

From: Jon Dasler <Jld@deainc.com>

To: Manoj Samant <Manoj.Samant@noaa.gov>

CC: Jason Creech <Jasc@deainc.com>

Manoj

Based on our discussion today, can you approve the Devon site based on the datums in 08 (prior to the CO-OPS Feb adjustment)? I spoke with Erik and he thought the long term observation that ran through the Terra project was less than a cm difference. I know this was discussed at the start of our Task Order that we would close our observations at the end of our work but the station would keep running through TerraSond's work. We were to use the closing of our work for datum computations to move our deliverables forward. Do you need anything further from us to approve this portion of the Devon observations?

Jon

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----- Original Message -----

Subject:Re: Pilots Station East, SW Pass (8760922) Inquiry
Date:Mon, 09 Mar 2009 18:27:17 -0400
From:Manoj Samant <Manoj.Samant@noaa.gov>
To:Jason Creech <Jasc@deainc.com>
CC:Jon Dasler <Jld@deainc.com>
References:<9504046871A48E4583F558EB6ECA9023052FBDFD@crpex1.deainc.com>

Hi Jason:

I know where the 5 cm difference is coming from. When the data was collected between the time frame 7/1/2007 and 10/10/2007 the accepted MLLW above the station datum was 9.124 m based upon a shorter series. CO-OPS updated the datums based upon the longer series from September 2004 to August 2008 and the new accepted MLLW is now 9.177 m above the station datum. Hence, you are seeing the 5 cm difference, now for the 2007 data when put on the MLLW.

Unless you have submitted the data to OCS, I recommend that you use the new accepted MLLW value 9.177 m i.e. use the 5.3 cm adjustment that is correct because of the datum recomputation and submit the required products to OCS based upon this new updated datum. At least we have solved the mystery now. Please let me know if you need any additional information.

Manoj

Jason Creech wrote:

Manoj

I've attached the verified file that we compiled from Verified data back in the fall of 2007.

We see a consistent 5.3 cm shift between this file and data that is currently available for download (our file has WL greater than the website). We also see the same relationship between our

preliminary file and the preliminary data that is currently available for download.

In addition when data are missing from the CO-OPS preliminary download and filled in the CO-OPS verified download this also occurs in the files that were downloaded in fall 2007 at the exact same records. It appears that there has just been a 5.3 cm adjustment applied to 8760922 since data were originally downloaded in 2007.

Let me know if you need anything else.

Thanks,

Jason

APPENDIX V
SUPPLEMENTAL RECORDS AND CORRESPONDENCE

M/V Bella Marie

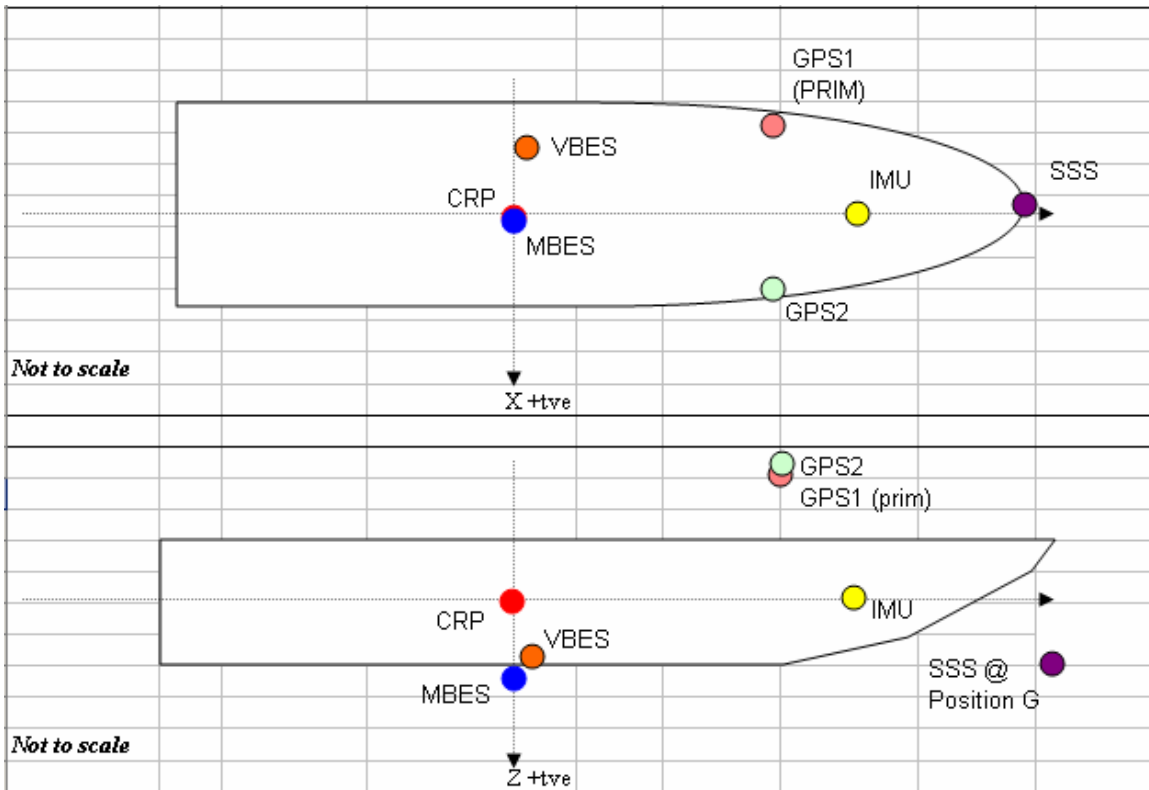


Figure 1 - M/V Bella Marie vessel survey showing the relative positions of the installed survey equipment.

Table 1 – M/V Bella Marie offset measurements determined during the initial vessel survey. The CARIS convention of + down (z), + starboard (x) and + forward (y) was used for all measurements.

Equipment	Manufacturer / Model	Offset from CRP (m) based on CARIS Convention			
		X	Y	Z	
MRU	Seatex MRU-5	-0.089	+2.479	-0.543	
CRP	N/A	±0.000	±0.000	±0.000	
VBES Transducer	Odom Hydrotrac	-1.323	0.363	0.686	
MB Transducer	Reson SeaBat 8101				
	Head Tilt Angle 0°	0.000	-0.266	1.068	
	Head Tilt Angle 40°	+0.200	±0.000	+1.154	
GPS1 (Primary)	Seapath 200	-1.417	+1.804	-5.319	
GPS2 (Secondary)	Trimble DSM-212	+1.448	+1.792	-5.311	
SSS Transducer	EdgeTech 4200 FS			Pos Z	
Positions (Pos) indicate the mark on the Extendable pole mount which was used during the survey. Refer to Acquisition Logs for correct pole mount position.		-0.018	6.599	D	0.349
				E	0.660
				F	1.051
				G	1.361

Shyla Allen

From: william holton [wholton@researchplanning.com]
Sent: Tuesday, June 03, 2008 7:06 AM
To: Nir Barnea
Subject: RE: [Fwd: Re: FW: Survey Area Coverage]

Nir,

I think this approach will be fine. Since the survey footprints will be posted for both the 100% and 200% coverage (Item 1) that will give me an idea of when to potentially expect the vetted contacts. It looks to me like the identifiers used for each contact will be the same for both the side-scan and multi-beam investigations providing an easy method for updating the least depths. If the identifiers change it will require a manual process.

Bill

-----Original Message-----

From: Nir Barnea [mailto:Nir.Barnea@noaa.gov]
Sent: Tuesday, June 03, 2008 9:18 AM
To: william holton
Subject: [Fwd: Re: FW: Survey Area Coverage]

Bill, check the message below, an exchange between Jon Dasler (David Evans) and me, and let me know:

- Is the approach OK from your perspective?
- Item #5: Can you update target depth on your end if they can't update in on the SharePoint? I assume that this would require a manual update and require time.
- Any other suggestions?

Thanks --- Nir

From: Crescent Moegling [Crescent.Moegling@noaa.gov]
Sent: Friday, June 27, 2008 1:41 PM
To: Jon Dasler; Jason Creech
Subject: [Fwd: Smoothing data for Contract Hydro S-J977-KR-DEA-2008 Plaquemines Southeast, LA] FYI...

----- Original Message -----

Subject: Smoothing data for Contract Hydro S-J977-KR-DEA-2008 Plaquemines Southeast, LA
Date: Fri, 27 Jun 2008 13:46:47 -0400
From: Gerald Hovis <Gerald.Hovis@noaa.gov>
Organization: National Ocean Service
To: Crescent Moegling <Crescent.Moegling@noaa.gov>
CC: _NOS.CO-OPS.HTP <NOS.COOPS.HPT@noaa.gov>, Peter Stone <Peter.Stone@noaa.gov>, Manoj Samant <Manoj.Samant@noaa.gov>, Stephen Gill <Stephen.Gill@noaa.gov>

Crescent,

As per our phone discussion I spoke with Peter Stone so feel free to forward this to DEA for their records.

Observations collected at CO-OPS water level stations undergo a series of mechanical, mathematical, and analytical filters before being disseminated for use by the public. CO-OPS has evaluated the data being collected at Pilot Station East, LA (8760922) and determined that the "splashy" nature of the data is an accurate representation of the location. It is not the policy of CO-OPS to "smooth" data beyond the removal of obviously erroneous observations. However, CO-OPS also understands that the "splashy" observations at this location may be a result of ship traffic in the narrow channel where the station is located and may not accurately represent the conditions of several offshore zones in which DEA is collecting data. Under these circumstances CO-OPS supports the smoothing of data by contractor DEA for the sole purpose of survey S-J977-KR-DEA-2008 Plaquemines Southeast, LA. CO-OPS does request that DEA provide detailed documentation of the smoothing process to OCS and / or CO-OPS for NOAA records. The verified data collected, stored and disseminated by CO-OPS will not be altered.

Jerry

--

Jerry Hovis
 Tidal Datums & Hydrographic Support Team
 Center for Operational Oceanographic Products & Services
 Products and Services Division
 National Ocean Service
 National Oceanographic Atmospheric Administration
<http://www.tidesandcurrents.noaa.gov/>

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 cell: (240)-997-2651
 Fax: (301) 713-4437

--
Crescent Moegling
NOAA Hydrographic Surveys Division
Branch Chief - Data Acquisition Control
301.713.2700 x111

Shyla Allen

From: Michael Hill
Sent: Sunday, June 08, 2008 3:23 PM
To: Jon Dasler
Cc: Jason Creech
Subject: Pass-a-Loutre Trackline for Tim Osborn
Attachments: Pass-a-Loutre_Trackline.pdf

Jon,

Tim asked today how we were doing with the Pass-a-Loutre SB.
I told him we had data for most of it but not all.

He asked for something he could show to the State folks who have been asking him about this.

I asked if a trackline would be okay .. he said yes.

Is this okay to send to Tim?
Suggestions?

Thanks,

MikeH



Jon Dasler

To: Jason Creech; John Staly; Michael Hill
Cc: Donald P. Fusilli
Subject: FW: [Fwd: Re: Start of NOAA Contract Surveying Operations, South Plaquemines Parish]
Attachments: Pass a Loutre.jpg

I just talked with Tim about this issue that Greg from Louisiana Coastal Management Division has raised about silting in of Pass a loutre. We have been asked to collect some single beam data during our transits through the pass. Tim will send a map of area of concern. I have been told that boats no longer transit out North or South pass as it is silted in and too shallow. We had to take Lonesome Bayou pass to the north to get offshore (see green trackline in the image).

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 Main: (360) 314-3200 FAX (360) 314-3250
 Direct: (360) 314-3202 Mobile: (503) 799-0168
 e-mail: jld@deainc.com

From: Tim.Osborn [mailto:Tim.Osborn@noaa.gov]
Sent: Wednesday, April 02, 2008 9:14 AM
To: Jon Dasler
Subject: [Fwd: Re: Start of NOAA Contract Surveying Operations, South Plaquemines Parish]

----- Original Message -----

Subject: Re: Start of NOAA Contract Surveying Operations, South Plaquemines Parish
Date: Tue, 01 Apr 2008 08:47:24 -0400
From: Crescent Moegling <Crescent.Moegling@noaa.gov>
Organization: National Oceanic and Atmospheric Administration
To: Tim.Osborn@noaa.gov
CC: Ed Martin <Ed.Martin@noaa.gov>, Howard Danley <Howard.Danley@noaa.gov>, Larry Krepp <Lawrence.T.Krepp@noaa.gov>, Patrick Fink <Patrick.Fink@noaa.gov>
References: <47F12602.5060000@noaa.gov> <64FAC11022DA5842BB89D5D26B9F336E047A8B3D67@MAILMBX02.MAIL.LA.GOV> <1287269501-1207053502-cardhu_decombobulator_blackberry.rim.net-2029289742-@bxel41.bisx.prod.on.blackberry>

Tim,

This shouldn't be too difficult for DEA to do as I believe they'll be transiting this channel to and from their working grounds. Is single beam sufficient?

Crescent

tim.osborn wrote:
 > Greg
 >
 > I will call this morning and talk this over with you. This is a significant issue
 >
 > /r
 >
 > Tim
 > -----Original Message-----
 > From: Gregory DuCote <Gregory.DuCote@LA.GOV>
 >
 > Date: Tue, 01 Apr 2008 06:46:00
 > To: "Tim.Osborn" <Tim.Osborn@noaa.gov>
 > Cc: Bren Haase <Bren.Haase@LA.GOV>, David Fruge <David.Fruge@LA.GOV>, Jim Rives <Jim.Rives@LA.GOV>
 > Subject: RE: Start of NOAA Contract Surveying Operations,
 > South Plaquemines Parish
 >
 >
 > Tim
 >
 > We are in discussions with the NOD/COE about Pass-a-loutre (PAL) and the hopper dredge disposal site at the head of PAL and whether or not
 > ve refuges and management areas.
 >
 >
 > Gregory J. DuCote
 > Coastal Management Division
 > P.O. Box 44487
 > Baton Rouge, LA 70804-4487
 > P - 225.342.5052
 > F - 225.242.3458
 >
 > -----Original Message-----
 > From: Tim.Osborn [mailto:Tim.Osborn@noaa.gov]
 > Sent: Monday, March 31, 2008 12:57 PM
 > To: Mike Capt Lorino Jr Mississippi River Bar Pilots
 > Cc: Michael Hill; Jon Dasler; Gaude, III, Albert P.
 > Subject: Start of NOAA Contract Surveying Operations, South Plaquemines Parish
 >
 > Captain Lorino
 >
 > Thank you for the coordination in the last few weeks with the Bar Pilots and NOAA.
 >
 > NOAA's contract survey team is arriving in Louisiana this week to make preparations for the start of the surveys in south Plaquemines Pari
 >
 > The NOAA survey project area is depicted in the attached graphic. A Local Notice to Mariners is also attached for your information and us

4/2/2008

>
> Again, thank you and for the hospitality and collaboration with the Pilots on this project
>
> /r
>
> Tim Osborn
> NOAA
>
>

--
Crescent Moegling
NOAA Hydrographic Surveys Division
Branch Chief - Data Acquisition Control
301.713.2700 x111

Recent conversation with Gene DTONS and S-57.txt

From: Jason Creech

Sent: Wednesday, July 16, 2008 9:26 AM

To: Jon Dasler

Cc: Michael Christy; Michael Hill; John Staly; Verena Kellner; Shyla Allen; Amanda Bittinger; Erin Campbell

Subject: Recent conversation with Gene

Follow Up Flag: Follow up

Flag Status: Red

I just had another very informative conversation with Gene.

I called to discuss some recent guidance from him regarding determination of Dtons near charted features and S-57 file generalization.

In a nut shell he asked us not to submit Dtons for items within a 3mm radius (at largest chart scale) of charted features. For instance if there is a submerged pile within the 3mm radius (at 1:80k = 240 meters) then we don't need to worry about submitting a Dton. This pile should be included in the S-57 feature file as long as it meets the next rule....

We are to use 3mm at survey scale (1:10k) which is 30m for determination of items to include in the feature file. If the submerged pile discussed above is less than 30 meters from a charted platform then we would not submit but would make a note about the pile in the S-57 INFORM field of the platform. This same rule is used for all new items as well. We are to start with the most significant item (significant in this case means tallest baring feature) and all items within the 30m radius are not to be depicted in the feature file, but they would be noted in the INFORM field.

Jason

Shyla Allen

From: Jason Creech
Sent: Tuesday, October 28, 2008 5:04 PM
To: Michael Christy; Shyla Allen
Subject: FW: GOM baring dton questions
Follow Up Flag: Follow up
Flag Status: Red
Attachments: Card for Castle.E.Parker

FYI

This is the email from Gene regarding wellheads vs platforms for your reference while preparing the objects for and conversion to S-57.

From: Castle.E.Parker [mailto:Castle.E.Parker@noaa.gov]
Sent: Wednesday, May 28, 2008 5:08 AM
To: Jason Creech
Subject: Re: GOM baring dton questions

Jason,

I don't think the definitions accurately define what you see in the real world. I have seen well heads above MLLW and not always submerged. I determine the difference between plat and well head is that the **platform should have a "specially designed working surface..."** The **well consists of valves and piping without a working surface.**

Let's call a well head a well if it has minimum structure (no vertical or horizontal support bracing or support structure) surrounding a valve or series of valves. If the well appears damaged, then call it an Obstrn.

If the structure has vertical or horizontal frame around a well or series of valves and piping, then call it a platform no matter what the size or dimension of the structure.

Referencing the word doc you sent with images, the bottom image on page two is listed as charted platform.

This object appears to be a combination of plat and well. By definition of plat is does not have a specially designed working surface, unless it is below the water surface. As it exists in the image, I would call it a well, recommend to delete the charted plat, and add a well at the surveyed location.

The top image on page 3 would be well, as there is no working surface.

I agree with the definition for well, and this is usually where the well and valves are submerged covered by lots of water. However, the water depth that you are working is shallow and the exposed portion of the well would normally be submerged in deeper water. Thus, a well is a well, no matter what the water depth. The well would be elevated above the sea floor the same distance or height no matter what the water depth is. In shallow near shore areas, the well just happens to be elevated above the water surface. Just because the well is above the water surface doesn't change the well to a platform.

The S57 objects and attributes give us issue a lot of the times. We have to use them to match or correlate to the raster chart as well. Since, AHB and HSD H-cell is not truly an ENC, we can deviate if clearly explained or documented.

The bottom line, is that you call it what you think it should be. AHB would really like to have photos for the features which are not definitive, such that we can make a decision based upon your recommendation and the photo.

Is this OK with you and am I clear with the differences and AHB's preference?

Jason Creech wrote:

Gene

Based on your documentation it looks like wellheads are always submerged and we are seeing platforms some of which may be ruined, dismantled or just oddities that don't fit nicely into the rule book. If this is the case, what should we do about the items like valves which are baring and just above the water surface? They are charted as platforms so one would say they are charted correctly, but could also be considered hazardous to surface navigation. If we see evidence of broken piles or debris in the water we could submit as ruined, in other cases I'm not exactly sure.

This is a tricky situation. Your guidance is appreciated.

Thanks,
Jason

-----Original Message-----

From: Castle.E.Parker [<mailto:Castle.E.Parker@noaa.gov>]

Sent: Tuesday, May 27, 2008 6:33 AM

To: Jason Creech

Subject: Re: GOM baring dton questions

> Good Morning Jason,

I'm finally getting back to this issue of Plats and Well heads. I have placed three documents at the DEA FTP site. Reference the path below:
ftp://ftp.dea-inc.com/Portland/Marine%20Services/NOAA/4JasonCreech_FromNOAA-AHB/

1. The documents include NOAA Encoding-Part_1-3_AHB.pdf
2. H-Cell Specifications_3.0.pdf
3. Well-Plat Definitions.doc

These documents are for reference only and should supplement the NOS Hydrographic Surveys Specifications and Deliverables. The definitions

are quoted from FPM and Nautical Chart Manual. Just use your best judgment when deciding what to call the feature. The NOAA Encoding Part 1-3 is really for the final charting disposition of features. AHB is using this document for H-cells. The document has not been approved by OCS so it remains as a preliminary document.

I hope these documents can assist you. If you have any remaining questions or new issues, you know where I'll be.

Have a great week!
Gene

> Jason Creech wrote:

>

> Hello Gene

>

>

>

> I have attached a word document with several examples of items that we are seeing down in LA and have questions about submitting as Dtons and S-57 attribution. Once you have reviewed the file would you mind calling me to discuss? I have several questions and the conversation may go a little faster over the phone.

>

>

>

> Thanks,

>

> Jason

>

>

>

> Jason Creech

>

> Lead Hydrographer

>

> David Evans and Associates, Inc.

>

> (804) 516-7829

>

>

>

>

> Name:
H11833_Possible_DTONS_forAHB.doc

> Type: WINWORD File

(application/msword)

> H11833_Possible_DTONS_forAHB.doc Encoding: base64

>

> Description:
H11833_Possible_DTONS_forAHB.doc

>

Download Status: Not downloaded

with message

Jason Creech

From: Castle.E.Parker [Castle.E.Parker@noaa.gov]
Sent: Wednesday, January 21, 2009 3:59 AM
To: Jason Creech
Cc: Crescent Moegling; Shep.Smith; Matthew Wilson
Subject: OPR-J977-DE-08 Deviation from SOW

Follow Up Flag: Follow up
Flag Status: Completed

Attachments: Card for Castle.E.Parker



Castle.E.Parker.vcf
(546 B)

Good day Jason,

Based upon our recent discussions during your visit to Atlantic Hydrographic Branch (AHB), this email serves as AHB's notification and request calling for a deviation from the OPR-J977-DE-08 Statement of Work (SOW). As detailed in the SOW, referencing Section 6.2.3 S-57 Feature File, the requirement is to include single beam soundings at survey scale within the submitted S-57 format deliverable. AHB requests that DEA's submitted feature file not include the VBES soundings. This increases the file size and serves no intended purpose during AHB's processing of the surveys. Depth data reviewed and verified will be sourced from the bathymetric grid and will not source or verify the depth data represented as survey scale soundings.

AHB would also request that DEA provide information concerning offshore platforms located during the surveys as an additional feature file that contains only the platforms. Based upon the number of platforms located within the survey limits, AHB requests that these features be included in a separate S-57 format file.

AHB respectfully requests these deviations from the survey deliverable specifications. Please respond as necessary.

Regards,
Gene Parker

Michael Christy

From: Jason Creech
Sent: Tuesday, December 16, 2008 8:21 AM
To: Jon Dasler; Shyla Allen; Michael Christy
Subject: FW: H11834 S-57 Feature File Deliverable to AHB

Follow Up Flag: Follow up
Flag Status: Red

-----Original Message-----

From: Castle.E.Parker [mailto:Castle.E.Parker@noaa.gov]
Sent: Tuesday, December 16, 2008 8:18 AM
To: Jason Creech
Cc: Crescent Moegling; Shep.Smith; Matthew Wilson
Subject: H11834 S-57 Feature File Deliverable to AHB

Good Day Jason,

This email serves as written documentation concerning an issue that was discussed during our telephone conversation on Tuesday 12/16/2008.

Bearing in mind the number of platforms and well heads contained within H11834 and AHB's H-cell specifications, AHB requests that all offshore platforms (OFSPLF) and well heads be separated from the submitted S57 feature file. It is requested that DEA submit a separate S57 format file that contains only offshore platforms and well heads.

Our previous discussions related to the generalization of features (3mm@ chart scale) that included well heads, platforms, and associated baring piles located in close proximity to each other should only be used when evaluating and determining the Danger to Navigation status and selections.

It would be in AHB's best interest not to generalize the survey's final feature selections. This request would eliminate DEA's additional evaluation time and effort in determining which features would be represented in the submitted S57 feature file. The added evaluation time by DEA would delay the survey submission to AHB and add time onto the total "ping to chart" time period. Submitting all the features with no generalization would allow AHB to view these features and make compilation decisions that would be appropriate for the chart scale product.

If any portion of these agreements are not according to our discussions, please respond. If not, proceed with generating the AHB deliverables according to NOS HSSD and the deviations mentioned in this email.

Regard,
Gene Parker

Shyla Allen

From: Shyla Allen
Sent: Thursday, March 26, 2009 4:42 PM
To: Daniel Seamount; James DePasquale
Cc: Brian Busey; Kathleen Mildon; Roland Poeckert; Jason Creech; Jon Dasler
Subject: RE: DEA MULTIBEAM INVESTIGATION REQUEST
Attachments: DEA_Bella_Marie_MB_Development_Compare_SNA.xls

Danny,

Thank you for your assistance. Unfortunately without a leadline or a bar-check I'm at a bit of a dead-end with regards to the vertical offset.

Please be aware that I changed the X measurement of the Navigation Antenna to the Transducer 1 in *DEA_Bella_Marie_MB_Development_TPE_Final.HVF* that you supplied yesterday to 1.617m (from 1.217m). I believe this corrects for the primary GPS antenna port of the RP and corresponds to what you wrote in the last email.

Thank you,
 Shyla

From: Daniel Seamount [mailto:dseamount@terra sond.com]
Sent: Wednesday, March 25, 2009 4:37 PM
To: Shyla Allen; James DePasquale
Cc: Brian Busey; Kathleen Mildon; Roland Poeckert
Subject: RE: DEA MULTIBEAM INVESTIGATION REQUEST

Shyla,

Please archive all the previous HVF that have been delivered to DEA from TerraSond. I have loaded the final HVF to the ftp site listed at the end of this message. I carefully reviewed your questions concerning the CARIS HVF and have corrected the information in the vessel file where needed.

The following specifically address you questions:

First, I am curious if the draft value in the HVF is in respect to the phase center of the 8101?

Waterline values are referenced to the CRP.

As for draft, Per HIPS Manual:

“All draft values entered should be relative to the same reference, but what that reference is, is not important. The first Speed-Draft pair must correspond to a state where no draft correction is necessary. The delta draft values, relative to the initial draft, are computed and used to correct observed soundings.”

can you please send me a bar or leadline check done after the head was tilted?

We did not conduct a bar or leadline check after the head was tilted. I have uploaded our final tides and zone file to help identify any possible tide issues.

In the Seapath Configuration Report the From CG to antenna #1: is listed as X: 1.804 Y: -1.417 Z: -5.372 [m]. In the Bella Marie Sketch the are X and Y values are transposed and there is a slightly different Z value

- The Seapath Configuration Report X and Y (i.e. +Y is Starboard and +X is Forward) convention is opposite than that of CARIS (i.e. +Y is Forward and +X is Starboard).
- There were slightly erroneous values entered in the Seapath that do not match the survey values. These inaccurate values are corrected for in the HVF, however, after reviewing your notes and comments and examining my notes, I found that I was calculating the TPU offsets using the incorrect values that were entered into the Seapath. Using the survey values I have corrected these discrepancies in the HVF that has been uploaded to the Terra ftp site.

I know nothing about the Seapath coordinate system and there is a heading offset listed as -90 degree which might explain the discrepancy between the X and Y coordinate systems. Can you confirm this?

No, the discrepancy is due to different sign conventions between CARIS and the Seapath. Inside the Seapath the cables for primary and secondary antenna were inadvertently reversed. To account for this without applying offsets and switching the internal cables, the cables leading from the antennas to the Seapath were reversed. The Seapath uses the 90 degree offset account for the vessels forward motion (heading). Since we switched the external cables when the Seapath added the normal 90 degree offset the heading was in the wrong direction. To alleviate this issue we applied a negative 90 degrees creating the forward heading.

Also, the sketch shows the primary GPS1 antenna (PRIM) starboard of the RP, but lists a negative value (CARIS convention). Is this a typo?

The values in the vessel sketch are correct the sketch itself is incorrect. I have corrected the sketch to display the GPS1 (PRIM) on the port side.

Can you please confirm the TPE measurements, especially with regards to the Navigation Antenna to the Transducer 1.

As stated above, I have corrected for the inaccurate TPE offset values the correct values are as follows:

- o MRU_x to TX_x = 0.289
- o MRU_y to TX_y = -2.479
- o MRU_z to TX_z = 1.697
- o NAV_x to TX_x = 1.617
- o NAV_y to TX_y = -1.804
- o NAV_z to TX_z = 6.473

Thank you for identifying these discrepancies. I hope that I have answered your questions and that this has helped you. I have also uploaded the corrected sketch, HVF, and our final tide files and zdf file from JOA to the following location:

<ftp://akclientftp.terraond.com/>

Account name: DEA
Password: Jipl346%

They are in the folder named Final.

Please feel free to contact me if any other questions should arise.

Thank you,

-Danny

From: Shyla Allen [mailto:Sna@deainc.com]
Sent: Tuesday, March 24, 2009 10:51 AM
To: James DePasquale
Cc: Daniel Seamount; Brian Busey; Kathleen Mildon; Roland Poeckert
Subject: RE: DEA MULTIBEAM INVESTIGATION REQUEST

Jim,

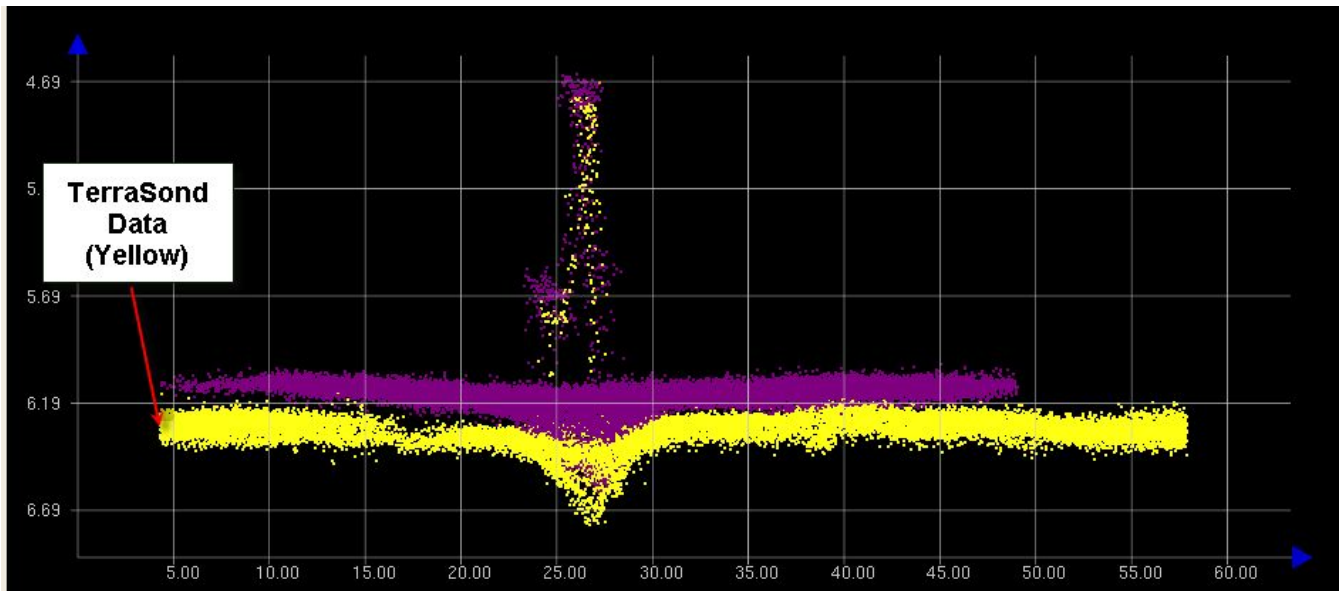
Thank you for your quick reply. I am trying to determine if a ~20cm offset that I am seeing between our two datasets is a result of tides or an error in the HVF. As a way of background, Terra acquired data over a wreck and an obstruction. DEA acquired singlebeam and multibeam from two different vessels on the obstruction so this area works as a small reference surface (see screen capture below). Terra has submitted an additional HVF that includes a new latency value, which resolved an observed horizontal offset. The new HVF also includes TPE values.

First, I am curious if the draft value in the HVF is in respect to the phase center of the 8101? If not, that could account for an approximately 12cm vertical offset (I think- this number is from the top of my head it might be more). Along those lines can you please send me a bar or leadline check done after the head was tilted. This would make it easier to justify the offset as tidal in the DR.

Second, I was reviewing the supporting files Terra submitted to DEA on 06 March and I have a couple of questions regarding the TPE values in the HVF. In the Seapath Configuration Report the From CG to antenna #1: is listed as X: 1.804 Y: -1.417 Z: -5.372 [m]. In the Bella Marie Sketch the X and Y values are transposed and there is a slightly different Z value. I know nothing about the Seapath coordinate system and there is a heading offset listed as -90 degree which might explain the discrepancy between the X and Y coordinate systems. Can you confirm this? Also, the sketch shows the primary GPS1 antenna (PRIM) starboard of the RP, but lists a negative value (CARIS convention). Is this a typo?

This possible typo would affect the measurement values in the TPE section of the HVF. In the attached excel file I have pasted the exported vessel report from CARIS of the original and subsequent Bella Maria Development HVF along with the vessel drawing. If you scroll down TPE section I, very quickly, calculated the measurements from the sketch. Obviously, this is not the full vessel survey and I don't have much faith in my numbers. Can you please confirm the TPE measurements, especially with regards to the Navigation Antenna to the Transducer 1.

Please feel free to contact me if you have any questions.
I appreciate your assistance with this,
S



Shyla Allen
Senior Hydrographer

David Evans and Associates, Inc. | Marine Services Division
2801 SE Columbia Way, Ste. 130 | Vancouver, WA 98661
Office: 360.314.3200 | Direct: 360.536.8427 | Fax: 360.314.3250

sna@deainc.com | www.deainc.com

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From: James DePasquale [mailto:jdepasquale@terra sond.com]
Sent: Monday, March 23, 2009 5:47 PM
To: Shyla Allen
Cc: Daniel Seamount; Brian Busey; Kathleen Mildon; Roland Poeckert
Subject: DEA MULTIBEAM INVESTIGATION REQUEST

Hi Shyla-

I understand that you are still having some trouble processing the GOM multibeam investigation we collected for you folks. If you would please e-mail me the details I will look into it immediately.

Thanks very much.

Jim DePasquale
Hydrographic Processing Manager

TerraSond Ltd

Terrestrial and Seafloor Mapping
1617 South Industrial Way Suite 3, Palmer, Alaska 99645
(907) 745-7215 Office (907) 745-7273 FAX
(907) 232-0537 Cell
www.terra sond.com

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This email was scanned and found virus free by GFI on 23/3/2009.

3/27/2009

Shyla Allen

Subject: FW: DEA Leadline Summary

From: Brian Busey [mailto:bbusey@terrasond.com]

Sent: Friday, April 03, 2009 9:18 AM

To: Jon Dasler

Cc: Thomas Newman; Robert Kohut; Raj Bhangu; James DePasquale; Kathleen Mildon; Roland Poeckert

Subject: FW: DEA Leadline Summary

Jon,

Sorry for not getting back to you sooner on this. I do not believe the documentation WRT the leadline check you requested is available. In addition, I am confident that we follow the same procedures for static draft as your team. I think I may have caused some confusion when I mentioned that the CRP is at the waterline. We take daily measure downs and the CRP is coincident with very little difference from the waterline.

Below you will find details of our static draft numbers as well as what few answers to your other inquiries we could come up with. I can have processing zip the leadline HyPack data for you but I would like to talk with you first. Please give me a call whenever you get a chance.

Static Draft:

- The Bella Marie does not present significant draft changes during long transits.
- Depth measurements are referenced to the water surface by daily measure downs and subsequent waterline entries in the Caris vessel configuration file.
- Static draft was measured at the beginning of each survey day and applied in the Caris vessel configuration file. On 2009-031 (the day we collected for DEA) we took an end of day static draft measurement to ensure no significant changes in draft took place throughout the day. These are in the acquisition logs previously submitted to DEA.

Static Draft excerpt from 2009-031 acquisition logs. We measure from port and starboard points labeled "Amid", average the two values and determine the distance from the CRP to the waterline. This value is entered in the Caris vessel configuration file.

Measure Downs				
	Punch Mark #	Value	Initials	Time (UTC)
Port	Amid	1.260	LRG	1230
Starboard	Amid	1.250	LRG	1230
Port	Amid	1.275	LRG	2158
Starboard	Amid	1.265	LRG	2158

"Amid" to CRP = 1.2802m (positive down)

Average measure down values:

Average P/S: 1.255 (positive down)

CRP to waterline entered in Caris vessel file: -0.03m (this value is negative when waterline is above the CRP)

Other Requests:

- Acquisition log for leadline check: **Probably not available. Left message for SM**
- Daily log for the bar check: **Probably not available. Left message for SM**
- Sound velocity cast at time of the bar check: **Probably not available. Left message for SM**
- Documentation of the stability of the draft: Average CRP to waterline over 78 survey days=-0.019, Standard deviation = -0.012.
- Bar check data of HyPack RAW and HSX files: Available

- *Measured draft of 8101*: Previously provided (referenced to CRP:1.154m)
- *Squat Settlement values*: Previously provided in Caris vessel configuration file
 - Entry 1) Draft: -0.039 Speed: 3.730
 - Entry 2) Draft: 0.026 Speed: 4.595
 - Entry 3) Draft: 0.027 Speed: 5.579
 - Entry 4) Draft: 0.036 Speed: 6.284
 - Entry 5) Draft: 0.047 Speed: 6.891
 - Entry 6) Draft: 0.107 Speed: 7.964
 - Entry 7) Draft: 0.124 Speed: 8.675

If you wish we can discuss the provision of the RTK data we used to calculate squat/settlement values for you to process and evaluate your own table of values. Our other concerning factor in this situation is the fact that two major hurricane systems moved through that target area between your survey dates and when we went back to do our survey.

I did try to call earlier this morning but I got your voicemail and I didn't leave a message. I really wish I had some better news to pass along.

Regards,

Brian Busey, CHS, ACSM
General Manager - [Alaska](#)

TerraSond Ltd

Terrestrial and Seafloor Mapping

1617 South Industrial Way Suite 3, Palmer, Alaska 99645
(907) 745-7215 Office (907) 745-7273 FAX (907) 123-4567 Cell
bbusey@terrafond.com www.terrafond.com

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This email was scanned and found virus free by GFI on 3/4/2009.

Jason Creech

From: Castle.E.Parker [Castle.E.Parker@noaa.gov]
Sent: Tuesday, October 07, 2008 11:24 AM
To: Jason Creech
Cc: Shep.Smith; Kelly Schill
Subject: Re: H11836_DTON_4 Submission
Attachments: Card for Castle.E.Parker

Good Day Jason,

AHB is not submitting H11836 DtoN #4 & #5 to MCD as the least depth is deeper than what's currently charted. I agree the chart is incorrect, but MCD will contest the Danger submission based upon charted depths and the least depth of the feature; the Danger aspect or comparison is how the feature compares to the existing chart; rather than whether the chart is wrong or not. It would be a cartographic faux pas if we applied a 33-ft wreck in 12-15ft of water. AHB will update the chart with this information during chart compilation; it just doesn't warrant Danger submission based upon the current edition of the chart.

AHB will process and submit DtoN #3 for H11836.

If you wish to discuss call me tomorrow.

Thanks for your attention to the details and your assistance with charting issues.

Gene

Jason Creech w dte

Danger not submitted to MCD

Gene,

Attached is a Danger to Navigation report for H11836_DTON_4. The attached file includes the danger report, standard chartlet, and supporting images. Please let me know if you have any questions or require any additional information on this danger to navigation.

Thanks,

Jason

Jason Creech

Lead Hydrographer

David Evans and Associates, Inc.

(804) 516-7829

DANGER TO NAVIGATION 6

Danger not submitted to MCD

Jason Creech

From: Jason Creech
Sent: Tuesday, October 07, 2008 8:51 AM
To: 'Castle.E.Parker@noaa.gov'
Cc: 'tim.osborn@noaa.gov'; 'Patrick Fink'; Jon Dasler
Subject: H11836_DTON_4 Submission
Attachments: H11836_DTON_4.doc

Gene,

Attached is a Danger to Navigation report for H11836_DTON_4. The attached file includes the danger report, standard chartlet, and supporting images. Please let me know if you have any questions or require any additional information on this danger to navigation.

Thanks,
Jason

Jason Creech
Lead Hydrographer
David Evans and Associates, Inc.
(804) 516-7829

Danger not submitted to MCD

REPORT OF DANGER TO NAVIGATION

H11836 #4

Hydrographic Survey Registry Number: H11836

Survey Title: State: LOUISIANA
General Locality: GULF OF MEXICO
Sublocality: BLIND BAY

Project Number: OPR-J977-DE-08
Field Unit: David Evans and Associates, Inc.
Survey Date: July 22, 2008

Depths are estimates based on side scan shadow lengths. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana. Horizontal Datum is North American Datum of 1983 (NAD83).

Charts affected:

- 11361 74th Edition /September 1, 2007, 1:80,000 scale
- 11366 11th Edition /January 1, 2008, 1:250,000 scale
- 11360 42nd Edition/February 1, 2007, 1:500,000 scale

The following items were found during hydrographic survey operations.

DANGER TO NAVIGATION #4 (depths adjusted to MLLW)

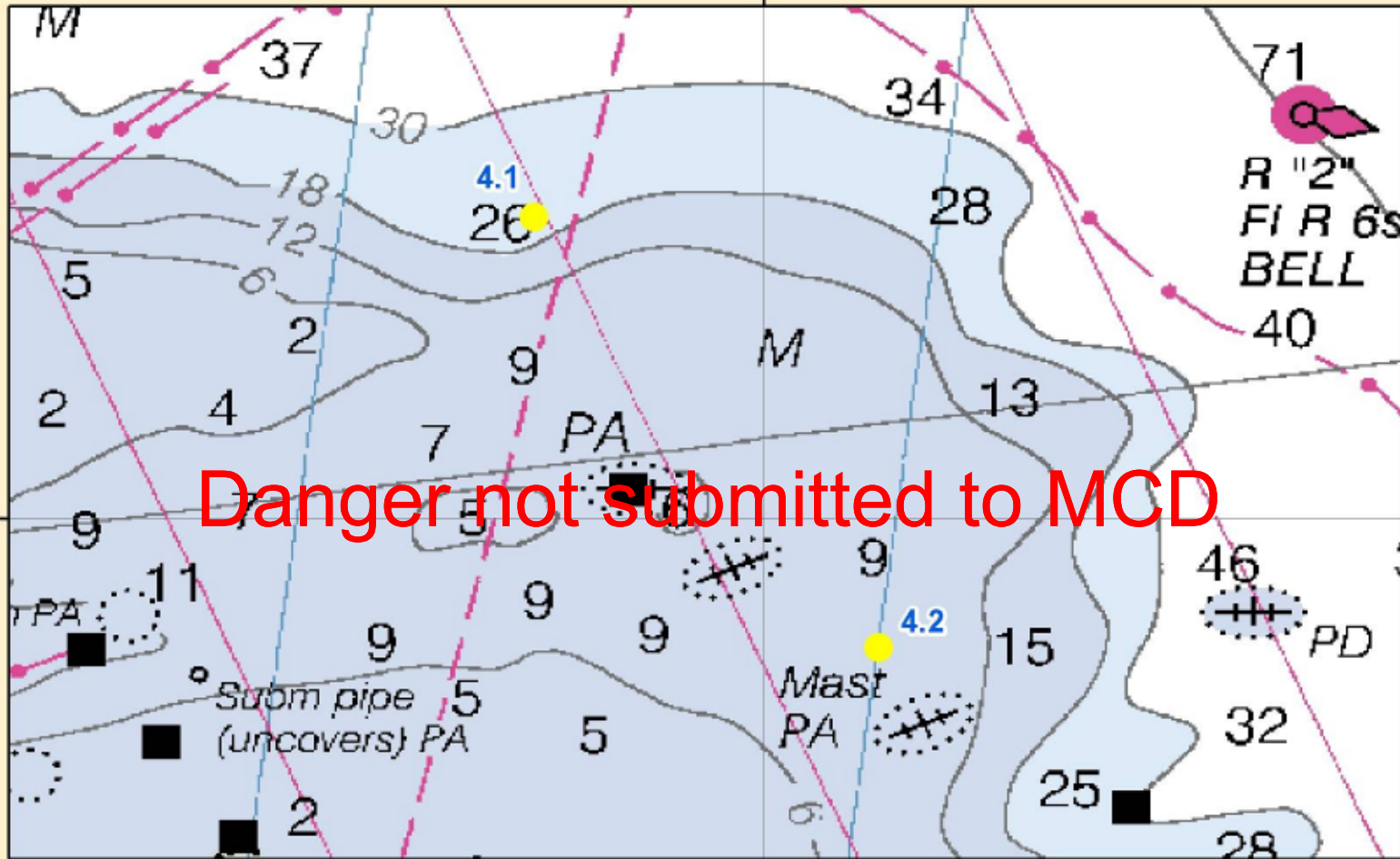
FEATURE	DEPTH (M)	DEPTH (FT)	LATITUDE (N)	LONGITUDE (W)
4.1 - OBSTRN	13.33	43.7	29/14/04.6464N	88/58/56.4276W
4.2 - OBSTRN	10.06	33.0	29/13/14.9844N	88/58/16.7088W

The following Dangers to Navigation represent elevated pipelines on sheet H11836. Feature 4.1 is a section of elevated pipeline that stands approximately 0.6 meters (1.9 feet) off of the seafloor. Feature 4.2 is a section of elevated pipeline that stands approximately 0.3 meters (1.0 feet) off of the seafloor. Summary chartlets and individual contact images below.

Questions concerning this report should be directed to the Chief, Atlantic Hydrographic Branch at (757) 441-6746.

Chartlet to Accompany Danger to Navigation

DANGER TO NAVIGATION #4



Danger not submitted to MCD

Elevated pipelines with associated DtoN number

This chartlet has been corrected through
Notice to Mariners dated June 7, 2008
NOT FOR NAVIGATION.

Chartlet 1 of 1



NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

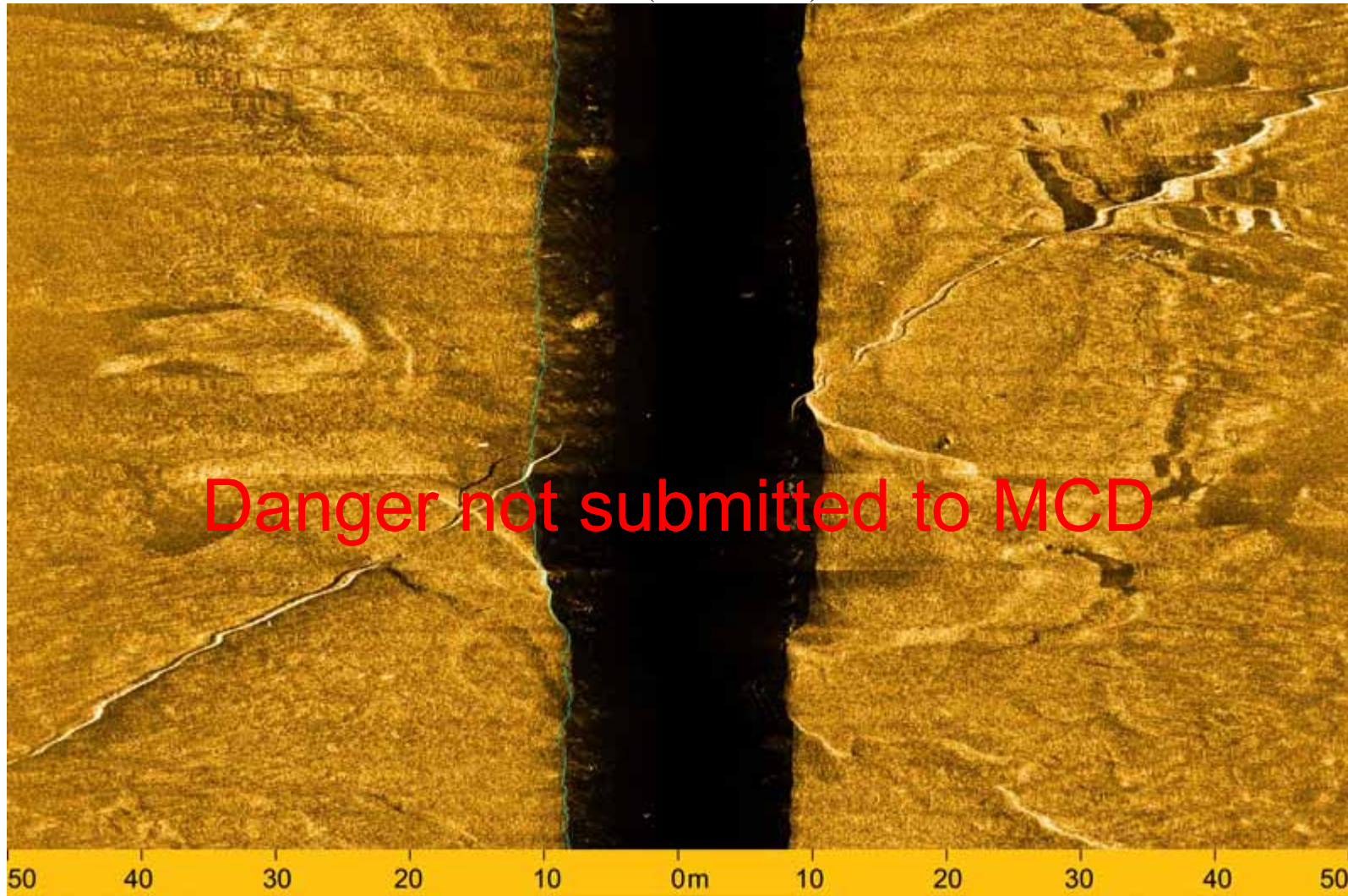
Project: OPR-J977-DE-08
Survey: H11836
State: Louisiana
Locality: Gulf of Mexico
Sub-Locality: Blind Bay
Survey Scale: 1:10,000

Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: UTM 16N
Chart: 11361
Chart Edition: 74th
Chart Scale: 1:80,000

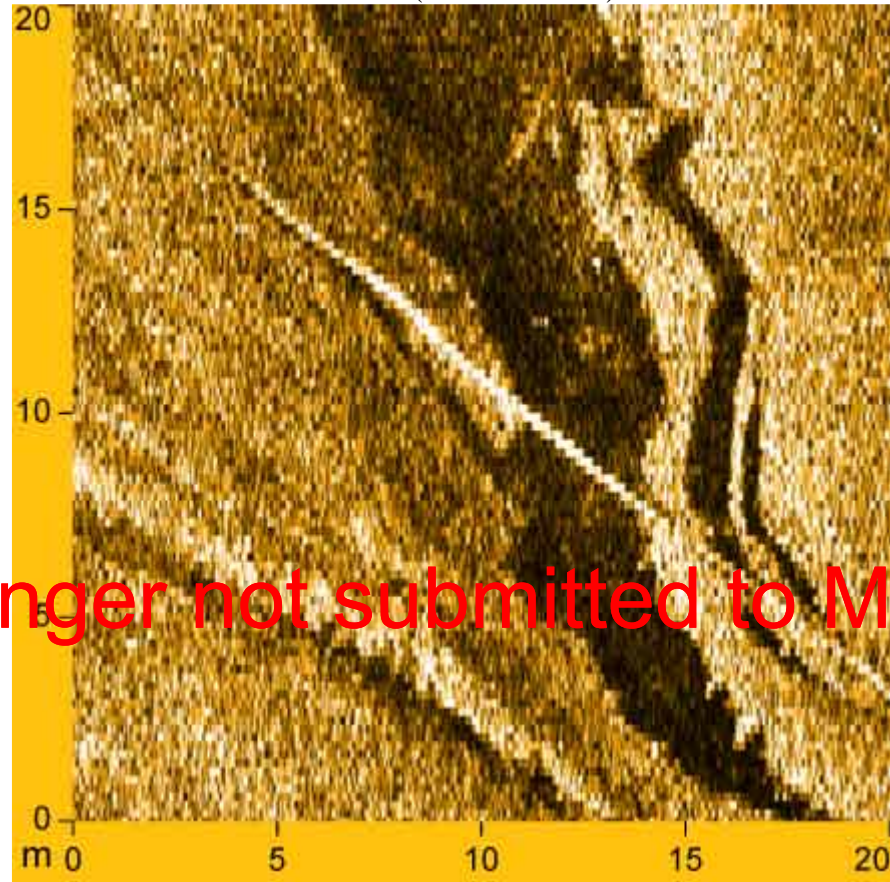
David Evans and
Associates, Inc.

September 24, 2008

DtoN 4.1 (204-141049-P)



DtoN 4.2 (206-202515-P)



Danger not submitted to MCD

Jason Creech

From: Castle.E.Parker [Castle.E.Parker@noaa.gov]
Sent: Tuesday, October 07, 2008 11:24 AM
To: Jason Creech
Cc: Shep.Smith; Kelly Schill
Subject: Re: H11836_DTON_4 Submission
Attachments: Card for Castle.E.Parker

Good Day Jason,

AHB is not submitting H11836 DtoN #4 & #5 to MCD as the least depth is deeper than what's currently charted. I agree the chart is incorrect, but MCD will contest the Danger submission based upon charted depths and the least depth of the feature; the Danger aspect or comparison is how the feature compares to the existing chart; rather than whether the chart is wrong or not. It would be a cartographic faux pas if we applied a 33-ft wreck in 12-15ft of water. AHB will update the chart with this information during chart compilation; it just doesn't warrant Danger submission based upon the current edition of the chart.

AHB will process and submit DtoN #3 for H11836.

If you wish to discuss call me tomorrow.

Thanks for your attention to the details and your assistance with charting issues.

Gene

Jason Creech w dte

Danger not submitted to MCD

Gene,

Attached is a Danger to Navigation report for H11836_DTON_4. The attached file includes the danger report, standard chartlet, and supporting images. Please let me know if you have any questions or require any additional information on this danger to navigation.

Thanks,

Jason

Jason Creech

Lead Hydrographer

David Evans and Associates, Inc.

(804) 516-7829

DANGER TO NAVIGATION 5

Danger not submitted to MCD

Jason Creech

From: Jason Creech
Sent: Tuesday, October 07, 2008 8:52 AM
To: 'Castle.E.Parker@noaa.gov'
Cc: 'tim.osborn@noaa.gov'; 'Patrick Fink'; Jon Dasler
Subject: H11836_DTON_5 Submission
Attachments: H11836_DTON_5.doc

Gene,

Attached is a Danger to Navigation report for H11836_DTON_5. The attached file includes the danger report, standard chartlet, and supporting images. Please let me know if you have any questions or require any additional information on this danger to navigation.

Thanks,
Jason

Jason Creech
Lead Hydrographer
David Evans and Associates, Inc.
(804) 516-7829

Danger not submitted to MCD

REPORT OF DANGER TO NAVIGATION

H11836 #5

Hydrographic Survey Registry Number: H11836

Survey Title: State: LOUISIANA
General Locality: GULF OF MEXICO
Sublocality: BLIND BAY

Project Number: OPR-J977-DE-08
Field Unit: David Evans and Associates, Inc.
Survey Date: July 25, 2008

Depths were acquired with Multibeam Sonar. Depths are corrected using unverified observed water levels from Devon Energy Facility, LA (8760417) and should be considered preliminary.

Positions are referenced from the USCG DGPS beacon at English Turn, Louisiana. Horizontal Datum is North American Datum of 1983 (NAD83).

Charts affected:

- 11361 74th Edition /September 1, 2007, 1:80,000 scale
- 11366 11th Edition /January 1, 2008, 1:250,000 scale
- 11360 42nd Edition/February 1, 2007, 1:500,000 scale

The following items were found during hydrographic survey operations.

DANGER TO NAVIGATION #5 (depths adjusted to MLLW)

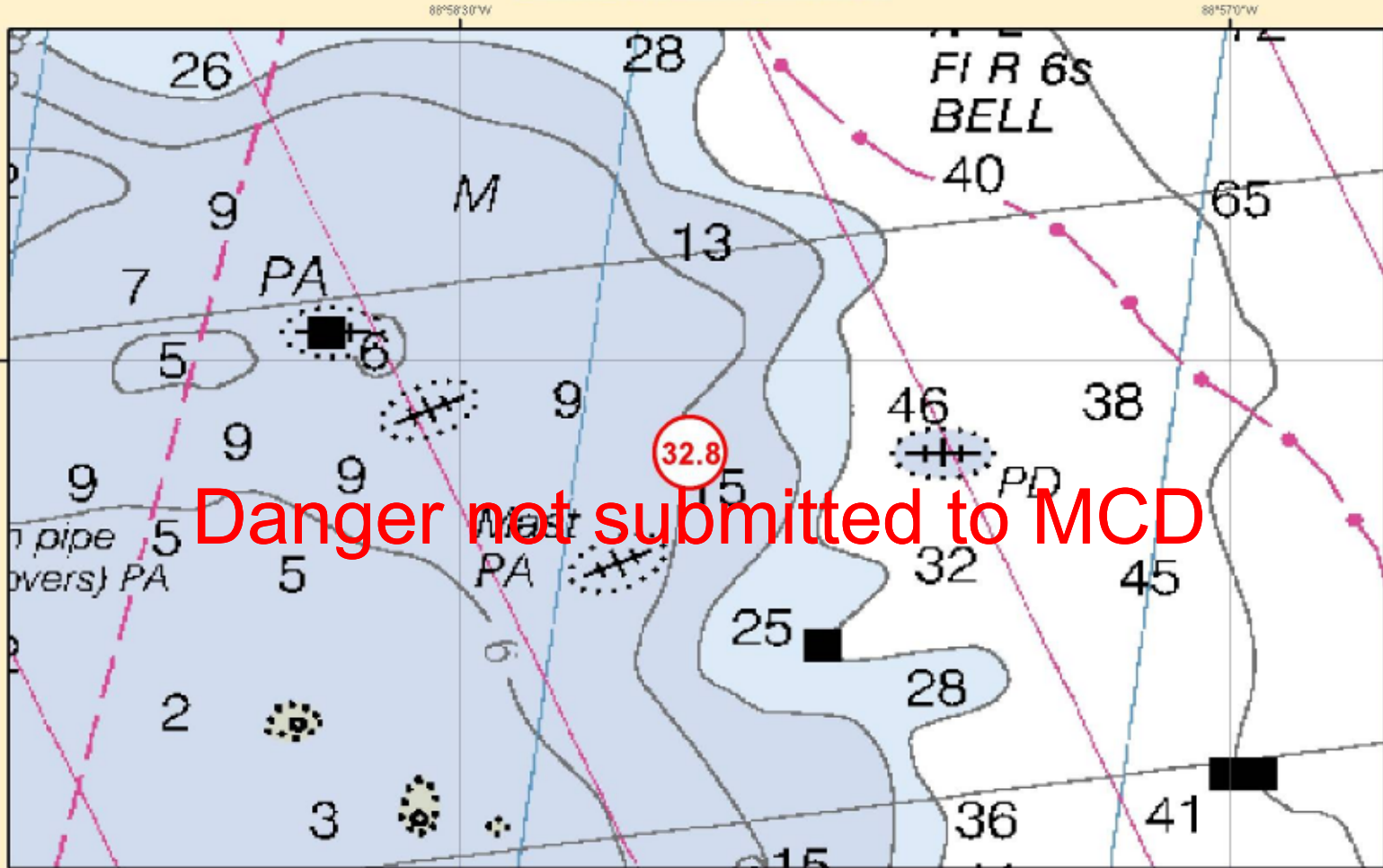
FEATURE	DEPTH (M)	DEPTH (FT)	LATITUDE (N)	LONGITUDE (W)
5.1 - WRECK	10.01	32.8	29/13/19.8588N	88/58/03.4248W

The wreck is 19 meters long and rises approximately 3.9 meters (12.8 feet) above the natural bottom.

Questions concerning this report should be directed to the Chief, Atlantic Hydrographic Branch at (757) 441-6746.

Chartlet to Accompany Danger to Navigation

DANGER TO NAVIGATION #5



Wreck

This chartlet has been corrected through Notice to Mariners dated June 7, 2008
 NOT FOR NAVIGATION.

Chartlet 1 of 1



NATIONAL OCEANIC AND
 ATMOSPHERIC ADMINISTRATION
 NATIONAL OCEAN SERVICE

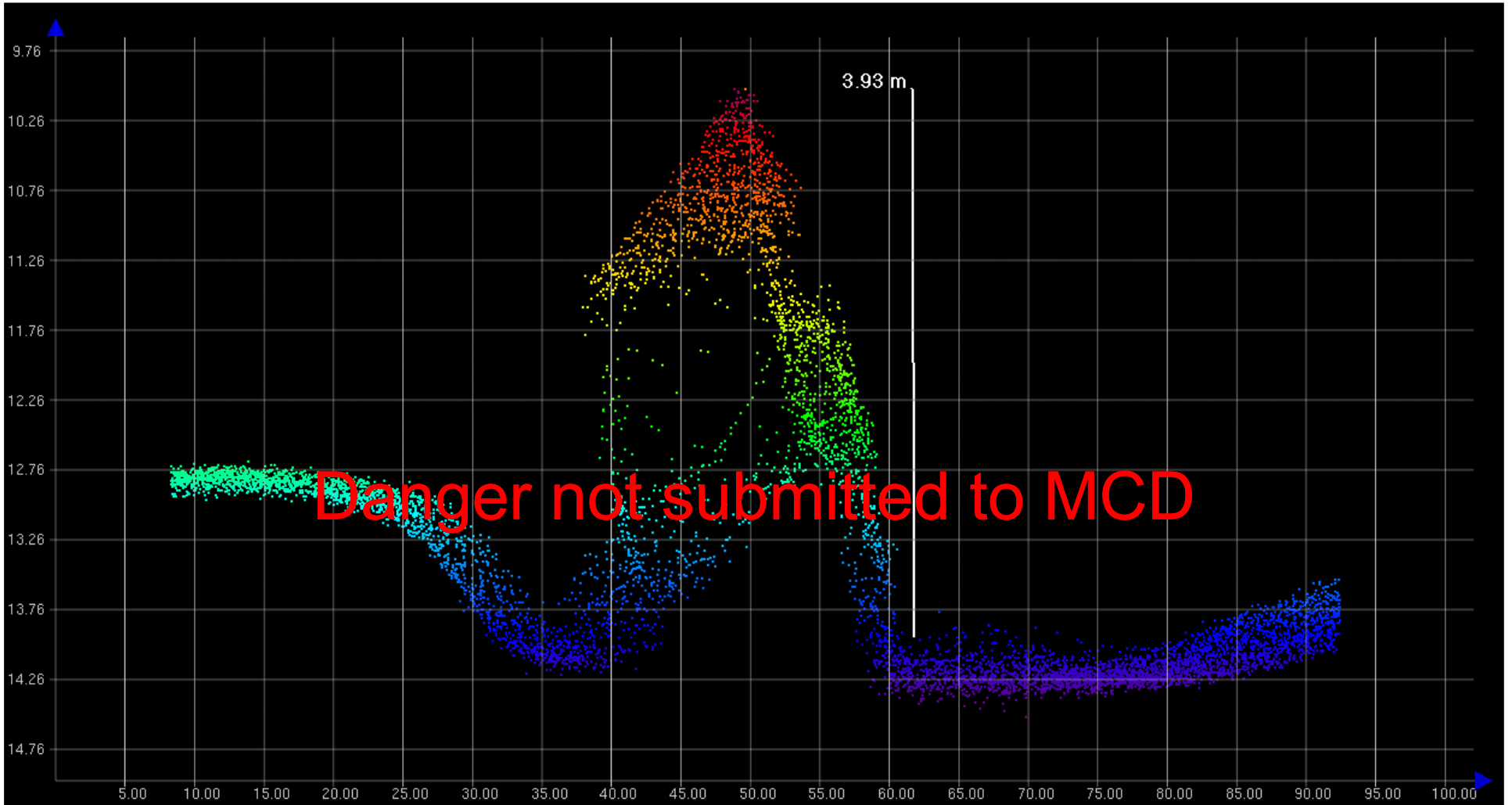
Project: OPR-J977-DE-08
 Survey: H11836
 State: Louisiana
 Locality: Gulf of Mexico
 Sub-Locality: Blind Bay
 Survey Scale: 1:10,000

Sounding Units: Feet
 Sounding Datum: MLLW
 Horizontal Datum: NAD 83
 Projection: UTM 16N
 Chart: 11361
 Chart Edition: 74th
 Chart Scale: 1:80,000

David Evans and
 Associates, Inc.

October 7, 2008

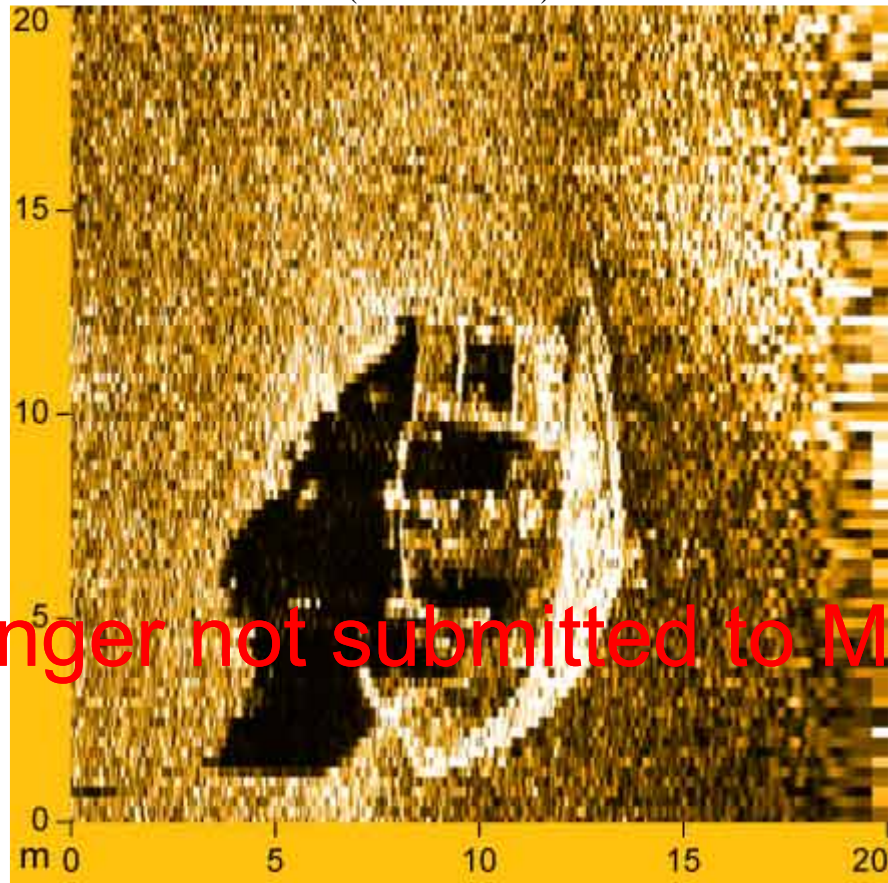
DtoN 5.1





Danger not submitted to MCD

(207-151525-P)



Danger not submitted to MCD

OPRJ977DEA08 BOTTOM SAMPLING

Sheet D, H11836

Sample	Time (UTC)	Day Number	Easting	Northing	Depth (m)	COLOR	NATSUR	NATQUA
D1	24:87	206	306245.6	3220449.29	24.87	7	4	1
D2	21:24:35	202	304175.12	3222242.64	3.07	8	4	2
D3	20:42:00	206	306181	3222256.81	9	7	1	1
D4	9:07:12	206	308242	3222485.19	25.38	7	1	1
D5	21:29:02	202	306706.61	3223449.69	5	8	4	1-6
D6	20:56:00	206	308182	3224133.28	10.22	7	1	1
D7	21:45:20	202	308193.96	3226243.68	5.15	8	4-17	6
D8	21:10:18	206	310176.69	3226302.98	13.85	7	1	1
D9	13:57:00	207	308289.21	3228229.43	7.07	7-8	2	2
D10	14:01:00	207	310204.2	3228295.17	9.1	7	2	1
D11	14:14:00	207	308205.11	3230278.65	7.69	7	2-17	1
D12	14:08:00	207	310180.31	3230255.59	10.79	7	2	7
D13	14:21:00	207	308194.4	3232233.91	8.34	7-8	1	1
D14	14:27:00	207	310176.22	3232265.71	10.47	7-8	1	1
D15	14:49:00	207	306217.89	3234275.68	8.46	7	2	1
D16	14:42:00	207	308184.99	3234289.99	9.91	8-7	4-1	1
D17	14:35:00	207	310198.29	3234265.03	17.25	7-8	2	7
D18	15:31:00	207	300122.09	3236244.06	5.28	8	17	4
D19	15:25:00	207	302200.92	3236249.37	7.16	8-7	1	1
D20	15:19:00	207	304162.19	3236252.85	8.67	7	2	7
D21	15:14:00	207	306229.67	3236234.36	10.42	7	2	7
D22	14:58:00	207	308163.12	3236272.54	15.81	8	2	7
D23	15:07:00	207	306168.58	3238317.16	15:07	7	1	1



D 0 0 2

2 cm





D 0 0 3



D 0 0 4

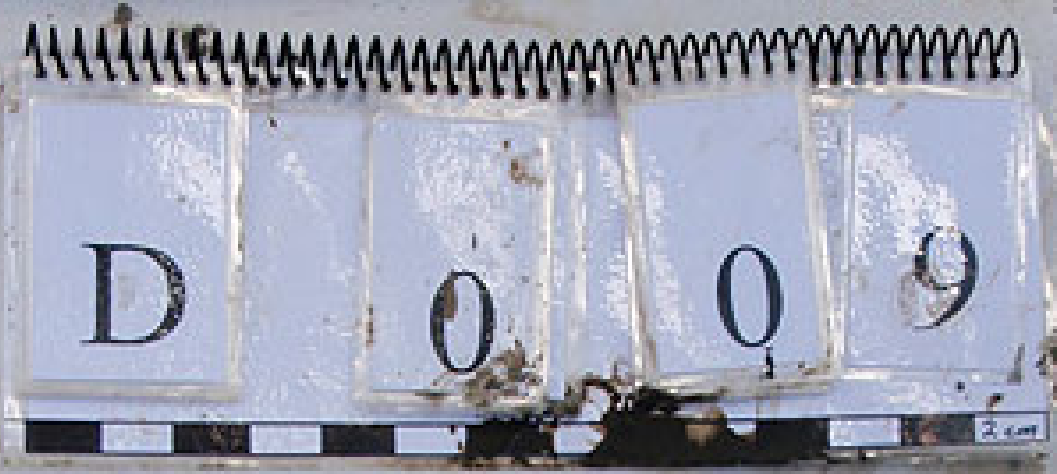






DOO8





D 0 1 0

2 cm





D 0 1 1



Stedifit®





D 0 1 2



D

0

1

3



Stemina



D O 4

2 cm



D O 1 5



D

0

1

6

2 cm

Stearite



D

0

1

7



2 cm



Stern

D

0

1

8

2 cm



D

0

1

9

2 cm



D

0

2

0

2 cm



D 0 2 1



D 0 2 2





D

0

2

3

2 cm



**ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to ACCOMPANY
SURVEY H11836 (2008)**

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

No changes from DR.

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 Bathy Manager version 2.1 SP1
DKART INSPECTOR version 5.0
CARIS HOM version 3.3 SP3
CARIS S57 Composer version XX HF

B.2. QUALITY CONTROL

B.2.1. H-Cell

The final products from the review were a singlebeam surface of 2m resolution (mainscheme and crosslines), and three multibeam surfaces of 50cm resolution (development lines over features). First, the shoal layer was extracted from the singlebeam surface and a depth layer regenerated from the shoal layer. Then this shoal extracted surface was combined with the multibeam surfaces at a 6m resolution.

The survey scale soundings were extracted from the combined surface with a shoal-biased radius of 1mm to the scale of the largest scale chart (11361, 1:80,000), which encompasses the entire H11836 survey area, hence no additional compilation scales needed to be considered.

A TIN (Triangulated Irregular Network) was generated from the survey scale soundings, and a surface was interpolated from this TIN. The interpolated surface was then shifted by a factor of -0.229m (-0.75ft) to account for NOAA's sounding rounding convention when creating depth contours, which were generated from this interpolated, shifted surface. The depth contours were useful when selecting chart scale soundings, and are included in the submission to MCD (Marine Chart Division) for reference only.

The interpolated surface (prior to shifting) was also used to aid in the selection of chart scale soundings. Soundings were extracted from the interpolated surface using a shoal-biased radius commensurate with the chart scale of 11361. A filter was used in the sounding selection to exclude soundings derived from interpolated nodes, ensuring the chart soundings selected were a subset of the survey scale soundings. The chart soundings obtained in this process were then manually edited to ensure cartographic best practices are in place, particularly in areas around features, depth contours, and survey boundaries.

The meta borders were hand-drawn to encompass all survey soundings. The southern end of the meta coverage was trimmed to align with the meta boundary of previously compiled DEA junction survey H11835.

Orthophotos obtained from the U.S. Geological Survey (USGS) National Map Seamless Server (<http://seamless.usgs.gov/index.php>) were referenced in the H-Cell compilation regarding changes to the shoreline (see ER section D.1.1). The full source data for the orthophotos utilized area as follows:

National Agriculture Imagery Program (NAIP) Orthoimagery for Zone 16 Louisiana State Quarter Quadrangle Date: 20080122 and I.D. # n_2908956_se_16_1_20071011.

The pre-compilation components include depth area (DEPARE), un-surveyed areas (UNSARE), depth contour (DEPCNT), sounding selection (SOUNDG), features (OBSTRN, OFSPLF, SBDARE, WRECKS), meta objects (M_COVR, M_QUAL), and cartographic blue notes (\$CSYMB).

All of the components with the exception of the survey scale soundings and depth contours were inserted into one feature layer (including the blue notes, as dictated by Hydrographic Technical Directive 2008-8), and this layer was exported into S-57 format in order to create the H-Cell deliverable. Similarly, the survey scale sounding selection and depth contour were exported into S-57 format separately, and then both S-57 files were processed in Caris HOM to convert the metric units to feet. The final products are two S-57 files, one that contains the survey scale sounding selection and depth contours (H11836_SS.000), and one that contains the chart soundings, features, meta objects, and blue notes (H11836_CS.000). Finally, quality assurance checks were made utilizing DKART Inspector and Caris S-57 Composer 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.

H11836 CARIS H-Cell final deliverables include the following products:

H11836_CS.000	1:80,000 Scale	H11836 H-Cell with Chart Scale Selected Soundings
H11836_SS.000	1:10,000 Scale	H11836 Selected Soundings (Survey Scale)

B.2.2. Junctions

H11836 junctions with survey H11835 to the south, adequately addressed in the H11835 Descriptive Report. Over 95% of all soundings are within 0.25 meters, within IHO Order I specifications for depth accuracy.

C. VERTICAL AND HORIZONTAL CONTROL

No changes from DR.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

11361 (75th Edition, 08/01/2009)

Corrected through NM 08/01/2009
Corrected through LNM 08/01/2009
Scale 1:80,000

ENC Comparison

US4LA30M

Pilottown
Edition 14
Application Date 2009-08-04
Issue Date 2009-08-04
Chart 11361

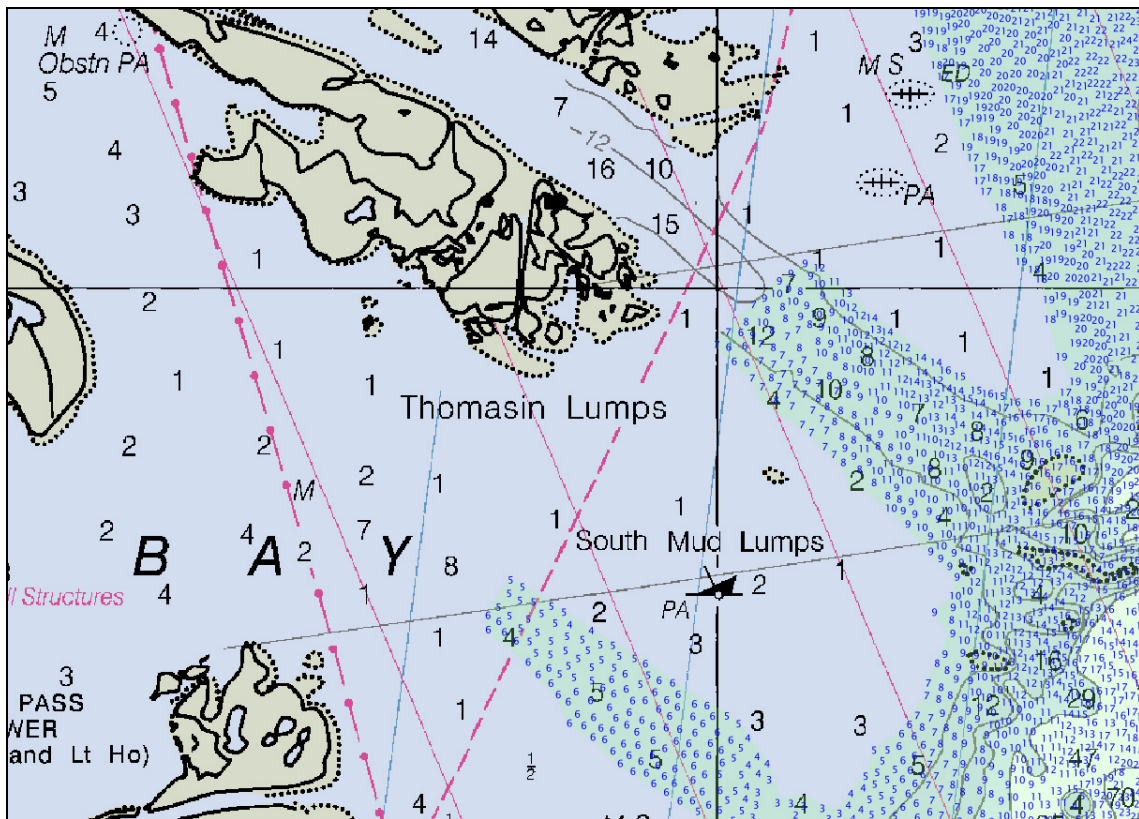
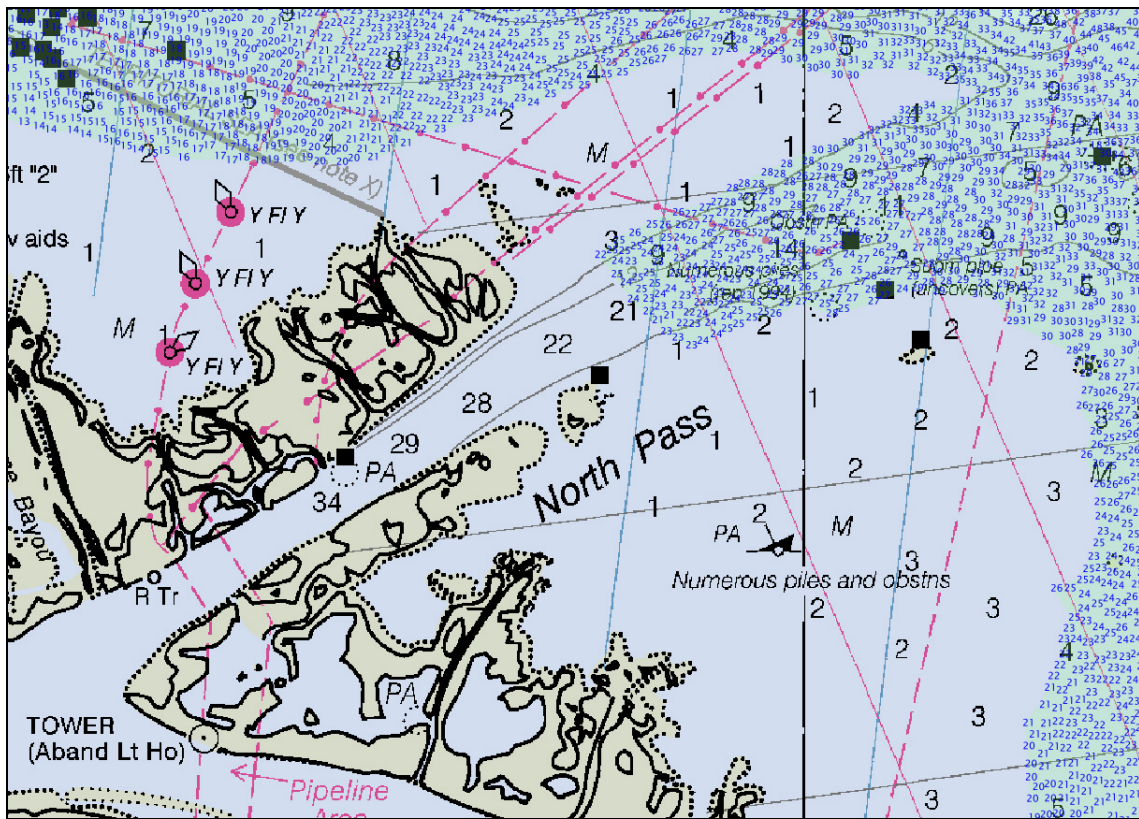
US4LA33M

Mississippi River Delta
Edition 17
Application Date 2009-02-06
Issue Date 2009-08-24
Chart 11361

D.1.1 Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section “D” and Appendix 1&2 of the Descriptive Report. The following exceptions are noted:

- a. According to the statement of work, the inshore limit of hydrography is the charted 4 foot contour, not the actual 4 foot contour—this particular specification was necessary for contractual stipulations. The result, in this case, is an awkward charting situation observed along parts of the western border of the survey area where deepening is observed. In some areas, surveyed soundings in the order of 15-30 feet are in close proximity to charted soundings between 1-3 feet, as observed in the screen captures below.

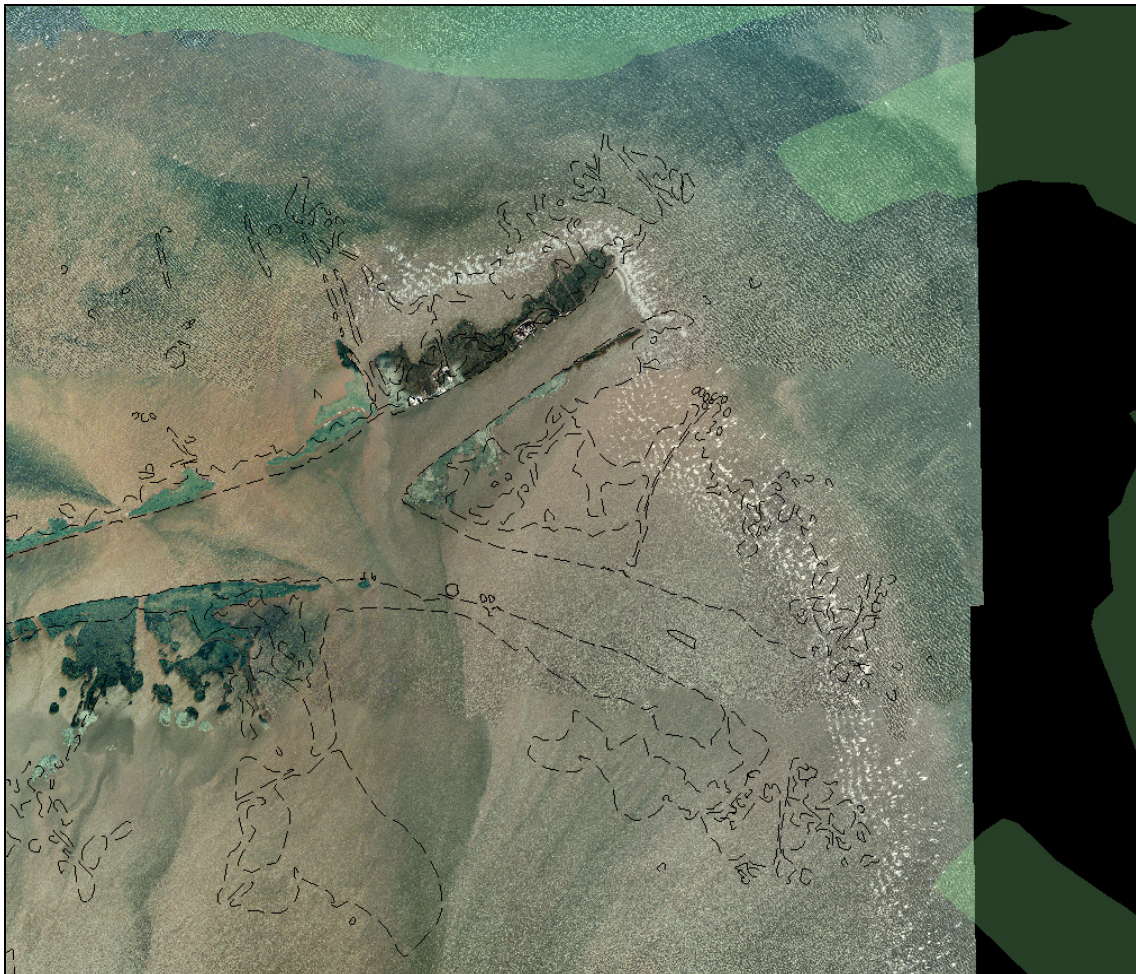


Representation of the survey soundings alongside the existing charted soundings outside of the survey area would result in a cartographic ledge, or drop-off, which likely does not exist, as deepening has likely occurred throughout the entire area. The recommendation

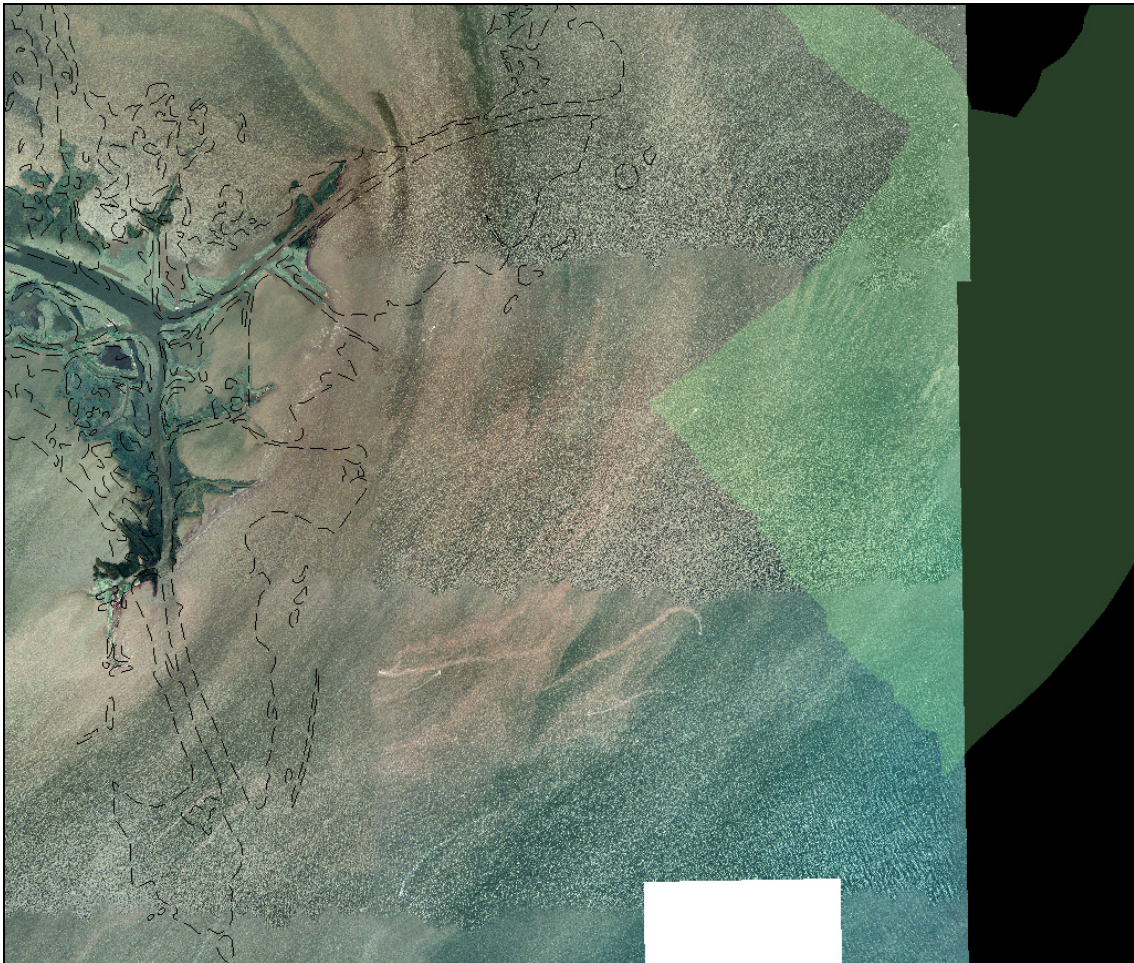
is to place an “un-surveyed area” (UNSARE) in the location between the H11836 survey area and charted land.

In addition, the shoreline to the west of the survey area is composed of hundreds of islands and peninsulas associated with the Mississippi River delta. Drastic change is observed between the charted land and the shoreline as seen in the 2008 USGS orthophotos. The below screen captures depict the observed drastic change in shoreline. The currently charted shoreline, imported from the ENC (black line), is overlaid on top of the USGS orthophotos.

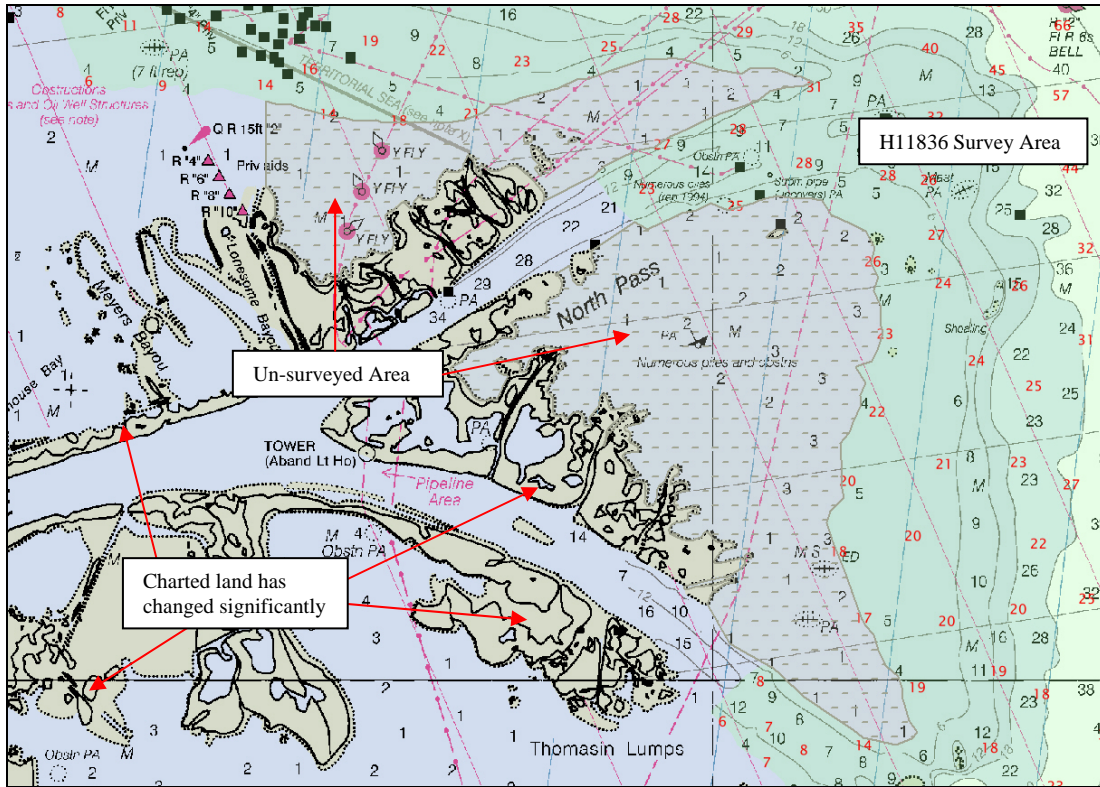
Area around North Pass and Blind Bay:



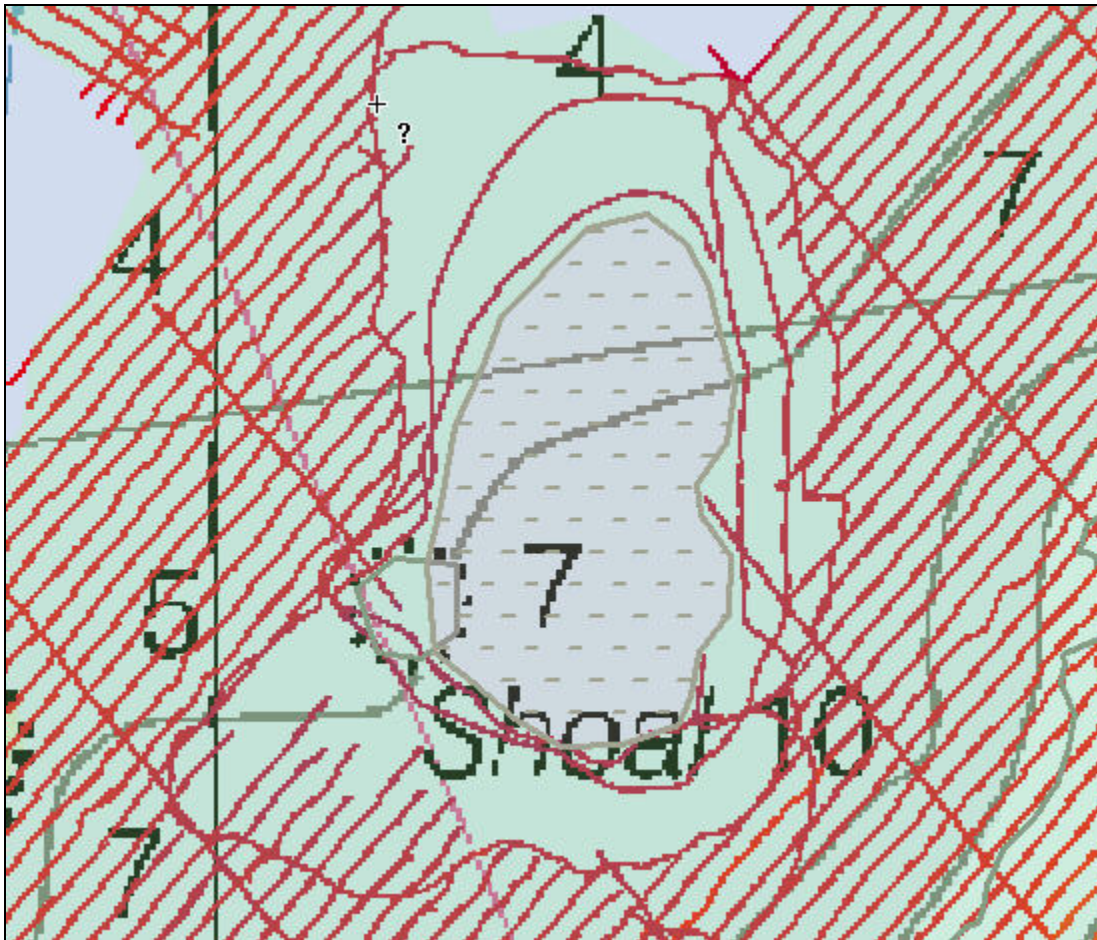
Area around Southeast Pass:



Recommend an entirely new shoreline be delineated, with the “un-surveyed areas” as observed in the screen capture below.



There is an additional un-surveyed area where no singlebeam coverage was obtained, as observed in the screen capture below:



Recommend to chart the un-surveyed area. The charted seven foot sounding within the un-surveyed area should be removed from the chart. The charted danger circle and the text “Shoal” should also be removed (this was previously submitted as a DtoN). Instead, the zero-foot contour (depicted in the screen capture as a thick grey line) should be charted as an intertidal area. In addition, recommend to add the text “Shoal” in the center of the un-surveyed area, as this was a shoal area, and unable to be surveyed.

D.2. ADDITIONAL RESULTS

An additional Danger to Navigation was submitted to MCD during AHB office processing. The report is included in DR Appendix I.

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 or the blue notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

APPROVAL SHEET
H11836

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 review 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: _____
Richard Brennan
LCDR, NOAA
Chief, Atlantic Hydrographic Branch