

**H13216**

U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Ocean Service

**DESCRIPTIVE REPORT**

Type of Survey: Basic Hydrographic Survey

Registry Number: H13216

**LOCALITY**

State(s): Texas

General Locality: Port Arthur, TX

Sub-locality: 8 NM South of Mud Lake

**2019**

CHIEF OF PARTY  
Erin Markham

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**H13216**

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

State(s): **Texas**

General Locality: **Port Arthur, TX**

Sub-Locality: **8 NM South of Mud Lake**

Scale: **40000**

Dates of Survey: **06/04/2019 to 09/28/2019**

Instructions Dated: **02/21/2019**

Project Number: **OPR-K371-KR-19**

Field Unit: **SAIC**

Chief of Party: **Erin Markham**

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Side Scan Sonar Multibeam Echo Sounder Backscatter**

Verification by: **Atlantic Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

**Remarks:**

Contract: EA-133C-14-CQ-0033/TO-0005. Contractor: Leidos, 221 Third Street, Newport, RI 02840 USA. Subcontractors: Divemasters, Inc., 15 Pumpshire Road, Toms River, NJ 08753; OARS, 8705 Shoal Creek Blvd, Suite 109, Austin, TX 78757. Leidos Doc. 19-TR-042. All times were recorded in UTC. Data were collected in North American Datum of 1983 (NAD83) 2011 realization 2010 (NAD83(2011)2010.0), UTM Zone 15N.

*Any revisions to the Descriptive Report (DR) applied during office processing are shown in red italic text. The DR is maintained as a field unit product, therefore all information and recommendations within this report are considered preliminary unless otherwise noted. The final disposition of survey data is represented in the NOAA nautical chart products. All pertinent records for this survey are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <https://www.ncei.noaa.gov/>. Products created during office processing were generated in NAD83 UTM 15N, MLLW. All references to other horizontal or vertical datums in this report are applicable to the processed hydrographic data provided by the field unit.*

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## Descriptive Report to Accompany Survey H13216

Project: OPR-K371-KR-19

Locality: Port Arthur, TX

Sublocality: 8 NM South of Mud Lake

Scale: 1:40000

June 2019 - September 2019

**SAIC**

Chief of Party: Erin Markham

### A. Area Surveyed

The area surveyed was a section of the Gulf of Mexico south of Mud Lake, Texas (Figure 1).

#### A.1 Survey Limits

Data were acquired within the following survey limits:

<b>Northwest Limit</b>	<b>Southeast Limit</b>
29° 32' 34.53" N 94° 20' 3.81" W	29° 23' 44.34" N 94° 8' 12.61" W

*Table 1: Survey Limits*

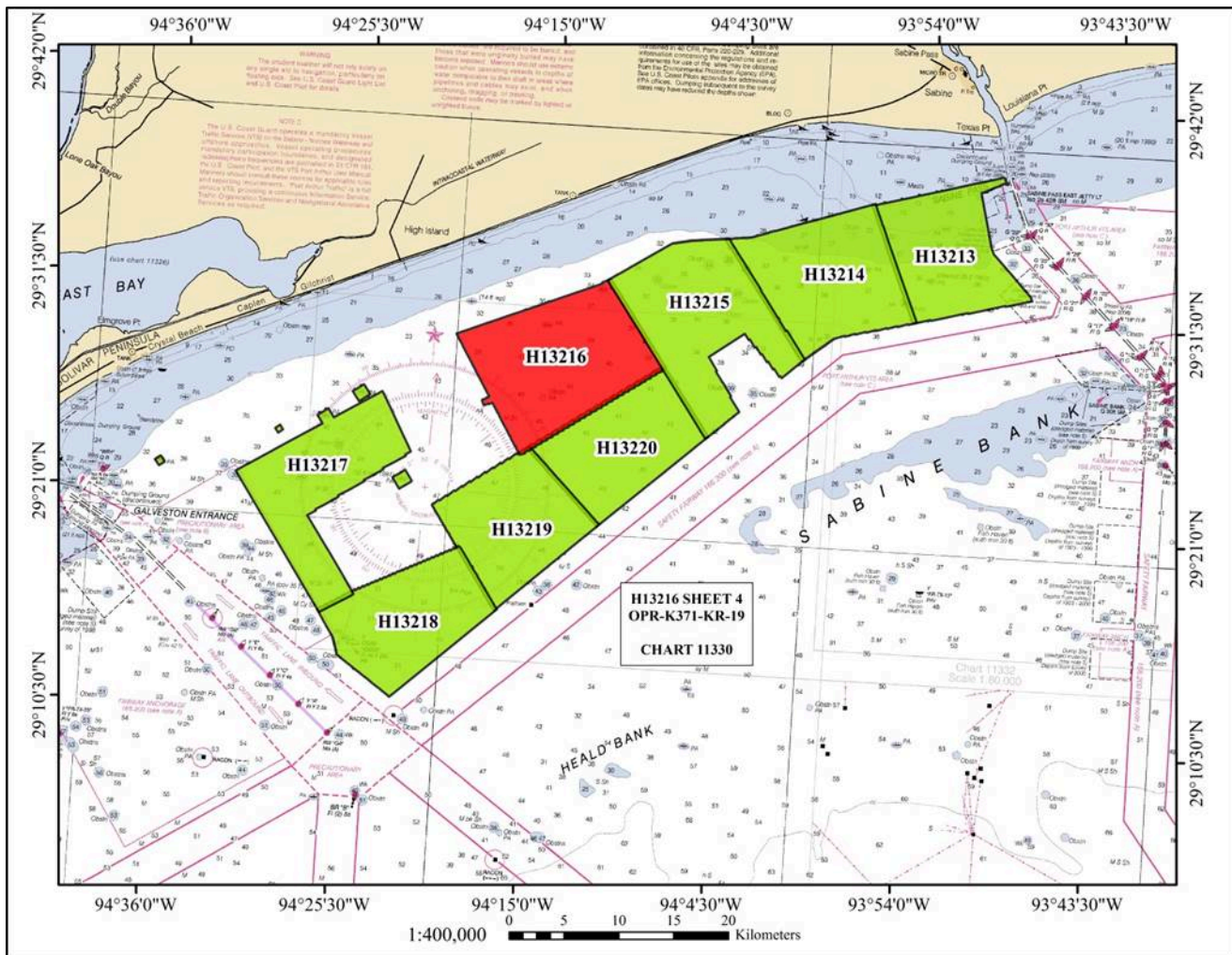


Figure 1: H13216 Survey Bounds

Survey limits were acquired in accordance with the requirements in the Project Instructions and the Hydrographic Surveys Specifications and Deliverables (HSSD) March 2019.

### A.2 Survey Purpose

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. Port Arthur, located on the Gulf of Mexico Intra-coastal Waterway in Texas, is home to a large refinery network (1). The Port of Port Arthur hosts the Motiva refinery, the largest oil refinery in the United States (2). Traffic flow through the Port is heavy and in 2010, an oil spill occurred from an oil tanker and barge collision spilling 450,000 gallons of oil into the Sabine/Neches waterway (3). This busy seaport has also been hit by several hurricanes. On August 29, 2017, Hurricane Harvey hit Port Arthur bringing upwards of 40 inches of rainfall and widespread flooding to the area (4). This Hurricane had the potential to change the seafloor of the Port which sees over 35 million tons of vessel traffic (5).

To continue to promote safe passage of traffic through the Port, this project will survey 286 square nautical miles (SNM) of seafloor in Port Arthur. The survey will address concerns of migrating shoals and exposed hazards by updating bathymetry and positions of hazards and reducing the risk to navigation. Survey data from this project is intended to supersede all prior survey data in the common area and will provide contemporary data to update National Ocean Service (NOS) nautical charting products.

#### Citations

1. <https://www.portarthurtx.gov/236/About-Us>
2. "Tropical Storm Harvey Closes America's Biggest Refinery". *Maritime Executive*. 30 August 2017. Retrieved 31 August 2017.
3. Gonzalez, Angel (24 January 2010). "Oil Spill Hits Texas Port". *The Wall Street Journal*. Retrieved 24 January 2010.
4. Harrington, Rebecca. "Flash floods send Texans into 'survival mode' as Harvey hits Port Arthur with 26 inches of rain in one day". *BusinessInsider.com*. Business Insider. Retrieved 30 August 2017.
5. The U.S. Waterway System, 2016 Transportation Facts & Information. Navigation and Civil Works Decision Support Center, U.S. Army Corps of Engineers.

### **A.3 Survey Quality**

The entire survey is adequate to supersede previous data.

Leidos warrants only that the survey data acquired by Leidos and delivered to NOAA under Contract EA-133C-14-CQ-0033 reflects the state of the sea floor in existence on the day and at the time the survey was conducted.

H13216 was surveyed in accordance with the following documents:

1. Project Instructions, OPR-K371-KR-19, dated 21 February 2019
2. Hydrographic Surveys Specifications and Deliverables (HSSD), March 2019
3. Waiver\_2019 HSSD\_signed.pdf, dated 05 November 2019
4. OPR-K371-KR-19 Statement of Work, dated 21 February 2019

### **A.4 Survey Coverage**

The following table lists the coverage requirements for this survey as assigned in the project instructions:



Water Depth	Coverage Required
All waters in survey area	Complete Coverage (Refer to HSSD Section 5.2.2.3). Complete 6443 LNMs. Transit mileage and data which do not meet HSSD specifications shall not count towards the completion of the LNM. Notify the Project Manager/COR upon nearing completion. The final survey area shall be squared off and ensure the full investigation of any features within the surveyed extent. Project Manager/COR may adjust survey prioritization based on observed shoaling. Additional or fewer sheets may be assigned based on survey area achieved.

*Table 2: Survey Coverage*

Leidos chose to achieve the coverage requirement using Complete Coverage, Option B (100% side scan sonar coverage with concurrent multibeam). Survey coverage achieved was in accordance with the requirements in the Project Instructions and the HSSD (Figure 2 through Figure 4).

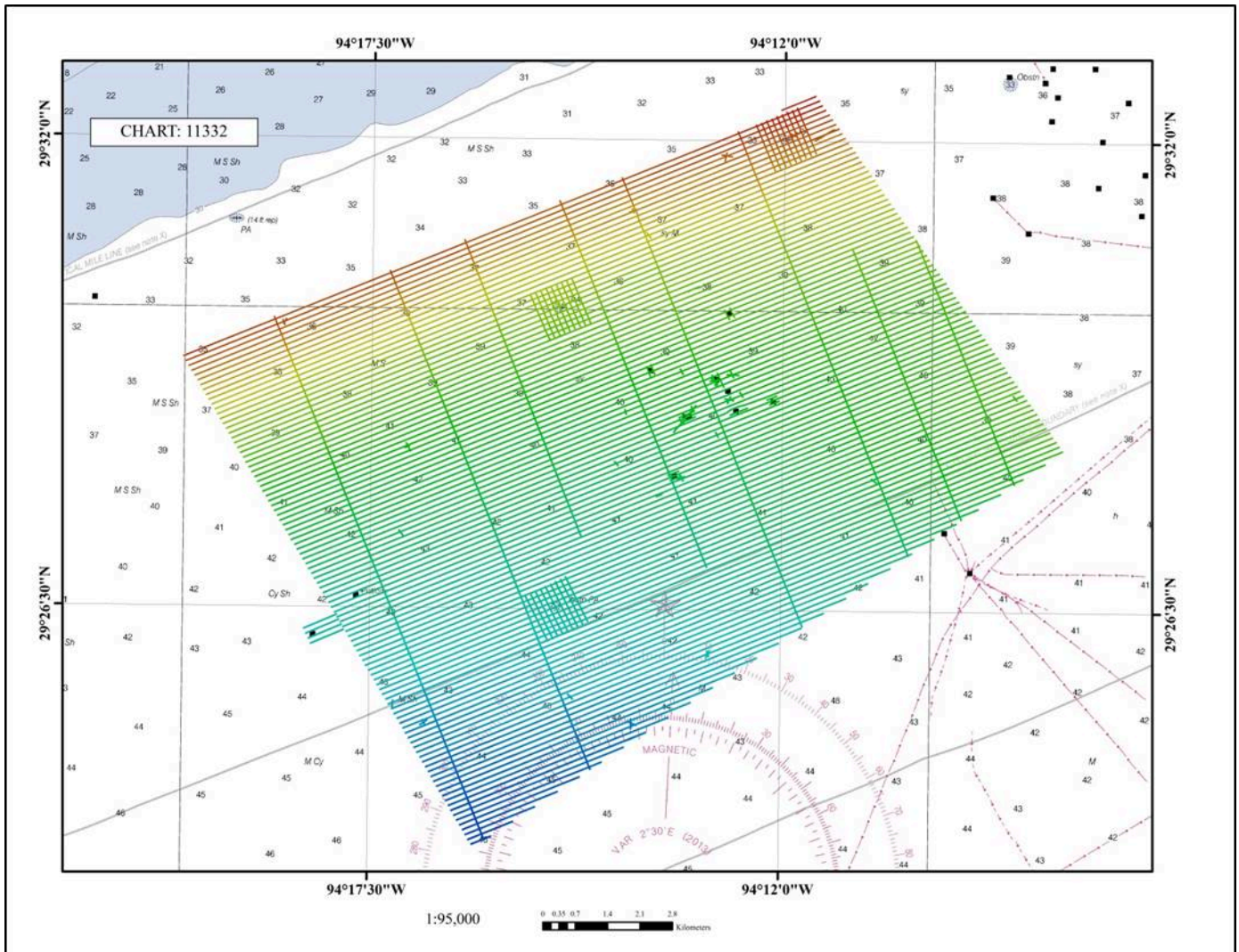


Figure 2: Final Bathymetry Coverage for H13216

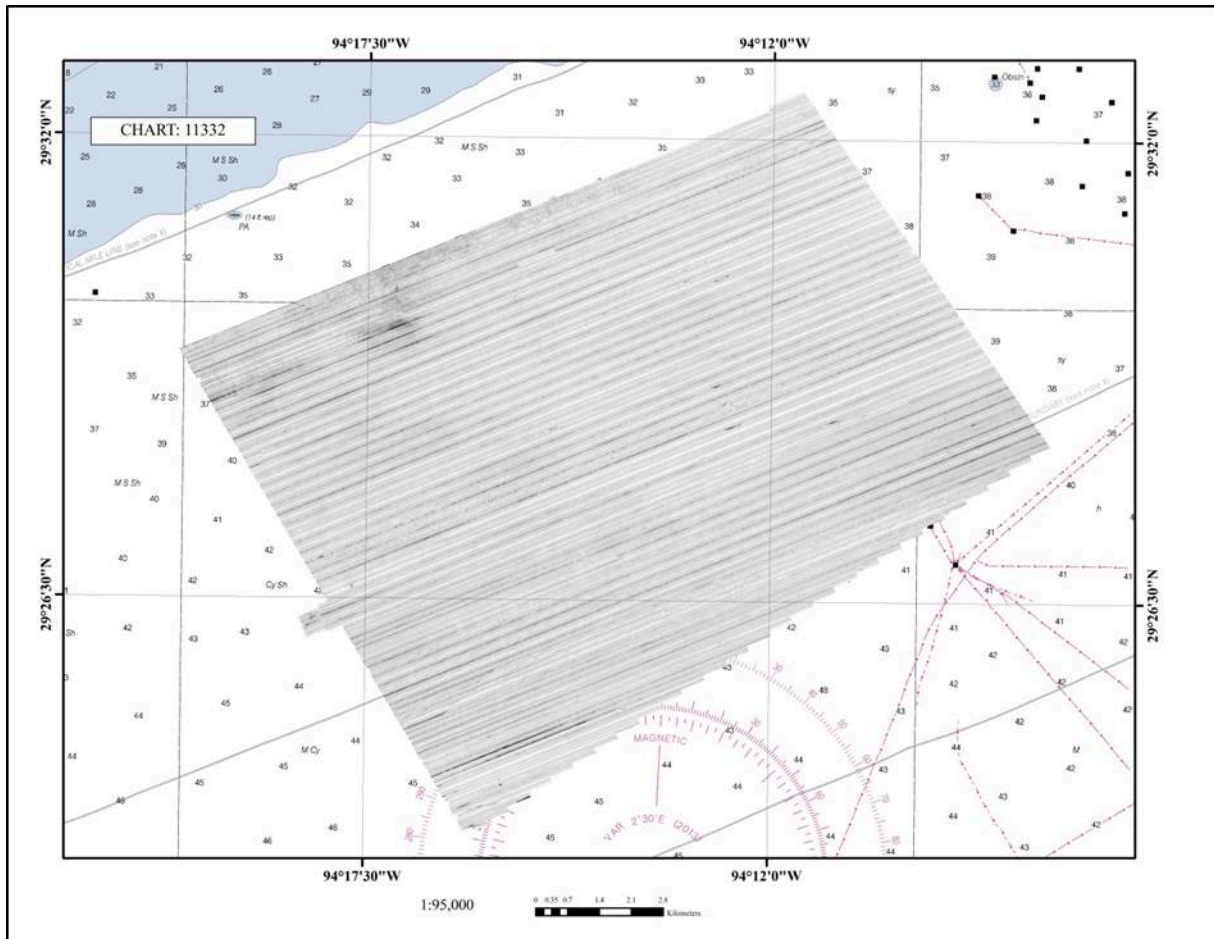


Figure 3: Final Side Scan Coverage for H13216 (100% coverage)

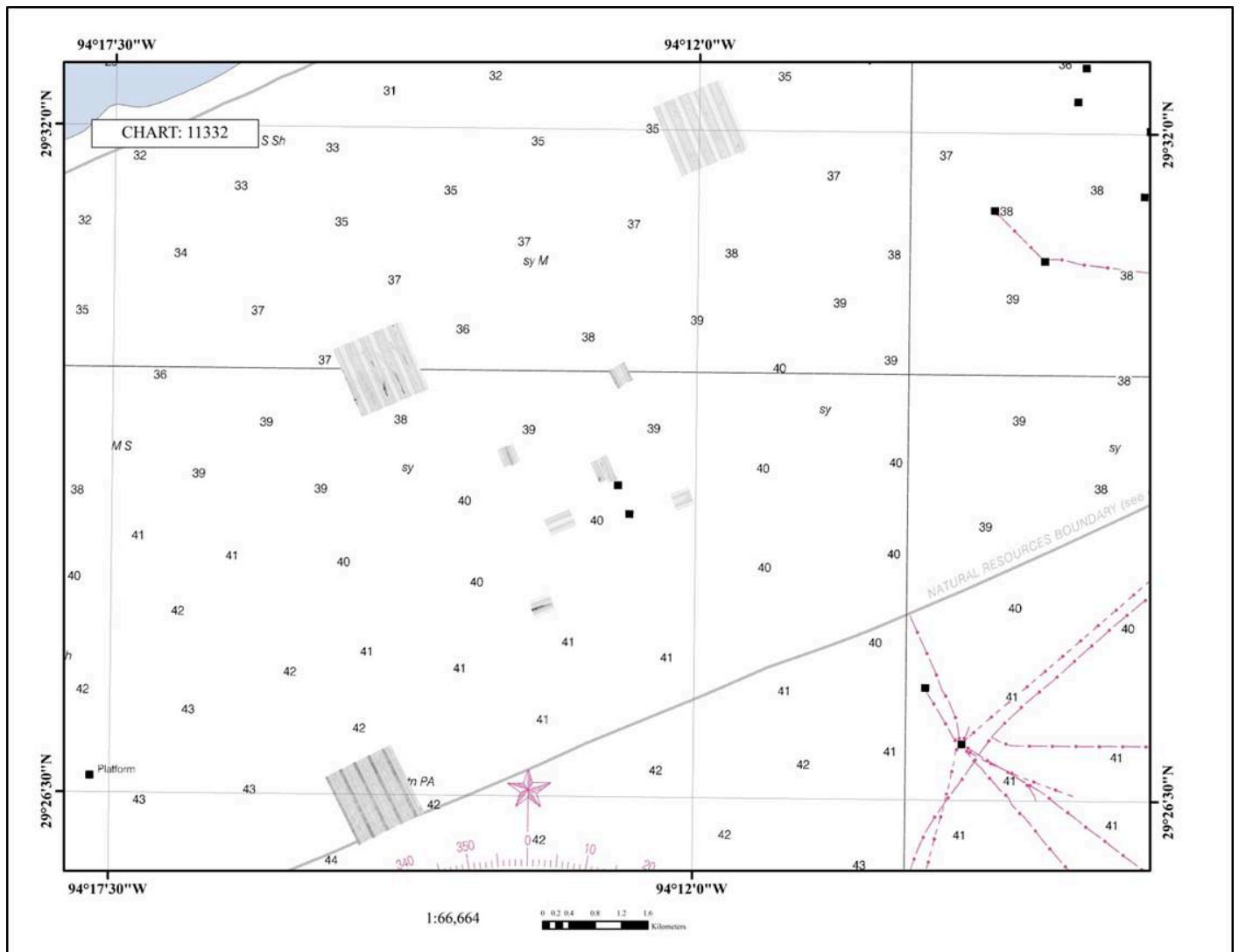


Figure 4: Final Side Scan Coverage for H13216 (disproval coverage)

### A.6 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey:

	<b>HULL ID</b>	<i>M/V Atlantic Surveyor</i>	<i>Total</i>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0
	<b>MBES Mainscheme</b>	0	0
	<b>Lidar Mainscheme</b>	0	0
	<b>SSS Mainscheme</b>	0	0
	<b>SBES/SSS Mainscheme</b>	0	0
	<b>MBES/SSS Mainscheme</b>	773.20	773.20
	<b>SBES/MBES Crosslines</b>	38.99	38.99
	<b>Lidar Crosslines</b>	0	0
<b>Number of Bottom Samples</b>			2
<b>Number Maritime Boundary Points Investigated</b>			0
<b>Number of DPs</b>			0
<b>Number of Items Investigated by Dive Ops</b>			0
<b>Total SNM</b>			48

*Table 3: Hydrographic Survey Statistics*

The following table lists the specific dates of data acquisition for this survey:

<b>Survey Dates</b>	<b>Day of the Year</b>
06/04/2019	155

<b>Survey Dates</b>	<b>Day of the Year</b>
07/06/2019	187
07/07/2019	188
07/08/2019	189
07/09/2019	190
07/10/2019	191
07/11/2019	192
07/18/2019	199
07/19/2019	200
07/22/2019	203
08/03/2019	215
09/27/2019	270
09/28/2019	271

*Table 4: Dates of Hydrography*

## **B. Data Acquisition and Processing**

### **B.1 Equipment and Vessels**

Leidos used their ISS-2000 software on a Windows 7 platform to acquire these survey data. Survey planning and data analysis were conducted using the Leidos SABER software on Red Hat Enterprise 7 Linux platforms. Klein 3000 side scan sonar (SSS) data were collected on a Windows 7 platform using Klein's SonarPro software. Subsequent processing and review of the SSS data, including the generation of coverage mosaics, were accomplished using SABER.

A detailed description of the systems and vessel used to acquire and process these data is included in the Data Acquisition and Processing Report (DAPR) for OPR-K371-KR-19, delivered previously with H13213. There were no variations from the equipment configuration described in the DAPR.

### B.1.1 Vessels

The following vessels were used for data acquisition during this survey:

<b>Hull ID</b>	<i>M/V Atlantic Surveyor</i>
<b>LOA</b>	110 feet
<b>Draft</b>	9 feet

*Table 5: Vessels Used*



*Figure 5: M/V Atlantic Surveyor*

The M/V Atlantic Surveyor (Figure 5) was used to collect multibeam echo sounder (MBES) (RESON SeaBat T50), side scan sonar (SSS) (Klein 3000), and sound speed data during twenty-four hours per day survey operations.

A detailed description of the vessel used is included in the DAPR.

## B.1.2 Equipment

The following major systems were used for data acquisition during this survey:

<b>Manufacturer</b>	<b>Model</b>	<b>Type</b>
Teledyne RESON	SeaBat T50-R	MBES
Klein Marine Systems	System 3000	SSS
Applanix	POS MV 320 v5	Positioning and Attitude System
AML Oceanographic	MVP30	Sound Speed System
AML Oceanographic	BaseX	Sound Speed System

*Table 6: Major Systems Used*

A detailed description of the equipment installed is included in the DAPR.

## B.2 Quality Control

### B.2.1 Crosslines

Multibeam/single beam echo sounder/side scan sonar crosslines acquired for this survey totaled 5.04% of mainscheme acquisition.

Refer to Separates II for details about how the crossing analyses were performed and a complete discussion of each analysis and tabular results. Figure 6 summarizes the crossline comparison results.

<b>Difference Grid</b>	<b>Minimum and Maximum CUBE Depth (meters) of Crossline Grid</b>	<b>IHO Order 1A Maximum Allowable Uncertainty (meters) for the Range of Depths</b>	<b>Percentage of Depth Differences Less than IHO Order 1A Maximum Allowable Uncertainty</b>
<i>M/V Atlantic Surveyor</i> Multibeam one-meter Crossline (Class 1) to one-meter Mainscheme	10.874– 13.899	0.520– 0.532	100.00

*Figure 6: Summary of Crossing Analysis*



### B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Method	Measured	Zoning
ERS via VDATUM	0.00 meters	0.122 meters

*Table 7: Survey Specific Tide TPU Values.*

Hull ID	Measured - CTD	Measured - MVP	Surface
M/V Atlantic Surveyor	N/A	1.0 meters/second	1.0 meters/second

*Table 8: Survey Specific Sound Speed TPU Values.*

For specific details on the use and application of the SABER Total Propagated Uncertainty (TPU) model, refer to the DAPR. Once the TPU model was applied to the GSF bathymetry data, each beam was attributed with the horizontal uncertainty and the vertical uncertainty at the 95% confidence level. The vertical and horizontal uncertainty values, estimated by the TPU model for individual multibeam soundings, varied little across the dataset, tending to be most affected by beam angle. Individual soundings that had vertical and horizontal uncertainty values above IHO S-44 5th Edition, Order 1a were flagged as invalid during the uncertainty attribution.

As discussed in the DAPR, SABER generates two vertical uncertainty surfaces; the Hypothesis Standard Deviation (Hyp. StdDev) and the Hypothesis Average Total Propagated Uncertainty (Hyp. AvgTPU). A third vertical uncertainty surface is generated from the larger value of these two uncertainties at each node and is referred to as the Hypothesis Final Uncertainty (Hyp. Final Uncertainty).

The final H13216 one-meter PFM CUBE surface contained final vertical uncertainties that ranged from 0.260 meters to 0.350 meters. The IHO Order 1a maximum allowable vertical uncertainty was calculated to range between 0.519 to 0.532 meters, based on the minimum CUBE depth (10.753 meters) and maximum CUBE depth (13.942 meters). Results from the SABER Check PFM Uncertainty function identified that there were no nodes in the final H13216 one-meter PFM CUBE surface with final vertical uncertainties that exceeded IHO Order 1a allowable vertical uncertainty. The SABER Frequency Distribution Tool was also used to review the Hyp. Final Uncertainty surface within the final H13216 one-meter PFM grid, and the results showed that in the final one-meter PFM grid, 100.00% of all nodes had final uncertainties less than or equal to 0.350 meters.

**B.2.3 Junctions**

Per the Project Instructions, analysis of the H13216 junction with an adjacent survey was performed as detailed in Table 7. Figure 7 shows the general locality of H13216 as it relates to adjacent surveys. Comparisons were not performed against either H13219 or H13220, as processing efforts for those sheets were still on-going. Refer to Separates II for details about how the junction analysis was performed and a complete discussion of the analysis and tabular results.

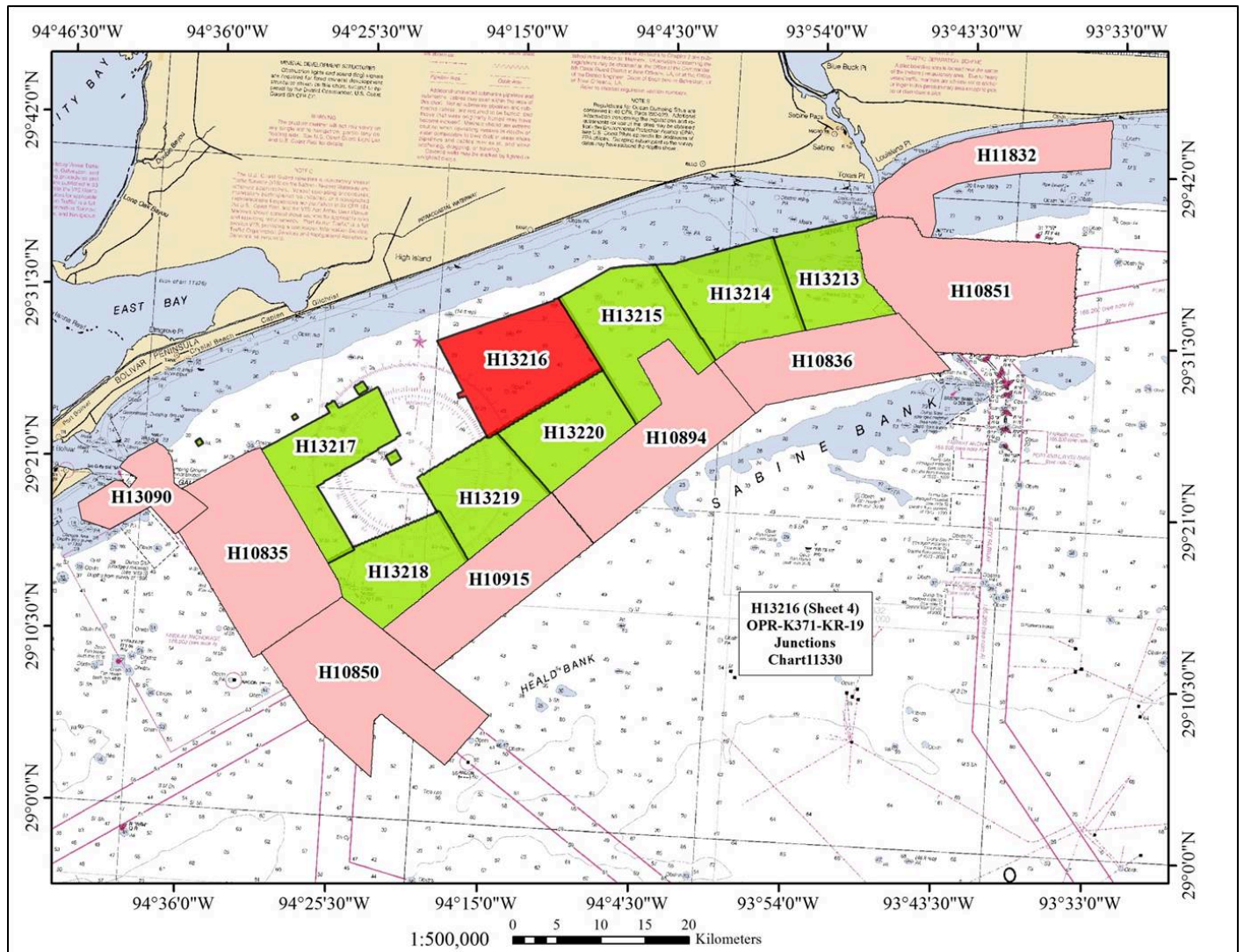


Figure 7: General Locality of H13216 with Junctioning Surveys

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H13215	1:40000	2019	Leidos	E

*Table 9: Junctioning Surveys*

### H13215

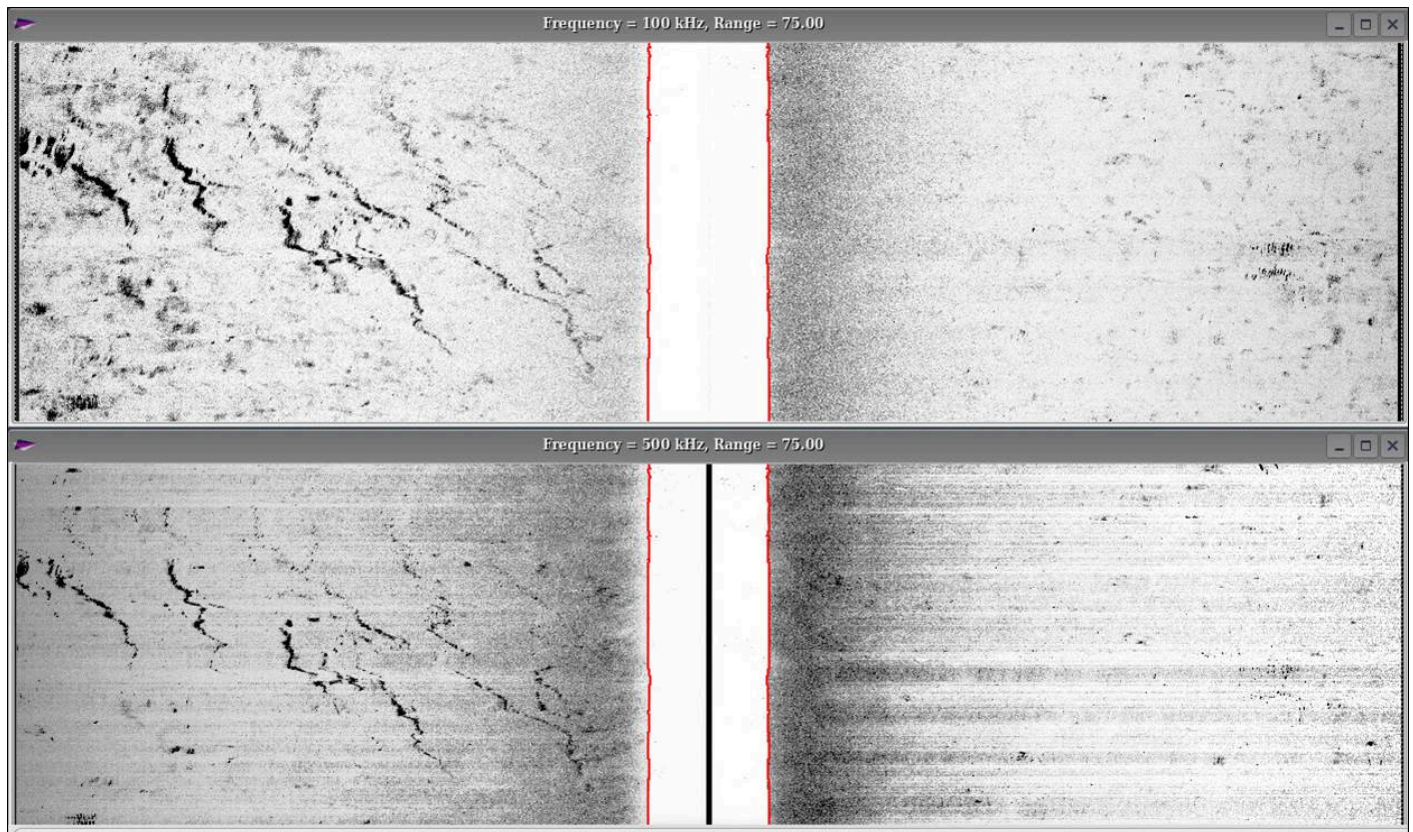
H13216 junctions with H13215 to the east; 100% of the comparisons agreed within  $\pm 0.172$  meters, below the calculated maximum allowable TVU of 0.525 meters.

#### **B.2.4 Sonar QC Checks**

Sonar system quality control checks were conducted as detailed in the DAPR and quality control checks conducted during H13216 are reported in Separates I.

#### **B.2.5 Equipment Effectiveness**

There were no conditions or deficiencies that affected equipment operational effectiveness.



*Figure 8: Sargassum Seaweed Visible in Side Scan Sonar Port Record*

### **B.2.6 Factors Affecting Soundings**

There were no other factors that affected corrections to soundings.

### **B.2.7 Sound Speed Methods**

Sound Speed Cast Frequency: On the M/V Atlantic Surveyor, the MVP30 was the primary system used to collect sound speed profile (SSP) data. Additionally, during temporary instances of MVP30 equipment down-time, AML Oceanographic Base-X2 instruments were used for the acquisition of SSP data. Refer to the DAPR for further information on the MVP30 and Base-X2 systems. SSP data were obtained at intervals frequent enough to meet depth accuracy requirements. Section 5.2.3.3 of the HSSD requires that if the sound speed measured at the sonar head differs by more than two meters/second from the commensurate profile data, then another cast shall be acquired. There were times when the sound speed values exceeded the two meters/second threshold due to the local temporal and tidal variability. During these times, several profiles

were acquired and reapplied in an effort to reduce these effects. The product of this effort resulted in the final data bearing no significant artifacts due to sound speed differences.

All sound speed profiles applied for online bathymetry data collection were acquired within 500 meters of the bounds of the survey area as specified in Section 5.2.3.3 of the HSSD.

Confidence checks of the sound speed profile casts were conducted by comparing at least two consecutive casts taken with different SSP sensors. Five sound speed confidence checks were conducted during H13216 and the results can be found in Separates II within the “Comparison Cast Log” section.

All individual SSP files are delivered with the H13216 data and are broken out into sub-folders, which correspond to the purpose of each cast. Also, all individual SSP files for H13216 have been concatenated into four separate files based on the purpose of the cast, provided in CARIS format files (.svp), and delivered under (H13216/Processed/SVP/CARIS\_SSP) on the delivery drive. In addition, sound speed data for the entire OPR-K371-KR-19 project will be submitted to NCEI following the NetCDF template format as specified in Section 8.3.6 of the HSSD.

### **B.2.8 Coverage Equipment and Methods**

All equipment and survey methods are detailed in the DAPR.

### **B.2.9 Multibeam Coverage Analysis**

Leidos chose to achieve the coverage requirement using 100% side scan sonar coverage with concurrent multibeam bathymetry. To achieve this coverage, the M/V Atlantic Surveyor used a towed Klein 3000 SSS set to 75-meter range scale. Mainscheme line spacing was set to 120 meters, which ensured 100% SSS coverage.

The HSSD Section 7.3.4 stated that 100% SSS coverage was insufficient to disprove a charted feature. Therefore, Leidos reviewed the Composite Source File (CSF), BSB charts, and ENC charts and completed an additional 100% SSS coverage, and resulting MBES coverage over assigned objects not found during survey in order to verify disproval. A disproval search radius was developed as specified in the Project Reference File (PRF), Final\_OPR-K371-KR-19\_PRF.000 (provided on 18 March 2019), or following best practices if not specified. The radius is documented within the H13216 S-57 FFF. For all assigned objects within the H13216 Statement of Work (SOW), each object’s achieved disproval data covered an area of at least the assigned disproval search radius.

The SABER Gapchecker program was used to flag MBES data gaps within the CUBE surface. Additionally, the entire surface was visually scanned for holidays at various points during the data processing effort. Additional survey lines were run to fill any holidays that were detected. A final review of the CUBE Depth surface of the H13216 one-meter PFM showed that there were no holidays as defined for complete coverage surveys in Section 5.2.2.3 of the HSSD.

The final H13216 CUBE PFM was examined for the number of soundings contributing to the chosen CUBE hypotheses for each node by running SABER's Frequency Distribution Tool on the Hypothesis Number of Soundings (Hyp. # Soundings) surface. The Hyp. # Soundings surface reports the number of soundings that were used to compute the chosen hypothesis. Analysis of the H13216 Hyp. # Soundings surface of the final H13216 one-meter PFM, revealed that 99.66% of all nodes contained five or more soundings; satisfying the requirements for complete coverage surveys, Option B, as specified in Section 5.2.2.3 of the HSSD.

## **B.3 Echo Sounding Corrections**

### **B.3.1 Corrections to Echo Soundings**

All data reduction procedures conform to those detailed in the DAPR.

### **B.3.2 Calibrations**

All sounding systems were calibrated as detailed in the DAPR.

## **B.4 Backscatter**

Side Scan Sonar (SSS) Coverage Analysis: For all details regarding SSS data processing, see the DAPR. Leidos chose to adhere to the coverage requirements in the Project Instructions using Complete Coverage, Option B (100% side scan sonar coverage with concurrent multibeam). The HSSD stated that 100% SSS coverage was insufficient to disprove a charted feature. Therefore, 100% SSS coverage was collected and verified for the entire survey area, and an additional 100% SSS coverage was collected over CSF assigned objects that were not found, to verify disproval. Leidos generated two separate coverage mosaics at one-meter cell size resolution as specified in Section 8.2.1 of the HSSD. The first 100% and second 100% disproval coverage mosaics were independently reviewed using tools in SABER to verify data quality and swath coverage. The SABER Gapchecker routine was used to flag data gaps within each of the 100% SSS coverage mosaics. Additionally, the entirety of each SSS surface was visually scanned for holidays at various points during the data processing effort. Additional survey lines were run to fill any holidays that were detected. Both coverage mosaics are determined to be complete and sufficient to meet the requirements contained within the Project Instructions and HSSD. Each 100 percent coverage mosaic is delivered as a single georeferenced raster file in floating point GeoTIFF format, as specified in Sections 8.2.1 and 8.3.3 in the HSSD.

Multibeam Echo Sounder Seafloor Backscatter: In accordance with the HSSD Section 6.2, Leidos collected MBES backscatter with all GSF data acquired. The MBES settings used were checked to ensure acceptable

quality standards were met and to mitigate acoustic saturation of the backscatter data. The MBES backscatter data acquired were written to the GSF in real-time by ISS-2000 and are delivered in the final GSF files for this sheet. Per HSSD Section 6.2.1, as the Project Instructions did not state to evaluate the backscatter data; backscatter data were not processed by Leidos and no additional products were produced.

## B.5 Data Processing

### B.5.1 Primary Data Processing Software

The following software program was the primary program used for bathymetric data processing:

Manufacturer	Name	Version
Leidos	SABER	5.4.0.22.3

*Table 10: Primary bathymetric data processing software*

The following software program was the primary program used for imagery data processing:

Manufacturer	Name	Version
Leidos	SABER	5.4.0.22.3

*Table 11: Primary imagery data processing software*

The following Feature Object Catalog was used: NOAA Extended Attribute File V5-4.

The primary data processing software used for both bathymetry and imagery was SABER. There were no software configuration changes after the DAPR was submitted.

### B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H13216_MB_1m_MLLW_Final-1_of_3	BAG	1 meters	13.060 meters - 13.942 meters	N/A	Complete Coverage, Option B (100% side scan sonar)

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
					coverage with concurrent multibeam)
H13216_MB_1m_MLLW_Final-2_of_3	BAG	1 meters	10.924 meters - 13.563 meters	N/A	Complete Coverage, Option B (100% side scan sonar coverage with concurrent multibeam)
H13216_MB_1m_MLLW_Final-3_of_3	BAG	1 meters	10.753 meters - 12.431 meters	N/A	Complete Coverage, Option B (100% side scan sonar coverage with concurrent multibeam)
H13216_SSSAB_1m_100kHz_1of2	SSS Mosaic (.tif)	1 meters	0.00 meters - 0.00 meters	N/A	100% SSS
H13216_SSSAB_1m_100kHz_2of2	SSS Mosaic (.tif)	1 meters	0.00 meters - 0.00 meters	N/A	Second 100% SSS For Object Disproval

*Table 12: Submitted Surfaces*

Complete Coverage Section 5.2.2.3 of the HSSD requires one-meter node resolution for depths ranging from zero meters to 20 meters. Leidos generated CUBE PFM grids for H13216 at one-meter resolution.

The CUBE Depth surface of the final H13216 one-meter PFM (containing all valid depth data) was used to assess and document multibeam survey coverage. SABER populates the CUBE depth with either the node's chosen hypothesis or the depth of a feature or designated sounding set by the hydrographer, which overrides the chosen hypothesis. The range of CUBE depths of the H13216 one-meter PFM was from 10.753 meters (35.279 feet; 0.260 meters Total Vertical Uncertainty [TVU]) to 13.942 meters (45.741 feet; 0.260 meters TVU).

The final gridded bathymetry data are delivered as a Bathymetric Attributed Grid (BAG). The BAG files were exported from the CUBE PFM grid as detailed in the DAPR.



*For the purposes of grid management, the Branch has created a single H13216\_MB\_1m\_MLLW\_1of1.bag replacing the H13216\_MB\_1m\_MLLW\_Final-X\_of\_3 multibeam bathymetry grids submitted by the field unit. The H13216\_MB\_1m\_MLLW\_1of1.bag is the final deliverable to be used in charting products and for archive.*

## C. Vertical and Horizontal Control

Additional information discussing the vertical and horizontal control for this survey can be found in the DAPR.

### C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

#### ERS Datum Transformation

The following ellipsoid-to-chart vertical datum transformation was used:

Method	Ellipsoid to Chart Datum Separation File
ERS via VDATUM	OPR-K371-KR-19_NAD83_VDatum_MLLW.cov

*Table 13: ERS method and SEP file*

Refer to the DAPR for details regarding the application of VDatum to the MBES data files. No final tide note was provided from NOAA Center for Operational Oceanographic Products and Services (CO-OPS). While a final tide note was not required, a final tide note has been provided by Leidos in Appendix I.

### C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD 83).

The projection used for this project is Universal Transverse Mercator (UTM) Zone 15.

### PPP

The vessel kinematic data (POS/MV files) were post-processed in Applanix POSPac software using the Applanix PP-RTX solution to generate the Smoothed Best Estimate of Trajectory (SBET) solutions which were applied through SABER to the multibeam data. Refer to the DAPR for additional information and for details regarding all antenna and transducer offsets. Any soundings with total horizontal uncertainties exceeding the maximum allowable IHO S-44 5th Edition Order 1a specifications were flagged as invalid and therefore were not used in the CUBE depth calculations.

## **D. Results and Recommendations**

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

The chart comparisons were conducted using a combination of SABER and CARIS' HIPS and SIPS.

United States Coast Guard (USCG) District 8 Local Notice to Mariners (LNM) publications were reviewed for changes subsequent to the date of the Project Instructions and before the end of survey (as specified in Section 8.1.4 of the HSSD). The LNM reviewed were from week 19/19 (27 March 2019) until week 50/19 (11 December 2019).

H13216 data met data accuracy standards and bottom coverage requirements. Leidos recommends updating the common areas of all charts using data from this survey. Charting recommendations for new features, and updates to charted features, are documented in the H13216 S-57 FFF. Additional charted objects such as submarine pipelines and platforms are discussed in later sections.

#### **D.1.1 Electronic Navigational Charts**

The following are the largest scale ENC's, which cover the survey area:

<b>ENC</b>	<b>Scale</b>	<b>Edition</b>	<b>Update Application Date</b>	<b>Issue Date</b>	<b>Preliminary?</b>
US5TX52M	1:80000	29	12/09/2019	12/09/2019	NO
US4TX71M	1:80000	37	11/08/2019	11/18/2019	NO

*Table 14: Largest Scale ENC's*

US5TX52M

ENC US4TX52M covers H13216 survey area from 094° 16' 18.10"W westward.

CUBE depths within H13216 were generally deeper than charted depths across the contemporaneous survey area, with observed depths generally less than 0.5m deeper than the charted depths (Figure 9). There were no depth contours on ENC US4TX52M that fell within the H13216 survey area.

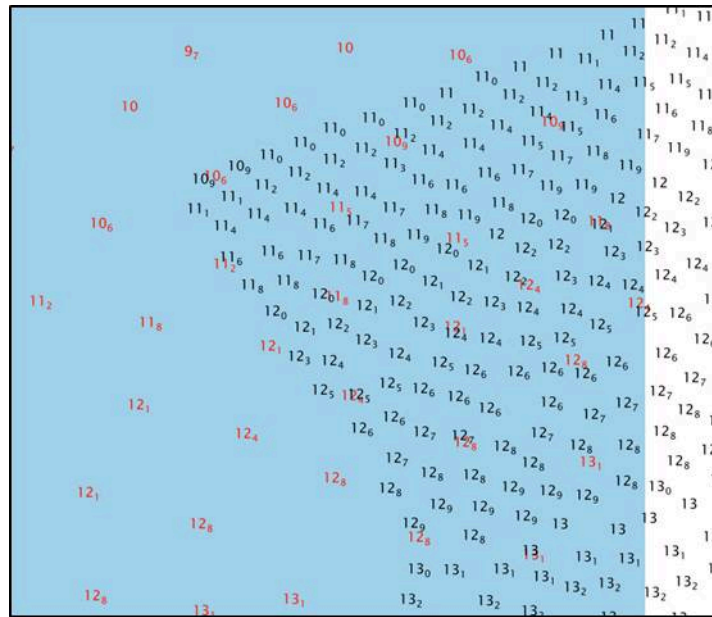


Figure 9: ENC US4TX52M Charted Soundings (red) with H13216 CUBE Depth Selected Soundings (black)

US4TX71M

ENC US4TX71M covers H13216 survey area from 094° 16' 18.10"W eastward.

CUBE depths within H13216 were generally deeper than charted depths across the contemporaneous survey area, with observed depths generally less than 0.5m deeper than the charted depths (Figure 10). There were no depth contours on ENC US4TX71M that fell within the H13216 survey area.

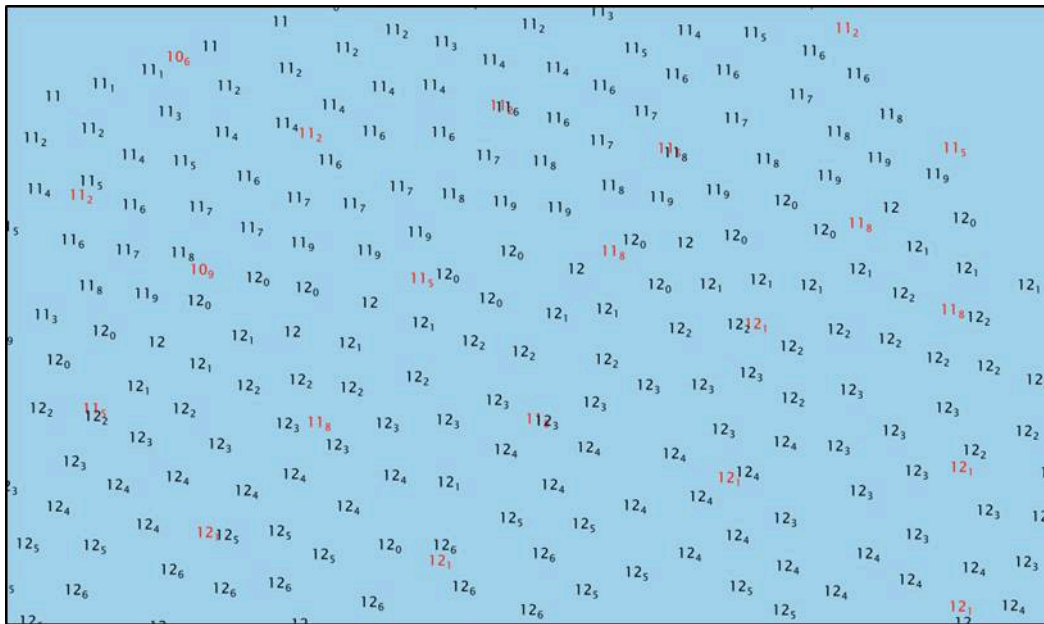


Figure 10: ENC US4TX71M Charted Soundings (red) with H13216 CUBE Depth Selected Soundings (black)

### D.1.2 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

### D.1.3 Charted Features

There were three charted features assigned in the final CSF (Final\_OPR-K371-KR-19\_CSF.000) that fell within the SOW of H13216. See the H13216 S-57 FFF for all details and recommendations regarding these features.

The three charted objects were all on ENC US4TX71M. There was one charted obstruction with an assigned search radius of at least 460 meters. This was covered with 200% SSS and resulting MBES data, no objects were identified within the assigned area. There were two wrecks, both charted as dangerous always under water/submerged and each with an assigned search radius of at least 460 meters. Each of the wreck disproval areas were covered with 200% SSS and resulting MBES data and no wrecks were identified within the assigned areas. Within one wreck area, a small object, 1.2 meters by 1.2 meters with a height of 0.62 meters, was observed in MBES and SSS. In the second wreck area, linear returns were observed in the SSS low frequency record only. Per HSSD guidance (Section 7.1), the survey data in both of these cases did not support classification that the objects present were wrecks or warranted charting; therefore no features were set. SSS contacts, however, were retained in the data and are included in the H13216\_SSCon.000.

Refer to the H13216 S-57 FFF for all the details and recommendations regarding the charted features.

#### D.1.4 Uncharted Features

See the H13216 S-57 FFF for all the details and recommendations regarding new uncharted features investigated.

#### D.1.5 Shoal and Hazardous Features

There were no significant shoals or hazardous features within the area covered by this survey other than those discussed in Section D.1.4.

Leidos submitted three DTONs for H13216. Each DTON was submitted in S-57 format to the Atlantic Hydrographic Branch (AHB).

1. DTON 01 was submitted on 16 July 2019, for an uncharted platform. This DTON was submitted to Nautical Data Brach (NDB) and Marine Chart Division (MCD) on 17 July 2019.
2. DTON 02 was submitted on 31 July 2019, for an uncharted platform with information concerning a charted platform that was present but found to be in a damaged and ruined state. This DTON was submitted to NDB and MCD on 01 August 2019 for both platforms. Refer to Section D.2.5 for further discussion on these platforms.
3. DTON 03 was submitted on 16 December 2019 contained eight separate exposed uncharted pipelines which were submitted as DTONs in accordance with HSSD Section 1.6.2.4. This DTON was not submitted to NDB and MCD for chart application based upon the length of the exposed pipeline sections and height above the seafloor. Instead, this information was submitted to BOEM/BSEE and the GOM Navigation Manager on 17 December 2019 to inform proper authorities.

A copy of the email correspondence for Leidos' submissions of H13216 DTON Reports, as well as the DTON recommendation file and verification email from NDB, are included within Appendix II of this Descriptive Report. Figure 11 details the submitted DTONs and the associated Feature number and object class in the S-57 FFF.

DTON Report Name	Date Submitted to AHB	AHB Submitted to NDB and MCD	NDB Registration	Feature Number(s)	S-57 Object Class in the S-57 FFF
H13216_DT0N_01.000	2019-07-16	2019-07-17	DD-31121	11	OFSPFL
H13216_DT0N_02.000	2019-07-31	2019-08-01	DD-31198	12 and 13	OFSPFL
H13216_DT0N_03.000	2019-12-16	2019-12-17	N/A	01 through 08	PIPSOL

Figure 11: DTON Reports

### **D.1.6 Channels**

There were no channels within the area covered by this survey.

### **D.1.7 Bottom Samples**

In accordance with both the Project Instructions and Section 7.2.3 of the HSSD, bottom characteristics were obtained for H13216. Bottom characteristics were acquired at the two locations assigned in the PRF by NOAA. Leidos did not modify the bottom sample locations from the location proposed by NOAA in the PRF. Bottom characteristics collected during H13216 are included in the H13216 S-57 FFF, named H13216\_FFF.000, within the Seabed Area (SBDARE) object, and are classified according to the requirements set forth in the HSSD. In addition, images of the sediment obtained for each bottom sample are referenced in the H13216\_FFF.000 and are included on the delivery drive under the folder H13216/Processed/Multimedia.

## **D.2 Additional Results**

### **D.2.1 Shoreline**

All features in the CSF within the assigned Survey Limits of H13216 were resolved. There were no assigned features inshore of the NALL.

### **D.2.2 Aids to Navigation**

There were no aids to navigation that fell within this survey area.

### **D.2.3 Overhead Features**

There were no overhead features within this survey area.

### **D.2.4 Submarine Features**

Refer to Section D.1.5, as H3216 DTON 03 contained eight sections of exposed uncharted pipelines. These pipelines are included in the S-57 FFF.

One seep was found within the bounds of H13216; in accordance with HSSD Section 1.7, the seep was submitted in a Seep Report. The email correspondence for Leidos' submission of the H13216 Seep Report is included within Appendix II of this Descriptive Report.

The seep was identified within the H13216 MBES data to have a form and morphology typical of ascending gas or bubble plumes. The seep was associated with a section of uncharted exposed pipeline (DTON 03,

Feature 05). The MBES data associated with the seep have been flagged as invalid and therefore were not used in the CUBE depth calculations.

### D.2.5 Platforms

There were nine assigned offshore platform objects in the CSF, Final\_OPR-K371-KR-19\_CSF.000, which fell within the SOW for H13216. All of the assigned platforms were charted on ENC US4TX71M.

Investigation requirements for assigned platforms within the CSF, Final\_OPR-K371-KR-19\_CSF.000, stated to “Visually confirm feature object existence. If feature exists, include in FFF with descrp=retain. If feature is not visible, conduct a feature disproval (Section 7.3.4).”

Of the nine charted platforms assigned within the survey area for H13216, two platforms were visible above the waterline. The remaining seven assigned charted platforms were not found during survey operations therefore disproval surveys were conducted. The disproval surveys were conducted by collecting 200% SSS and resulting MBES over an area centered at the CSF platform position with a radius of at least 80 meters. Within the disproval radii, there was no evidence of a platform in the SSS or MBES data.

For platforms visible above the waterline, the surveyed position was derived from the SSS data for H13216. Additionally, there were attribution revisions observed from survey data to data from the CSF. In conjunction with the CSF investigation requirements Leidos also followed direction from HSSD Section 7.5.2:

- “Update = Modification to attribution, geometry, and/or feature object class”

Final positions were derived from SSS data, therefore the positions within the S-57 FFF were retained from the position provided in the CSF. For these platforms, the descrp was set to Update; as there were attribution modifications observed during H13216. The attributes modified are documented within the S-57 FFF. Figure 12 details the position provided from the CSF as well as each position, when present, from the H13216 data.

Three additional platforms are included in the H13216\_FFF.000 which were either unassigned or did not exist in the final CSF. During survey operations on H13216, two uncharted platforms were discovered and submitted to AHB as DTON 01 and DTON 02. The platform submitted as H13216 DTON 01 is now charted on ENC US4TX52M and is included in the FFF (Feature 11) with the descrp field set to New as this platform did not exist in the CSF. DTON 02 consisted of an uncharted platform (Feature 13) which did not exist in the CSF, and a second charted platform (Feature 12) which was unassigned in the CSF, as it fell outside the H13216 SOW. During H13216 survey Feature 12 was observed to be in a dangerous state as it was unlit, damaged, and ruined leaning over towards the water surface. Both of the platforms from H13216 DTON 02 were forwarded to NDB, however at the time Leidos performed chart comparisons, they were not updated on ENC USTX52M. During Leidos’ review of the LNM, a platform discrepancy report representing the charted ruined platform was observed noting the status of Platform Union-196-1 as “HAZ NAV/LT EXT/SS INOP” with a LNM start week of 04/12. The position listed in the LNM was approximately 70 meters from the platform captured as Feature 12; therefore Leidos determined the LNM was a note regarding Feature 12. Within the S-57 FFF Feature 13 has the descrp field set to New since the platform did not exist in the CSF, and Feature 12 has the descrp field set to Update for attribution modifications observed during H13216. Refer to Section D.1.5 for additional details regarding DTON submission on H13216.

See the S-57 FFF, named H13216\_FFF.000, Offshore Platform (OFSPLF) objects, for details and charting recommendations on the charted platforms.

Position From OPR-K371-KR-19_CSF.000		Position Derived From Survey		Feature Number	S-57 FFF descrip value
Latitude	Longitude	Latitude	Longitude		
29° 28' 03.94" N	094° 13' 25.79" W	NOT PRESENT		N/A	DELETE
29° 29' 58.36" N	094° 12' 43.06" W	NOT PRESENT		N/A	DELETE
29° 28' 45.79" N	094° 13' 18.08" W	NOT PRESENT		N/A	DELETE
29° 28' 56.75" N	094° 12' 07.20" W	NOT PRESENT		N/A	DELETE
29° 28' 49.69" N	094° 12' 37.33" W	29° 28' 50.57" N	094° 12' 37.95" W	09	UPDATE
29° 29' 17.99" N	094° 13' 46.34" W	NOT PRESENT		N/A	DELETE
29° 29' 11.80" N	094° 12' 52.94" W	NOT PRESENT		N/A	DELETE
29° 29' 04.00" N	094° 12' 43.92" W	29° 29' 03.17" N	094° 12' 45.51" W	10	UPDATE
29° 28' 45.61" N	094° 13' 14.74" W	NOT PRESENT		N/A	DELETE
N/A	N/A	29° 26' 38.48" N	094° 17' 41.34" W	11	NEW
29° 26' 11.26" N	094° 18' 14.69" W	29° 26' 10.21" N	094° 18' 16.50" W	12	UPDATE
N/A	N/A	29° 26' 16.36" N	094° 18' 13.40" W	13	NEW

Figure 12: Platforms within H13216 SOW

### D.2.6 Ferry Routes and Terminals

No ferry routes or terminals exist within this survey area.

### D.2.7 Abnormal Seafloor and/or Environmental Conditions

No abnormal seafloor or environmental conditions, as defined in Section 8.1.4 of the HSSD, exist within this survey area except as previously discussed in Section B.2.5 of this report.

### D.2.8 Construction and Dredging

No construction or dredging exists for this survey area.

### D.2.9 New Survey Recommendation

No new survey recommendations are made for the area surrounding this survey area.



### **D.2.10 Designated Soundings**

Separate flags exist in the Generic Sensor Format (GSF) for a designated sounding and feature. During data analysis, designated soundings or feature flags are used to help better preserve the shoalest sounding relative to the computed depth surface. All depths flagged as features and designated soundings override the CUBE best estimate of the depth in the final BAG files. Both the designated sounding and feature flags, as defined within GSF, are mapped to the same HDCS flag when ingested into CARIS (PD\_DEPTH\_DESIGNATED\_MASK). No GSF designated sounding flags or feature flags were set for H13216.

*One (1) designated sounding was added to the dataset at 9-30-05.381 N and 94-15-02.983 W where the finalized surface was not honoring a 0.60 m vertical rise in the sea floor.*

### **D.2.11 Final Feature S-57 File**

Included with the H13216 delivery is the S-57 FFF, H13216\_FFF.000. Details on how this file was generated and quality controlled can be found in the DAPR. The S-57 FFF delivered for H13216 contains millimeter precision for the value of sounding (VALSOU) attribute. As specified in Section 2.2 of the HSSD, the S-57 FFF is in the WGS84 datum and is unprojected with all depth units in meters. All significant and recommended for charting features found in H13216 are included within the S-57 FFF.

In accordance with the HSSD, Leidos addressed all assigned objects from the provided CSF S-57 file that fell within the bounds of H13216 in the S-57 FFF.

For each feature set within the H13216 data, a Feature Correlator Sheet was exported as an image file (.jpg) and is included in the S-57 FFF under the NOAA Extended Attribute field “images”.

### **D.2.12 Side Scan Sonar Contacts S-57 File**

Included with the H13216 delivery is the Side Scan Sonar Contact S-57 File, H13216\_SSCon.000. Details on how this file was generated and quality controlled can be found in the DAPR. As specified in Section 2.2 of the HSSD, the S-57 file is in the WGS84 datum and is unprojected with all depth units in meters.

Side scan sonar contacts were investigated and confirmed using SABER Contact Review. All side scan contacts are retained within the Side Scan Sonar Contact S-57 File. For each contact included in this S-57 file, a JPEG image of the side scan contact is included under the NOAA Extended Attribute field “images”.

### **D.2.13 Coast Pilot Review Report**

In accordance with the Project Instructions and HSSD Section 8.1.3, a Coast Pilot Review was performed for OPR-K371-KR-19. Within the Coast Pilot Field Report (OPR-K371-KR-18CoastPilotReport.pdf) provided by NOAA to Leidos on 18 March 2019, it indicated that paragraphs 15 through 127 were relevant to the survey area of OPR-K371-KR-19 and there were no assigned investigation items. During survey, Leidos reviewed and updated the assigned and additional Coast Pilot paragraphs as possible for the survey area,

port of call, and areas frequently transited. Leidos downloaded Coast Pilot 5 Chapter 10 from the Coast Pilot website, 47th Edition of Coast Pilot 5, dated 17 November 2019. Recommendations were documented using the text from the 47th Edition and are marked following the HSSD Section 8.1.3. Leidos followed NOAA's strategy for designating omitted paragraphs as provided in the delivered Coast Pilot Field Report (OPR-K371-KR-18CoastPilotReport.pdf). Leidos submitted the Coast Pilot Field Report on 22 November 2019. The email correspondence for Leidos' submission of the Coast Pilot Review Report is included within the Project Correspondence.

#### **D.2.14 Inset Recommendation**

No inset recommendations are made for the area covered by this survey


## E. Approval Sheet

As Chief of Party, field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

This Descriptive Report, all BAG files, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meets or exceeds requirements as set forth in the Hydrographic Surveys Specifications and Deliverables, Project Instructions, and Statement of Work. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required. Previously, or concurrently, submitted deliverables for OPR-K371-KR-19 are provided in the table below.

Report Name	Report Date Sent
OPR-K371-KR-19_Coast Pilot Review Report.pdf	2019-11-22
OPR-K371-KR-19_Marine_Species_Awareness_Training_Record.pdf	2019-11-22
OPR-K371-KR-19_DAPR.pdf	2019-12-06
H13213_DR.pdf	2019-12-06
H13214_DR.pdf	2019-12-13

Approver Name	Approver Title	Approval Date	Signature
Erin Markham	Lead Hydrographer	12/20/2019	Erin E Markham  <small>             Digitally signed by: Erin E. Markham              DN: CN = Erin E. Markham C = US              O = Leidos OU =              AO1427D0000016533F343A40000              0985              Date: 2019.12.20 16:54:17 -05'00'           </small>

## F. Table of Acronyms

<b>Acronym</b>	<b>Definition</b>
<b>AHB</b>	Atlantic Hydrographic Branch
<b>AST</b>	Assistant Survey Technician
<b>ATON</b>	Aid to Navigation
<b>AWOIS</b>	Automated Wreck and Obstruction Information System
<b>BAG</b>	Bathymetric Attributed Grid
<b>BASE</b>	Bathymetry Associated with Statistical Error
<b>CO</b>	Commanding Officer
<b>CO-OPS</b>	Center for Operational Products and Services
<b>CORS</b>	Continuously Operating Reference Station
<b>CTD</b>	Conductivity Temperature Depth
<b>CEF</b>	Chart Evaluation File
<b>CSF</b>	Composite Source File
<b>CST</b>	Chief Survey Technician
<b>CUBE</b>	Combined Uncertainty and Bathymetry Estimator
<b>DAPR</b>	Data Acquisition and Processing Report
<b>DGPS</b>	Differential Global Positioning System
<b>DP</b>	Detached Position
<b>DR</b>	Descriptive Report
<b>DTON</b>	Danger to Navigation
<b>ENC</b>	Electronic Navigational Chart
<b>ERS</b>	Ellipsoidal Referenced Survey
<b>ERTDM</b>	Ellipsoidally Referenced Tidal Datum Model
<b>ERZT</b>	Ellipsoidally Referenced Zoned Tides
<b>FFF</b>	Final Feature File
<b>FOO</b>	Field Operations Officer
<b>FPM</b>	Field Procedures Manual
<b>GAMS</b>	GPS Azimuth Measurement Subsystem
<b>GC</b>	Geographic Cell
<b>GPS</b>	Global Positioning System
<b>HIPS</b>	Hydrographic Information Processing System
<b>HSD</b>	Hydrographic Surveys Division

<b>Acronym</b>	<b>Definition</b>
<b>HSSD</b>	Hydrographic Survey Specifications and Deliverables
<b>HSTB</b>	Hydrographic Systems Technology Branch
<b>HSX</b>	Hypack Hysweep File Format
<b>HTD</b>	Hydrographic Surveys Technical Directive
<b>HVCR</b>	Horizontal and Vertical Control Report
<b>HVF</b>	HIPS Vessel File
<b>IHO</b>	International Hydrographic Organization
<b>IMU</b>	Inertial Motion Unit
<b>ITRF</b>	International Terrestrial Reference Frame
<b>LNM</b>	Linear Nautical Miles
<b>MBAB</b>	Multibeam Echosounder Acoustic Backscatter
<b>MCD</b>	Marine Chart Division
<b>MHW</b>	Mean High Water
<b>MLLW</b>	Mean Lower Low Water
<b>NAD 83</b>	North American Datum of 1983
<b>NALL</b>	Navigable Area Limit Line
<b>NTM</b>	Notice to Mariners
<b>NMEA</b>	National Marine Electronics Association
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NOS</b>	National Ocean Service
<b>NRT</b>	Navigation Response Team
<b>NSD</b>	Navigation Services Division
<b>OCS</b>	Office of Coast Survey
<b>OMAO</b>	Office of Marine and Aviation Operations (NOAA)
<b>OPS</b>	Operations Branch
<b>MBES</b>	Multibeam Echosounder
<b>NWLON</b>	National Water Level Observation Network
<b>PDBS</b>	Phase Differencing Bathymetric Sonar
<b>PHB</b>	Pacific Hydrographic Branch
<b>POS/MV</b>	Position and Orientation System for Marine Vessels
<b>PPK</b>	Post Processed Kinematic
<b>PPP</b>	Precise Point Positioning
<b>PPS</b>	Pulse per second

<b>Acronym</b>	<b>Definition</b>
<b>PRF</b>	Project Reference File
<b>PS</b>	Physical Scientist
<b>RNC</b>	Raster Navigational Chart
<b>RTK</b>	Real Time Kinematic
<b>RTX</b>	Real Time Extended
<b>SBES</b>	Singlebeam Echosounder
<b>SBET</b>	Smooth Best Estimate and Trajectory
<b>SNM</b>	Square Nautical Miles
<b>SSS</b>	Side Scan Sonar
<b>SSSAB</b>	Side Scan Sonar Acoustic Backscatter
<b>ST</b>	Survey Technician
<b>SVP</b>	Sound Velocity Profiler
<b>TCARI</b>	Tidal Constituent And Residual Interpolation
<b>TPU</b>	Total Propagated Uncertainty
<b>USACE</b>	United States Army Corps of Engineers
<b>USCG</b>	United States Coast Guard
<b>UTM</b>	Universal Transverse Mercator
<b>XO</b>	Executive Officer
<b>ZDF</b>	Zone Definition File

**APPENDIX I. TIDES AND WATER LEVELS****Field Tide Note**

A field tide note was not required for H13216.

**Final Tide Note**

Per the Project Instructions H13216, multibeam data were to be corrected to Mean Lower Low Water (MLLW) by utilizing ellipsoid referenced survey (ERS) techniques. Ellipsoid to chart datum transformation was accomplished through the use of the VDatum separation model. As the VDatum was used for the final datum transformation, no final tide note was provided nor required from NOAA.

The on-line times for acquisition of valid hydrographic data are presented in the Abstract Times of Hydrography (Table A-1).

**Abstract Times of Hydrography**

**Project:** OPR-K371-KR-19

**Registry No.:** H13216

**Contractor Name:** Leidos

**Date:** 20 December 2019

**Sheet Designation:** 4

**Inclusive Dates:** 04 June 2019 – 28 September 2019

Field work is complete.

<b>Begin Date</b>	<b>Begin Julian Day</b>	<b>Begin Time</b>	<b>End Date</b>	<b>End Julian Day</b>	<b>End Time</b>
04 June 2019	155	02:32:38	04 June 2019	155	22:01:30
06 July 2019	187	16:10:22	06 July 2019	187	23:59:59
07 July 2019	188	00:00:00	07 July 2019	188	23:59:59
08 July 2019	189	00:00:00	08 July 2019	189	23:59:59
09 July 2019	190	00:00:00	09 July 2019	190	23:59:59
10 July 2019	191	00:00:00	10 July 2019	191	23:59:59
11 July 2019	192	00:00:00	11 July 2019	192	20:13:42
18 July 2019	199	15:04:29	18 July 2019	199	23:59:59
19 July 2019	200	00:00:00	19 July 2019	200	11:54:24
22 July 2019	203	14:52:48	22 July 2019	203	15:36:57
03 August 2019	215	11:47:51	03 August 2019	215	12:28:04
27 September 2019	270	15:13:11	27 September 2019	270	23:59:59
28 September 2019	271	00:00:00	28 September 2019	271	04:50:42

*Table A-1: Abstract Times of Hydrography, H13216*

**Transmittal Letter to CO-OPS**

A transmittal letter to CO-OPS was not required for H13216.

**Request for Approved Tides/Water Levels Letter**

A “Request for Approved Tides/Water Levels” letter was not required for H13216.

**Other Correspondence Relating to Tides**

Please refer to the Project Correspondence directory for correspondence related to water levels for H13216.

- OPR-K371-KR-19\_CSF\_and\_VDatum.pdf
- OPR-K371-KR-19\_VDatum.pdf



## **APPENDIX II. SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE**

Refer to the Project Correspondence directory for copies of email exchanges between Leidos and NOAA, which concerned various aspects of survey, data processing, and submittal topics that encompassed either the entire OPR-K371-KR-19 project or multiple sheets.

This Appendix contains email exchanges unique to H13216. In addition, the following standalone files have been provided in the II\_Supplemental\_Survey\_Records\_Correspondence folder of the Descriptive Report Appendices:

- H13216\_Seep\_Images.zip

Note that correspondence is complete through 05:00 PM on 14 January 2020.

## **CORRESPONDENCE**

**From:** [OCS NDB - NOAA Service Account](#)  
**To:** [Castle E Parker](#)  
**Cc:** [AHB Chief](#); [Kathryn Pridgen - NOAA Federal](#); [Christina Fandel - NOAA Federal](#); [Tim Osborn](#); [Bernier, Alex T. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#); [Markham, Erin E. \[US-US\]](#); [\\_NOS OCS PBA Branch](#); [\\_NOS OCS PBB Branch](#); [\\_NOS OCS PBC Branch](#); [\\_NOS OCS PBD Branch](#); [\\_NOS OCS PBE Branch](#); [\\_NOS OCS PBG Branch](#); [Charles Porter - NOAA Federal](#); [Chris Libeau](#); [James M Crocker](#); [Ken Forster](#); [Kevin Jett - NOAA Federal](#); [Matt Kroll](#); [Michael Gaeta](#); [NSD Coast Pilot](#); [PHB Chief](#); [Tara Wallace](#); [William Winner](#)  
**Subject:** EXTERNAL: Fwd: H13216 DtoN #1: Uncharted Platform for NDB Submission (OPR-K371-KR-19)  
**Date:** Wednesday, July 17, 2019 10:50:46 AM  
**Attachments:** [H13216 DtoN 1 Uncharted-OFSPFL.zip](#)

---

DD-31121 has been registered by the Nautical Data Branch and directed to Products Branch G for processing.

The DtoN reported is a platform in the Gulf of Mexico, TX.

The following charts have been assigned to the record:

11323 kapp 126

11332 kapp 125

The following ENC has been assigned to the record:

US4TX52M

References:

H13216

OPR-K371-KR-19

This information was discovered by a NOAA contractor and was submitted by AHB.

Nautical Data Branch/[Marine Chart Division](#)/  
Office of Coast Survey/[National Ocean Service](#)/  
[National Oceanic and Atmospheric Administration](#)  
[United States Department of Commerce](#)  
Contact: [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)



----- Forwarded message -----

**From:** **Castle Parker - NOAA Federal** <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>

**Date:** Wed, Jul 17, 2019 at 8:10 AM

**Subject:** H13216 DtoN #1: Uncharted Platform for NDB Submission (OPR-K371-KR-19)

**To:** OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>

**Cc:** AHB Chief - NOAA Service Account <[ahb.chief@noaa.gov](mailto:ahb.chief@noaa.gov)>, Kathryn Pridgen - NOAA Federal <[kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov)>, Christina Fandel - NOAA Federal

<[christina.fandel@noaa.gov](mailto:christina.fandel@noaa.gov)>, Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>,

Bernier, Alex T. <[ALEX.T.BERNIER@leidos.com](mailto:ALEX.T.BERNIER@leidos.com)>, Donaldson, Paul L.

<[PAUL.L.DONALDSON@leidos.com](mailto:PAUL.L.DONALDSON@leidos.com)>, Bernier, Bridget W.

<[BRIDGET.W.BERNIER@leidos.com](mailto:BRIDGET.W.BERNIER@leidos.com)>, Markham, Erin <[ERIN.MARKHAM@leidos.com](mailto:ERIN.MARKHAM@leidos.com)>

Good day,

Please find attached compressed file for H13216 DtoN Report #1, containing one uncharted offshore production platform. The feature is submitted to Nautical Data Branch (NDB) and Marine Chart Division (MCD) and intended for chart application. The submitted feature is located approximately 27.7nm SW of Texas Point.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Respectfully,

Gene Parker

*Castle Eugene Parker*

*NOAA Office of Coast Survey*

*Atlantic Hydrographic Branch*

*Hydrographic Team Lead / Physical Scientist*

[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)

*office (757) 364-7472*

**From:** [Tim Osborn - NOAA Federal](#)  
**To:** [Castle Parker - NOAA Federal](#)  
**Cc:** [OCS NDB - NOAA Service Account](#); [AHB Chief - NOAA Service Account](#); [Kathryn Pridgen - NOAA Federal](#); [Christina Fandel - NOAA Federal](#); [Bernier, Alex T. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#); [Markham, Erin E. \[US-US\]](#)  
**Subject:** EXTERNAL: Re: H13216 DtoN #1: Uncharted Platform for NDB Submission (OPR-K371-KR-19)  
**Date:** Wednesday, July 17, 2019 8:40:51 AM

---

Thank you. Will forward.

On Jul 17, 2019, at 7:09 AM, Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)> wrote:

Good day,

Please find attached compressed file for H13216 DtoN Report #1, containing one uncharted offshore production platform. The feature is submitted to Nautical Data Branch (NDB) and Marine Chart Division (MCD) and intended for chart application. The submitted feature is located approximately 27.7nm SW of Texas Point.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Respectfully,  
Gene Parker

*Castle Eugene Parker  
NOAA Office of Coast Survey  
Atlantic Hydrographic Branch  
Hydrographic Team Lead / Physical Scientist  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
office (757) 364-7472*

<H13216\_DtoN\_1\_Uncharted-OFSPFL.zip>

**From:** [Castle Parker - NOAA Federal](#)  
**To:** [OCS NDB - NOAA Service Account](#)  
**Cc:** [AHB Chief - NOAA Service Account](#); [Kathryn Pridgen - NOAA Federal](#); [Christina Fandel - NOAA Federal](#); [Tim Osborn - NOAA Federal](#); [Bernier, Alex T. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#); [Markham, Erin E. \[US-US\]](#)  
**Subject:** EXTERNAL: H13216 DtoN #1: Uncharted Platform for NDB Submission (OPR-K371-KR-19)  
**Date:** Wednesday, July 17, 2019 8:12:03 AM  
**Attachments:** [H13216 DtoN 1 Uncharted-OFSPFL.zip](#)

---

Good day,

Please find attached compressed file for H13216 DtoN Report #1, containing one uncharted offshore production platform. The feature is submitted to Nautical Data Branch (NDB) and Marine Chart Division (MCD) and intended for chart application. The submitted feature is located approximately 27.7nm SW of Texas Point.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Respectfully,  
Gene Parker

*Castle Eugene Parker*  
*NOAA Office of Coast Survey*  
*Atlantic Hydrographic Branch*  
*Hydrographic Team Lead / Physical Scientist*  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
*office (757) 364-7472*

**From:** [Bernier, Alex T. \[US-US\]](#)  
**To:** [ahb.dton@noaa.gov](mailto:ahb.dton@noaa.gov); [kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov); [Castle.E.Parker@noaa.gov](mailto:Castle.E.Parker@noaa.gov)  
**Cc:** [Evans, Rhodri E. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#); [Markham, Erin E. \[US-US\]](#)  
**Subject:** OPR-K371-KR-19 Danger to Navigation Report 01 for H13216  
**Date:** Tuesday, July 16, 2019 3:28:28 PM  
**Attachments:** [image001.png](#)  
[H13216 DTON 01.zip](#)

---

Please find attached one Danger to Navigation Report:

- H13216 DTON #1

The files for the DTON submission are provided within a single zip folder containing:

- One (1) S-57 file (\*.000)
- Image files that are referenced within the S-57 file (\*.jpg)

Please note that the submitted DTON is contains one feature which is an uncharted offshore platform.

Please feel free to contact us if there are any questions with the attached file.

Thank you,

**Alex Bernier | Leidos**

Lead Hydrographer | Marine Scientist  
Marine Survey & Engineering Solutions  
office: 401.848.4726  
mobile: 508.494.3485  
[alex.t.bernier@leidos.com](mailto:alex.t.bernier@leidos.com) | [leidos.com](http://leidos.com)



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**From:** [OCS NDB - NOAA Service Account](#)  
**To:** [Castle E Parker](#)  
**Cc:** [AHB Chief](#); [Tim Osborn](#); [Kathryn Pridgen - NOAA Federal](#); [Christina Fandel - NOAA Federal](#); [NOS OCS PBA Branch](#); [NOS OCS PBB Branch](#); [NOS OCS PBC Branch](#); [NOS OCS PBD Branch](#); [NOS OCS PBE Branch](#); [NOS OCS PBG Branch](#); [Charles Porter - NOAA Federal](#); [Chris Libeau](#); [James M Crocker](#); [Ken Forster](#); [Kevin Jett - NOAA Federal](#); [Matt Kroll](#); [Michael Gaeta](#); [NSD Coast Pilot](#); [PHB Chief](#); [Tara Wallace](#); [William Winner](#)  
**Subject:** Fwd: H13216 DtoN #2 submission to NDB (OPR\_K371-KR-19)  
**Date:** Thursday, August 1, 2019 4:32:21 PM

---

DD-31198 has been registered by the Nautical Data Branch and directed to Products Branch G for processing.

The DtoNs features reported are two platforms in the Gulf of Mexico, TX.

The following charts have been assigned to the record:

11323 kapp 126

11332 kapp 125

The following ENC has been assigned to the record:

US4TX52M

References:

H13216

OPR-K371-KR-19

This information was discovered by a NOAA contractor and was submitted by AHB.

Nautical Data Branch/[Marine Chart Division](#)/  
 Office of Coast Survey/[National Ocean Service](#)/  
[National Oceanic and Atmospheric Administration](#)  
[United States Department of Commerce](#)  
 Contact: [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)



----- Forwarded message -----

**From:** **Castle Parker - NOAA Federal** <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>

**Date:** Thu, Aug 1, 2019 at 11:40 AM

**Subject:** H13216 DtoN #2 submission to NDB (OPR\_K371-KR-19)

**To:** OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>

**Cc:** AHB Chief - NOAA Service Account <[ahb.chief@noaa.gov](mailto:ahb.chief@noaa.gov)>, Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>, Kathryn Pridgen - NOAA Federal <[kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov)>, Christina Fandel - NOAA Federal <[christina.fandel@noaa.gov](mailto:christina.fandel@noaa.gov)>

Good day,

Please find attached compressed file for H13216 DtoN Report #2, containing one uncharted offshore production platform, and a second unlit platform in ruins. The feature is submitted

to Nautical Data Branch (NDB) and Marine Chart Division (MCD) and intended for chart application. The submitted feature is located approximately 7.85nm SSE of High Island, Texas.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Respectfully,

Gene Parker

*Castle Eugene Parker*

*NOAA Office of Coast Survey*

*Atlantic Hydrographic Branch*

*Hydrographic Team Lead / Physical Scientist*

[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)

*office (757) 364-7472*



**From:** [Castle Parker - NOAA Federal](#)  
**To:** [Bernier, Alex T. \[US-US\]](#)  
**Cc:** [Kathryn Pridgen - NOAA Federal](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#); [Markham, Erin E. \[US-US\]](#)  
**Subject:** EXTERNAL: FW: H13216 DtoN #2 submission to NDB (OPR\_K371-KR-19)  
**Date:** Thursday, August 1, 2019 11:46:27 AM  
**Attachments:** [H13216 DtoN 2.zip](#)

---

Alex,

H13216 DtoN 2 has been submitted. I forgot to include Leidos personnel on the submission. Below is the submission email.

Regards,

Gene

*Castle Eugene Parker*  
*NOAA Office of Coast Survey*  
*Atlantic Hydrographic Branch*  
*Hydrographic Team Lead / Physical Scientist*  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
*office (757) 364-7472*

---

**From:** Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>  
**Sent:** Thursday, August 1, 2019 11:39 AM  
**To:** OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>  
**Cc:** AHB Chief - NOAA Service Account <[ahb.chief@noaa.gov](mailto:ahb.chief@noaa.gov)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>; Kathryn Pridgen - NOAA Federal <[kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov)>; Christina Fandel - NOAA Federal <[christina.fandel@noaa.gov](mailto:christina.fandel@noaa.gov)>  
**Subject:** H13216 DtoN #2 submission to NDB (OPR\_K371-KR-19)

Good day,

Please find attached compressed file for H13216 DtoN Report #2, containing one uncharted offshore production platform, and a second unlit platform in ruins. The feature is submitted to Nautical Data Branch (NDB) and Marine Chart Division (MCD) and intended for chart application. The submitted feature is located approximately 7.85nm SSE of High Island, Texas.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review and submission. The contents of the attached file were generated at AHB. The attached file contains a DtoN Letter (PDF), associated image files, and a Pydro XML file.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Respectfully,

Gene Parker

*Castle Eugene Parker*  
*NOAA Office of Coast Survey*  
*Atlantic Hydrographic Branch*  
*Hydrographic Team Lead / Physical Scientist*  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
*office (757) 364-7472*

**From:** [Bernier, Alex T. \[US-US\]](#)  
**To:** [ahb.dton@noaa.gov](mailto:ahb.dton@noaa.gov); [kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov); [Castle.E.Parker@noaa.gov](mailto:Castle.E.Parker@noaa.gov)  
**Cc:** [Evans, Rhodri E. \[US-US\]](#); [Donaldson, Paul L. \(PAUL.L.DONALDSON@leidos.com\)](mailto:Donaldson, Paul L. (PAUL.L.DONALDSON@leidos.com)); [Bernier, Bridget W. \[US-US\]](#); [Markham, Erin](#)  
**Subject:** Email 2 of 2: OPR-K371-KR-19 Danger to Navigation Report 02 for H13216 and Additional Info For a Ruined Charted OFSPLF  
**Date:** Wednesday, July 31, 2019 3:28:00 PM  
**Attachments:** [H13216\\_FIO\\_Ruined\\_Charted\\_OFSPLF\\_01.zip](#)  
[image001.png](#)

---

Good day,

The information being provided below is being sent within two separate emails due to email file size limitations.

Please find attached one Danger to Navigation Report for H13216 DTON #2. The submitted DTON contains one feature which is an uncharted offshore platform. The files for the DTON submission are provided within a single zip folder (H13216\_DTON02.zip) containing:

- One (1) S-57 file (H13216\_DTON02.000)
- Image files that are referenced within the S-57 file (\*.jpg)

Additionally, please find attached a separate report for a charted offshore platform found to exist in a damaged / ruined state near the site of the submitted H13216 DTON #2. This is not being submitted as a DTON as this platform was found approximately in its charted location, however, the attached information is being forwarded at this time due to the observed condition of the offshore platform. This additional report is provided within a single zip folder (H13216\_FIO\_Ruined\_Charted\_OFSPLF\_01.zip) containing:

- One (1) S-57 file (H13216\_FIO\_Ruined\_Charted\_OFSPLF\_01.000)
- Image files that are referenced within the S-57 file (\*.jpg)

Please feel free to contact us if there are any questions with the attached files.

Thank you,

**Alex Bernier | Leidos**

Lead Hydrographer | Marine Scientist  
Marine Survey & Engineering Solutions  
office: 401.848.4726  
mobile: 508.494.3485  
[alex.t.bernier@leidos.com](mailto:alex.t.bernier@leidos.com) | [leidos.com](http://leidos.com)



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**From:** [Bernier, Alex T. \[US-US\]](#)  
**To:** [ahb.dton@noaa.gov](mailto:ahb.dton@noaa.gov); [kathryn.pridgen@noaa.gov](mailto:kathryn.pridgen@noaa.gov); [Castle.E.Parker@noaa.gov](mailto:Castle.E.Parker@noaa.gov)  
**Cc:** [Evans, Rhodri E. \[US-US\]](#); [Donaldson, Paul L. \(PAUL.L.DONALDSON@leidos.com\)](mailto:Donaldson, Paul L. (PAUL.L.DONALDSON@leidos.com)); [Bernier, Bridget W. \[US-US\]](#); [Markham, Erin](#)  
**Subject:** Email 1 of 2: OPR-K371-KR-19 Danger to Navigation Report 02 for H13216 and Additional Info For a Ruined Charted OFSPLF  
**Date:** Wednesday, July 31, 2019 3:27:00 PM  
**Attachments:** [H13216\\_DTON02.zip](#)  
[image001.png](#)

---

Good day,

The information being provided below is being sent within two separate emails due to email file size limitations.

Please find attached one Danger to Navigation Report for H13216 DTON #2. The submitted DTON contains one feature which is an uncharted offshore platform. The files for the DTON submission are provided within a single zip folder (H13216\_DTON02.zip) containing:

- One (1) S-57 file (H13216\_DTON02.000)
- Image files that are referenced within the S-57 file (\*.jpg)

Additionally, please find attached a separate report for a charted offshore platform found to exist in a damaged / ruined state near the site of the submitted H13216 DTON #2. This is not being submitted as a DTON as this platform was found approximately in its charted location, however, the attached information is being forwarded at this time due to the observed condition of the offshore platform. This additional report is provided within a single zip folder (H13216\_FIO\_Ruined\_Charted\_OFSPFL\_01.zip) containing:

- One (1) S-57 file (H13216\_FIO\_Ruined\_Charted\_OFSPFL\_01.000)
- Image files that are referenced within the S-57 file (\*.jpg)

Please feel free to contact us if there are any questions with the attached files.

Thank you,

**Alex Bernier | Leidos**

Lead Hydrographer | Marine Scientist  
Marine Survey & Engineering Solutions  
office: 401.848.4726  
mobile: 508.494.3485  
[alex.t.bernier@leidos.com](mailto:alex.t.bernier@leidos.com) | [leidos.com](http://leidos.com)



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**From:** [Castle Parker - NOAA Federal](#)  
**To:** [pipelines@bsee.gov](mailto:pipelines@bsee.gov); [Tim Osborn - NOAA Federal](#)  
**Cc:** [AHB Chief - NOAA Service Account](#); [Kathryn Pridgen - NOAA Federal](#); [Markham, Erin E. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Alex T. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#)  
**Subject:** EXTERNAL: H13216 Exposed/Unburied Pipeline Section Report  
**Date:** Tuesday, December 17, 2019 8:26:24 AM  
**Attachments:** [H13216 Exposed-Unburied Pipeline Sections Report.pdf](#)

---

Good day,

Please find attached report concerning eight uncharted pipeline sections that are exposed or unburied. The exposed pipeline sections were observed within the H13216 survey data and imagery and are associated with project OPR-K371-KR-19. This report is in response to survey protocol in notifying the proper authorities. The features are not submitted to Nautical Data Branch (NDB) and Marine Chart Division (MCD) for chart application based upon the length of the expose pipeline section and the height above the sea floor which does not pose a hazard to surface navigation.

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review and submission. The contents of the attached report were generated at AHB.

If you have any questions, please contact me via email or phone 757-364-7472. Thank you for your assistance with this matter.

Respectfully,  
Gene Parker

*Castle Eugene Parker*  
*NOAA Office of Coast Survey*  
*Atlantic Hydrographic Branch*  
*Hydrographic Team Lead / Physical Scientist*  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
*office (757) 364-7472*

**From:** [Markham, Erin E. \[US-US\]](#)  
**To:** [ahb.dton@noaa.gov](mailto:ahb.dton@noaa.gov); [Kathryn Pridgen - NOAA Federal](#); [Gene Parker - NOAA Federal](#)  
**Cc:** [Evans, Rhodri E. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Alex T. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#)  
**Subject:** OPR-K371-KR-19 Danger to Navigation Report 03 for H13216  
**Date:** Monday, December 16, 2019 4:28:41 PM  
**Attachments:** [H13216 DTON 03.zip](#)  
[image001.png](#)

---

*Leidos Proprietary*

Please find attached one Danger to Navigation (DTON) Report:

- H13216 DTON 03

The files for the DTON submission are provided within a single zip folder containing:

- One (1) S-57 file (\*.000)
- 31 Image files (\*.jpg) that are referenced withing the S-57 file

Please note that the submitted DTON contains eight uncharted exposed pipelines (PIPSOL), which are represented as line objects. Leidos is submitting this DTON report per HSSD, Section 1.6.2.4, that "All uncharted pipelines shall be reported directly to NOAA using the process described in Section 1.6.3."

Please feel free to contact us if there are any questions with the attached file.

**Erin Markham | Leidos**

Hydrographer

Marine Survey & Engineering Solutions

office: 401.848.4707

mobile: 914.282.8377

[erin.e.markham@leidos.com](mailto:erin.e.markham@leidos.com)



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# H13216 DtoN #1: Uncharted Offshore Platform

**Registry Number:** H13216  
**State:** Texas  
**Locality:** Port Arthur, TX  
**Sub-locality:** 8NM South of Clam Lake  
**Project Number:** OPR-K371-KR-19  
**Survey Date:** 07/10/2019

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11323	62nd	12/01/2006	1:80,000 (11323_1)	[L]NTM: ?
11332	33rd	01/01/2013	1:80,000 (11332_1)	USCG LNM: 6/4/2019 (6/18/2019) NGA NTM: 9/14/2013 (7/6/2019)

\* 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	H13216 DtoN 1: Uncharted Offshore Platform	GP	[None]	29° 26' 38.1" N	094° 17' 40.9" W	---

## Marine Species Awareness Training Record

In accordance with the Hydrographic Surveys Specifications and Deliverables (HSSD) March 2019 Section 1.5, below is a record of staff who participated in survey work for Leidos under NOAA contract EA-133C-14-CQ-0033, project number OPR-K371-KR-19, Task Order 0005 (Port Arthur Traffic Lanes). Individuals conducted training prior to the start of the filed season; new personnel conducted training upon arrival.

### Marine Species Awareness Training Record

Name	Organization	Date
Jason Infantino	Leidos	03/22/2019
Dorena Vogel	Leidos	03/22/2019
Christopher Englert	Leidos	03/22/2019
Joshua Saunders	Leidos	03/22/2019
Capt. Chris Sevastakis	Divemasters	03/23/2019
Capt. Bernie Borrelli	Divemasters	03/23/2019
Capt. Henry Dollman	Divemasters	03/23/2019
Matthew Spears	Divemasters	03/23/2019
Sean Davies	Divemasters	03/23/2019
Jeffrey Adams	Leidos	03/25/2019
Allison Weide	Leidos	03/25/2019
Lucas Cappellini	Leidos	03/25/2019
Richard Nadeau	Leidos	03/26/2019
Paul Donaldson	Leidos	03/26/2019
Alex Bernier	Leidos	03/26/2019
Stewart Kaczynski	Leidos	03/27/2019
Peter Reheis	Leidos	03/27/2019
Michael Cole	Leidos	03/29/2019
Erin Markham	Leidos	04/02/2019
Timothy Mayer	Leidos	04/01/2019
Daniel McGovern	Leidos	04/04/2019
Lisa Hill	OARS	04/19/2019
Veronica Holton	OARS	05/11/2019

<b>Name</b>	<b>Organization</b>	<b>Date</b>
Brian Biggert	OARS	07/06/2019
Darina DeBenedictis	OARS	07/06/2019
Roland Brennan	OARS	07/27/2019
Capt. Fred Derry	Divemasters	08/07/2019





**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
Office of Marine and Aviation Operations  
NOAA Ship *Fairweather* (S220)  
1010 Stedman Street, Ketchikan, Alaska 99901

Date: 11/05/2019

MEMORANDUM FOR: Rod Evans  
Leidos, Inc.

FROM: Kathryn Pridgen, NOAA  
Project Manager, Hydrographic Surveys Division Operations Branch  
OPR-K371-KR-19 Port Arthur Traffic Lanes

SUBJECT: Request – 2019 Hydrographic Survey Specifications and Deliverables

At Leidos' request, I, Kathryn Pridgen, as Project Manager and COR, on behalf of HSD OPS, allow the use of the 2019 Hydrographic Survey Specifications and Deliverables (HSSD) in lieu of the 2018 Hydrographic Survey Specifications and Deliverables as specified in the project instructions for this project, OPR-K371-KR-19 Port Arthur Traffic Lanes.

Justification

This will allow the projects deliverables to be submitted using the most up to date specifications and requirements as outlined in the 2019 version of the HSSD.

PRIDGEN.KATHRYN.GR  
ABOWSKI.1392550549  
Digitally signed by PRIDGEN.KATHRYN.GRABOWSKI.  
1392550549  
Date: 2019.11.05 13:56:54 -05'00'

Kathryn Pridgen  
Project Manager and COR, NOAA  
Hydrographic Survey Specifications and Deliverables



**From:** [Markham, Erin E. \[US-US\]](#)  
**To:** [NODC.submissions@noaa.gov](mailto:NODC.submissions@noaa.gov)  
**Cc:** [Kathryn Pridgen - NOAA Federal](#); [Evans, Rhodri E. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Alex T. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#)  
**Subject:** OPR-K371-KR-19 NetCDF Sound Speed Data Files  
**Date:** Thursday, January 16, 2020 3:25:41 PM  
**Attachments:** [image001.png](#)  
[OPR-K371-KR-19\\_20200116.zip](#)

---

*Leidos Proprietary*

Good Afternoon,

In accordance with Section 8.3.6 of the Hydrographic Surveys Specifications and Deliverables (March 2019), please find attached one zip file (OPR-K371-KR-19\_20200116.zip) containing sound speed data in the NetCDF format used for Leidos hydrographic surveys under project number OPR-K371-KR-19, Contract: EA-133C-14-CQ-0033 (Task Order: 05).

All individual sound speed profile files are delivered with the required .nc file extension and fields are populated with the project, survey, survey unit, and instrument. In addition, sound speed data files are broken out into four sub-folders, which correspond to the purpose of each cast as indicated below:

- OPR-K371-KR-19\_NCEI\_Used\_for\_Closing
- OPR-K371-KR-19\_NCEI\_Used\_for\_Comparison
- OPR-K371-KR-19\_NCEI\_Used\_for\_Final\_Surfaces
- OPR-K371-KR-19\_NCEI\_Used\_for\_Lead\_Line

Please contact me if there are any questions or problems with the attached information.

Thank you,

**Erin Markham | Leidos**

Hydrographer  
Marine Survey & Engineering Solutions  
office: 401.848.4707  
mobile: 914.282.8377  
[erin.e.markham@leidos.com](mailto:erin.e.markham@leidos.com)



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**From:** Richard Powell - NOAA Federal <richard.powell@noaa.gov>  
**Sent:** Tuesday, November 26, 2019 6:20 AM  
**To:** Donaldson, Paul L. [US-US]  
**Subject:** EXTERNAL: Re: OPR-K371-KR-19 Coast Pilot Review Report

Paul,  
Thanks for this report. I will track it and make sure it gets registered as source document with our data branch. Once registered, I will make the appropriate changes to Coast Pilot 5.  
Have a good day!

Sincerely,

*Richard Hodge Powell*  
Cartographer / Marine Information  
Nautical Publications Branch  
240-533-0060

National Oceanic and Atmospheric Administration  
National Ocean Service  
Office of Coast Survey

**From:** Laura Jeffery - NOAA Federal <laura.jeffery@noaa.gov>  
**Sent:** Monday, November 25, 2019 9:13 AM  
**To:** Donaldson, Paul L. [US-US]  
**Subject:** EXTERNAL: Re: OPR-K371-KR-19 Coast Pilot Review Report

Thank you very much for your Coast Pilot 5 field report. We will have it registered and applied to the CP as soon as possible.

Happy Thanksgiving!

On Fri, Nov 22, 2019 at 4:02 PM 'Donaldson, Paul L.' via \_NOS OCS NSD Coast Pilot <[coast.pilot@noaa.gov](mailto:coast.pilot@noaa.gov)> wrote:

*Leidos Proprietary*

Please find attached the Coast Pilot Review Report for Contract: EA-133C-14-CQ-0033, Project Number OPR-K371-KR-19, Task Order 0005 (Port Arthur Traffic Lanes). The one attached .pdf file addresses the Coast Pilot Field Report delivered to Leidos for OPR-K371-KR-19, and a separate review of the text within the 47<sup>th</sup> Edition of Coast Pilot 5, Chapter 10 paragraphs.

Please contact me if there are any questions or problems with the attached.

Paul L. Donaldson CH (NSPS #241)|Leidos

Hydrographic Survey & Data Solutions Manager/Chief Hydrographer

Phone: 401.848.4757

Mobile: 401.261.7895

Mobile: 860.857.8802

Fax: 401.849.1585

Email: [paul.l.donaldson@leidos.com](mailto:paul.l.donaldson@leidos.com)

221 Third Street, Building A

Newport, RI 02840 USA

[Leidos.com](http://Leidos.com)

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--

Laura B. Jeffery  
Nautical Publications Branch/NOS  
Cartographer/Reviewer  
240-533-0073

NOAA-NOS-OCS-NSD-NPB  
1315 E. West Hwy  
SSMC3, Station 6315  
Silver Spring, MD 20910

**From:** Donaldson, Paul L. [US-US]  
**Sent:** Friday, November 22, 2019 4:01 PM  
**To:** 'OCS.NDB@noaa.gov'; 'Coast.Pilot@noaa.gov'  
**Cc:** Kathryn Pridgen - NOAA Federal; Evans, Rhodri E. [US-US]; Bernier, Bridget W. [US-US]; Bernier, Alex T. [US-US]; Markham, Erin E. [US-US]  
**Subject:** OPR-K371-KR-19 Coast Pilot Review Report  
**Attachments:** OPR-K371-KR-19\_Coast Pilot Review Report.pdf

*Leidos Proprietary*

Please find attached the Coast Pilot Review Report for Contract: EA-133C-14-CQ-0033, Project Number OPR-K371-KR-19, Task Order 0005 (Port Arthur Traffic Lanes). The one attached .pdf file addresses the Coast Pilot Field Report delivered to Leidos for OPR-K371-KR-19, and a separate review of the text within the 47<sup>th</sup> Edition of Coast Pilot 5, Chapter 10 paragraphs.

Please contact me if there are any questions or problems with the attached.

Paul L. Donaldson CH (NSPS #241) | Leidos  
Hydrographic Survey & Data Solutions Manager/Chief Hydrographer  
Phone: 401.848.4757  
Mobile: 401.261.7895  
Mobile: 860.857.8802  
Fax: 401.849.1585  
Email: [paul.l.donaldson@leidos.com](mailto:paul.l.donaldson@leidos.com)

221 Third Street, Building A  
Newport, RI 02840 USA  
Leidos.com

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**From:** [Bernier, Bridget W. \[US-US\]](#)  
**To:** ["survey.outlines@noaa.gov"](mailto:survey.outlines@noaa.gov); [Kathryn Pridgen \(kathryn.pridgen@noaa.gov\)](mailto:kathryn.pridgen@noaa.gov)  
**Cc:** [Evans, Rhodri E. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Alex T. \[US-US\]](#); [Markham, Erin E. \[US-US\]](#)  
**Subject:** Survey Outlines for OPR-K371-KR-19 (H13215, H13216, and H13220)  
**Date:** Thursday, October 24, 2019 1:51:20 PM  
**Attachments:** [H13216 Survey Outline.000](#)  
[H13215 Survey Outline.000](#)  
[H13220 Survey Outline.000](#)

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Katy,

Please find attached the Survey Outlines for H13215 (Sheet 3), H13216 (Sheet 4), and H13220 (Sheet 8) from OPR-K371-KR-19, Port Arthur Traffic Lanes, Task Order-0005.

The survey outlines have been generated as S-57 Feature Object Class M\_COVR in .000 format (WGS84 datum, un-projected) as specified in the March 2019 HSSD (Section 8.1.2).

This completes the final submittal of survey outlines for the 8 sheets conducted during OPR-K371-KR-19.

Please let me know if you have any questions.

Thanks,  
-Bridget

---

**Bridget W. Bernier | Leidos**

Data Processing Manager  
Marine Survey and Engineering Solutions  
office: 401.848.4615 | mobile: 401.239.7847  
[bridget.w.bernier@leidos.com](mailto:bridget.w.bernier@leidos.com) | [leidos.com](http://leidos.com)

Please consider the environment before printing this email.

**From:** [Markham, Erin E. \[US-US\]](#)  
**To:** [pipelines@bsee.gov](mailto:pipelines@bsee.gov)  
**Cc:** [Kathryn Pridgen - NOAA Federal](#); [tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov); [Evans, Rhodri E. \[US-US\]](#); [Donaldson, Paul L. \[US-US\]](#); [Bernier, Alex T. \[US-US\]](#); [Bernier, Bridget W. \[US-US\]](#)  
**Subject:** OPR-K371-KR-19 H13216 Seep  
**Date:** Monday, December 16, 2019 4:30:05 PM  
**Attachments:** [H13216 Seep Images.zip](#)  
[image001.png](#)

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In accordance with Section 1.7 of the Hydrographic Surveys Specifications and Deliverables, please find below the Non-DTON Seep Report for H13216 (Project: OPR-K371-KR-19, Contract: EA-133C-14-CQ-0033 TO-0005, Port Arthur Traffic Lanes, TX).

While surveying in Texas on Project Number OPR-K371-KR-19, Leidos discovered one seep within the area of Registry Number H13216. The feature was found through analysis of the multibeam data and determined to have a signature discernibly consistent with that of seep. The seep was found in conjunction with an exposed uncharted pipeline, which was submitted as H13216 DTON 03 (Exposed Pipeline 05). Details of the seep are as follows and corresponding images are contained in the attached zip directory.

1. H13216 Seep #01, located at approximately at 29° 28' 02.97"N 094° 13' 20.32"W, was identified in multibeam data on Julian Day 270 (27 September 2019). Review of the multibeam data found the seep in conjunction with an exposed uncharted pipeline, which was submitted under DTON 03. The seep is approximately 165m from the location of a formerly present charted platform on RNC 11332; this platform's existence was disproven during survey operations of H13216.

Please feel free to contact us if there are any questions with the attached file.

**Erin Markham | Leidos**

Hydrographer  
Marine Survey & Engineering Solutions  
office: 401.848.4707  
mobile: 914.282.8377  
[erin.e.markham@leidos.com](mailto:erin.e.markham@leidos.com)



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APPROVAL PAGE

H13216

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NCEI for archive

- Descriptive Report
- Data Acquisition and Processing Report
- Collection of Bathymetric Attributed Grids (BAGs)
- Processed survey data and records
- Geospatial PDF of survey products
- Collection of side scan sonar mosaics
- Collection of backscatter mosaics

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

Approved: \_\_\_\_\_

**Commander Meghan McGovern, NOAA**  
Chief, Atlantic Hydrographic Branch