

H13042

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

## DESCRIPTIVE REPORT

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Type of Survey: Navigable Area

Registry Number: H13042

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### LOCALITY

State(s): Louisiana

General Locality: Gulf of Mexico

Sub-locality: 6 Miles South of South Point

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2017

CHIEF OF PARTY  
George G. Reynolds

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Date:

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		REGISTRY NUMBER:
<b>HYDROGRAPHIC TITLE SHEET</b>		<b>H13042</b>
<b>INSTRUCTIONS:</b> 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): <b>Louisiana</b> General Locality: <b>Gulf of Mexico</b> Sub-Locality: <b>6 Miles South of South Point</b> Scale: <b>40000</b> Dates of Survey: <b>08/03 <del>6</del> /2017 to 10/12/2017</b> Instructions Dated: <b>06/21/2017</b> Project Number: <b>OPR-K354-KR-17</b> Field Unit: <b>Ocean Surveys, Inc.</b> Chief of Party: <b>George G. Reynolds</b> Soundings by: <b>Multibeam Echo Sounder</b> Imagery by: <b>Side Scan Sonar Multibeam Echo Sounder Backscatter</b> Verification by: <b>Atlantic Hydrographic Branch</b> Soundings Acquired in: <b>meters at Mean Lower Low Water</b>		
<b>Remarks:</b> <p>The purpose of this project is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. All times are recorded in UTC. Data recorded and presented relative to UTM Zone 15 North. THE INFORMATION PRESENTED IN THIS REPORT AND THE ACCOMPANYING BASE SURFACES REPRESENTS THE RESULTS OF SURVEYS PERFORMED BY OCEAN SURVEYS, INC. DURING THE PERIOD OF 3 AUGUST 2017 TO 12 OCTOBER 2017 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO OSI.</p>		

*The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <https://www.ncei.noaa.gov/>.*

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## Descriptive Report to Accompany Survey H13042

Project: OPR-K354-KR-17

Locality: Gulf of Mexico

Sublocality: 6 Miles South of South Point

Scale: 1:40000

August 2017 - October 2017

**Ocean Surveys, Inc.**

Chief of Party: George G. Reynolds

## A. Area Surveyed

This survey provides hydrographic data for the Gulf of Mexico waters approaching the Louisiana Coast south of Marsh Island. The general locations of the survey limits are presented in Table 1.

### A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
29° 23' 44.6" N 91° 56' 28.91" W	29° 14' 57.94" N 91° 45' 38.82" W

*Table 1: Survey Limits*

Survey limits were acquired in accordance with the requirements in the Project Instructions and the HSSD.

### A.2 Survey Purpose

Per the Hydrographic Survey Project Instructions: The Louisiana Coast project will provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. It is in the vicinity of the Atchafalaya River Delta and Port of Morgan City, LA. The survey will address concerns of migrating shoals and exposed hazards by updating bathymetry and positions of hazards, reducing the risk to navigation.

The Port of Morgan City is growing significantly and is working on programs to deepen and maintain the ship channel through the Gulf, bay, and up the Atchafalaya River to the Port of Morgan City where it will intersect with the Gulf of Mexico Intracoastal Waterway. The Port serves the offshore oil, shrimp, seafood, chemicals, and machinery industries. In addition to the port commerce, the Atchafalaya River Delta

has a rich ecosystem that supports both commercial fishing and recreational fishing communities. Updated charts from this project will support commerce and protect the environment by improving the safety of navigation for area traffic.

The project will cover approximately 185 square nautical miles of high priority survey area identified in the 2017 Hydrographic Health model. Adjacent modern surveys show shoaling, with contours that have migrated up to 9 miles since the 1935 vintage source surveys. The adjacent 2016 Atchafalaya survey uncovered numerous exposed pipelines and hazards. This project will significantly update the chart. Data from this project will supersede all prior survey data in the common area.

### A.3 Survey Quality

The entire survey is adequate to supersede previous data.

### 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	LNM not to exceed 6300 LNM. Acquire backscatter data during all multibeam data acquisition (HSSD Section 6.2). Report significant shoaling via weekly progress report. COR may adjust survey prioritization based on observed shoaling.
Inshore limit to 4 meters water depth for H13041 - H13043	200 meter set line spacing HSSD Section 5.2.2.4 Option A.
Greater than 4 meters water depth for H13041 - H13043	Complete Coverage (refer to HSSD Section 5.2.2.3)
All waters in survey area of H13040	Complete Coverage (refer to HSSD Section 5.2.2.3)
Disposal radius of features in all waters	Complete Coverage (refer to HSSD Section 5.2.2.3)

Survey Coverage is in accordance with the requirements in the Hydrographic Survey Project Instructions (June 21, 2017), the Statement of Work, [May 18, 2017 (SOW)], and the Hydrographic Surveys Specifications and Deliverables, [April 2017 (HSSD)]. Where required, Complete Coverage was accomplished by acquiring one hundred percent (100%) side scan sonar (SSS) coverage with concurrent multibeam echosounder (MBES) with backscatter or Complete Coverage MBES with backscatter. Inside the 4-meter contour, except in investigation or disposal areas, Set Line Spacing MBES was acquired on a 200 meter offset lineplan.

Additional SSS and MBES coverage was obtained as necessary to fill gaps in coverage, to provide a least depth for all significant SSS contacts and for charted feature disprovals. Gaps in the 100% SSS coverage were addressed with SSS fill-in lines or covered with complete MBES data. Bathymetric splits were also acquired to verify or disprove charted depths that fell between two MBES survey lines when the charted depth was shallower than the adjacent survey soundings. The final survey area covers 38.13 square nautical miles (Figure 1).

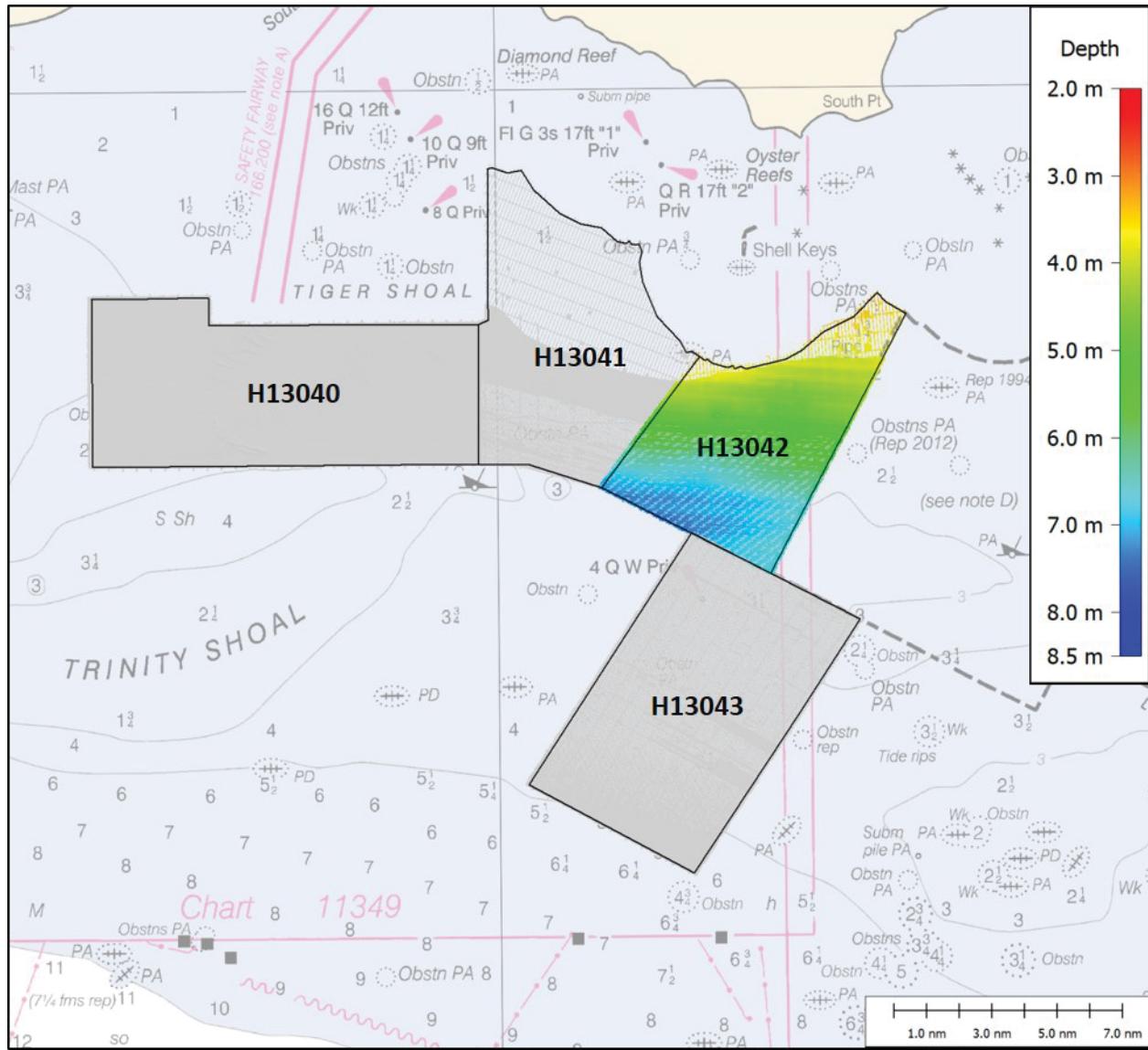


Figure 1: Survey H13042 MBES coverage overlaid on RNC 11349 and RNC 11351.

## A.5 Survey Statistics

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

	<b>HULL ID</b>	<i>R/V Ocean Explorer "OE"</i>	<i>R/V Osprey "SB"</i>	<b>Total</b>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0	0
	<b>MBES Mainscheme</b>	5.39	60.20	65.59
	<b>Lidar Mainscheme</b>	0	0	0
	<b>SSS Mainscheme</b>	0	1.36	1.36
	<b>SBES/SSS Mainscheme</b>	0	0	0
	<b>MBES/SSS Mainscheme</b>	1122.09	90.83	1212.92
	<b>SBES/MBES Crosslines</b>	69.22	11.25	80.47
	<b>Lidar Crosslines</b>	0	0	0
	<b>Number of Bottom Samples</b>			11
	<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>			38.13

*Table 2: 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>
08/06/2017	218
09/02/2017	245
09/03/2017	246
09/04/2017	247
09/05/2017	248
09/06/2017	249
09/08/2017	251
09/09/2017	252
09/10/2017	253
09/12/2017	255
09/13/2017	256
09/14/2017	257
09/15/2017	258
09/16/2017	259
09/27/2017	270
09/28/2017	271
09/29/2017	272
10/10/2017	283
10/11/2017	284
10/12/2017	285

*Table 3: Dates of Hydrography*

The lineal nautical miles (LNM) for MBES only development and fill in lines were included under the heading "Mainscheme MBES" and the LNM for SSS only fill in lines were included under the heading "Mainscheme SSS" in Table 2, Hydrographic Survey Statistics. The overall crossline/mainscheme MBES line percentage (6.29%) is based on combined coverage types, e.g. Complete Coverage and Set Line Spacing. If considered independently the Complete Coverage crossline percentage is 5.7% and the Set Line Spacing crossline percentage is 20.8%.

## B. Data Acquisition and Processing

### B.1 Equipment and Vessels

Refer to the OPR-K354-KR-17 Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing

methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

### B.1.1 Vessels

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

Hull ID	<i>R/V Ocean Explorer "OE"</i>	<i>R/V Osprey "SB"</i>
<b>LOA</b>	18 meters	7.9 meters
<b>Draft</b>	2 meters	0.6 meters

*Table 4: Vessels Used*

The survey was conducted employing two vessels. Much of the relatively deep reaches of the study area were surveyed using the R/V Ocean Explorer. A smaller vessel, the R/V Osprey, surveyed relatively shallow reaches of the study area as well as certain “deep” water areas. For the sake of clarity, especially as concerns the field data file naming convention, two distinct abbreviations are employed. Specifically, files generated on the R/V Ocean Explorer include “OE” in the name and files generated on the R/V Osprey include “SB” which is meant to indicate “small boat” files.

## B.1.2 Equipment

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

Manufacturer	Model	Type
Onboard the R/V Ocean Explorer	-	-
EdgeTech	4125	SSS
Teledyne RESON	SeaBat 7125 SV2	MBES
ODIM Brooke Ocean	MVP30	Sound Speed System
AML Oceanographic	Micro X	Sound Speed System
AML Oceanographic	Base X	Sound Speed System
Applanix	POS MV 320 v4	Positioning and Attitude System
Trimble	ProBeacon	Positioning System
Trimble	MS750	Positioning System
Onboard the R/V Osprey	-	-
EdgeTech	4125	SSS
Teledyne RESON	SeaBat 8125	MBES
Sea-Bird Scientific	SBE-37	Sound Speed System
AML Oceanographic	Base X	Sound Speed System
Applanix	POS MV 320 v5	Positioning and Attitude System
Leica	MX52R	Positioning System
Trimble	DSM232	Positioning System

*Table 5: Major Systems Used*

Table 5 summarizes the primary equipment used on the respective vessels to acquire MBES and SSS data. All equipment was installed, calibrated and operated in accordance with the DAPR.

## B.2 Quality Control

### B.2.1 Crosslines

Multibeam/single beam echo sounder/side scan sonar crosslines acquired for this survey totaled 6.29% of mainscheme acquisition.

A total of 80.47 nm of crossline data were acquired August 6, 2017 (DN 218) and September 4, 2017 (DN 247). Of these data, 69.22 nm from DN 218 apply to the deeper water, Complete Coverage dataset (acquired by the R/V Ocean Explorer). The 11.25 nm of crossline data acquired on DN 247 apply to the shallow water Set Line Spacing dataset (acquired by the R/V Osprey).

Complete Coverage crossline mileage equaled 5.7%. Set Line Spacing crossline mileage equaled 20.8%. Crosslines were run nominally perpendicular to their coverage type-specific mainscheme lines (Figure 2).

Soundings from mainscheme lines and crosslines were compared periodically throughout survey operations reviewing preliminary MBES surfaces and using CARIS HIPS Subset Editor. Crossline comparisons provided confirmation that the system offsets and biases were entered correctly and verified the accuracy of sounding correctors (i.e. tide, sound speed, TrueHeave).

Statistical quality control information was compiled from various difference surfaces, generated in CARIS HIPS. In all cases the depth layer of a 1-meter CUBE surface was used. The following crossline comparisons were undertaken:

- 1) Complete Coverage MBES mainscheme vs. Complete Coverage MBES crosslines. These data were generally acquired by the R/V Ocean Explorer.
- 2) Set Line Spacing MBES mainscheme vs. Set Line Spacing MBES crosslines. These data were generally acquired by the R/V Osprey.
- 3) R/V Ocean Explorer MBES mainscheme & crosslines vs. R/V Osprey MBES mainscheme and crosslines. This test compares data acquired by the R/V Ocean Explorer to data acquired by the R/V Osprey.

In each case the crossline analysis results demonstrate good to excellent agreement between crossline soundings and mainscheme soundings. The following numbered list (keyed to the comparison surface description numbered list above) summarize the maximum depth differences and average depth differences of the respective comparisons:

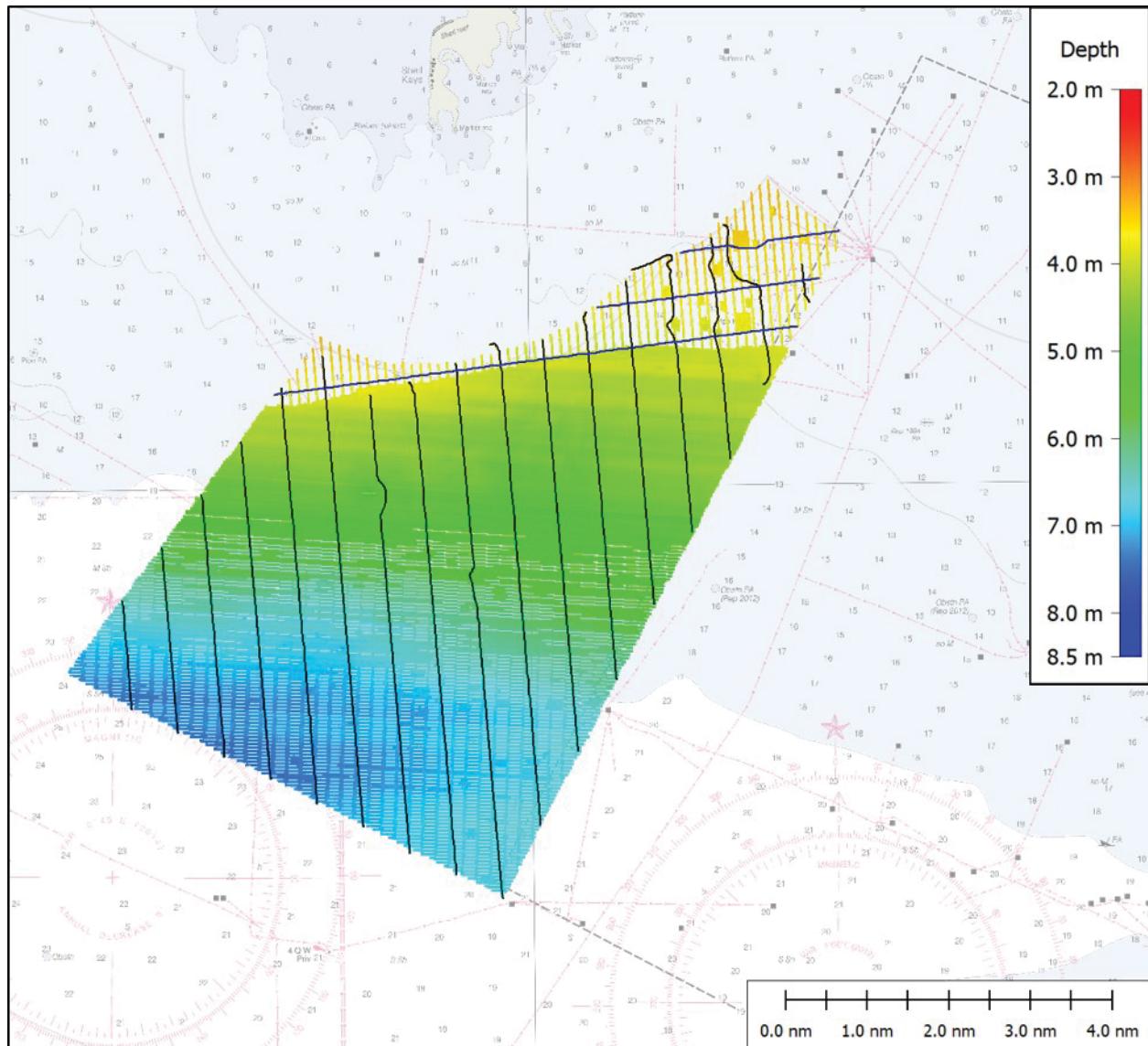
- 1) Maximum depth difference 0.46 meters, average depth difference 0.11 meters. Depth differences, including the maximum difference of 0.46 meters, are mostly attributable to tide offsets. However, over 40 days expired between acquisition of the crosslines and some of the worst mainscheme line agreement nodes. During this period Hurricane Harvey passed relatively close to the survey area. As such some discrepancy between the early-survey crosslines and late-survey mainscheme lines is expected.
- 2) Maximum depth difference 0.26 meters, average depth difference 0.01 meters. In contrast to the Complete Coverage analysis above, the majority of crosslines considered in this case (along with all set line spacing mainscheme lines) were acquired after Hurricane Harvey passed.
- 3) This comparison yields a minimum depth difference of -3.01 meters and a maximum depth difference of 2.19 meters with an average depth difference of 0.01 meter. The minimum/maximum differences are anomalous values which occur at the location of DTOMs #7 and #6 respectively. DTOMs #7 and #6 are tall, narrow features. Discounting these anomalous examples (and one other comparable feature-specific instance) the vessels compare quite well.

The allowable TVU for the range of water depths within Survey H13042 is 0.50 to 0.51 meters.

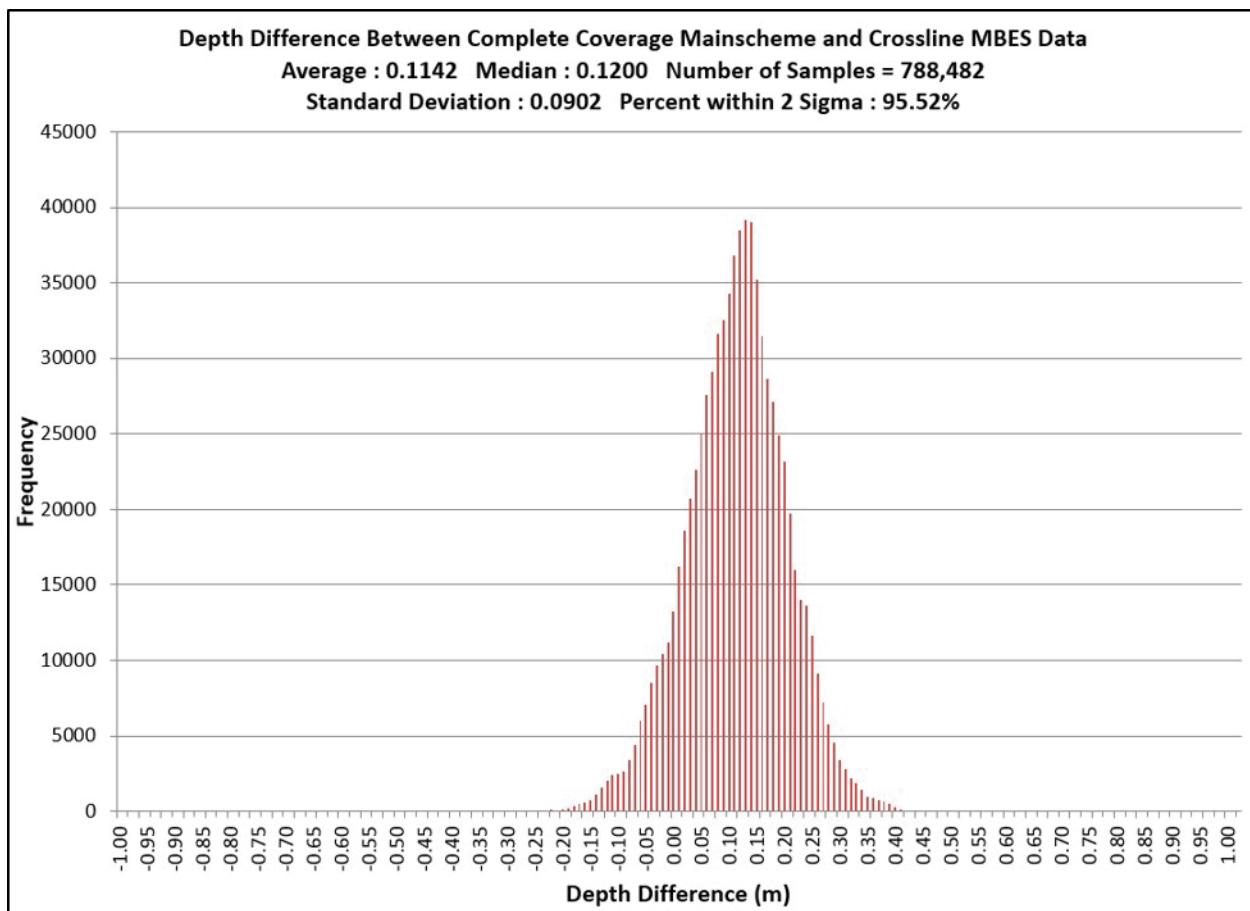
Figure 3 is a histogram showing the distribution of depth differences for all comparison grid cells considered in comparison case #1 noted above. The total number of 1-meter comparison cells equaled 788,482. Of 788,482 possible comparison cells, 745,949 or 94.61% of the cells include crossline and mainscheme soundings that match within +/- 25 centimeters.

Figure 4 is a histogram showing the distribution of depth differences for all comparison grid cells considered in comparison case #2 noted above. The total number of 1-meter comparison cells equaled 20,583. Of 20,583 possible comparison cells, 20,582 or 99.99% of the cells include crossline and mainscheme soundings that match within +/- 25 centimeters.

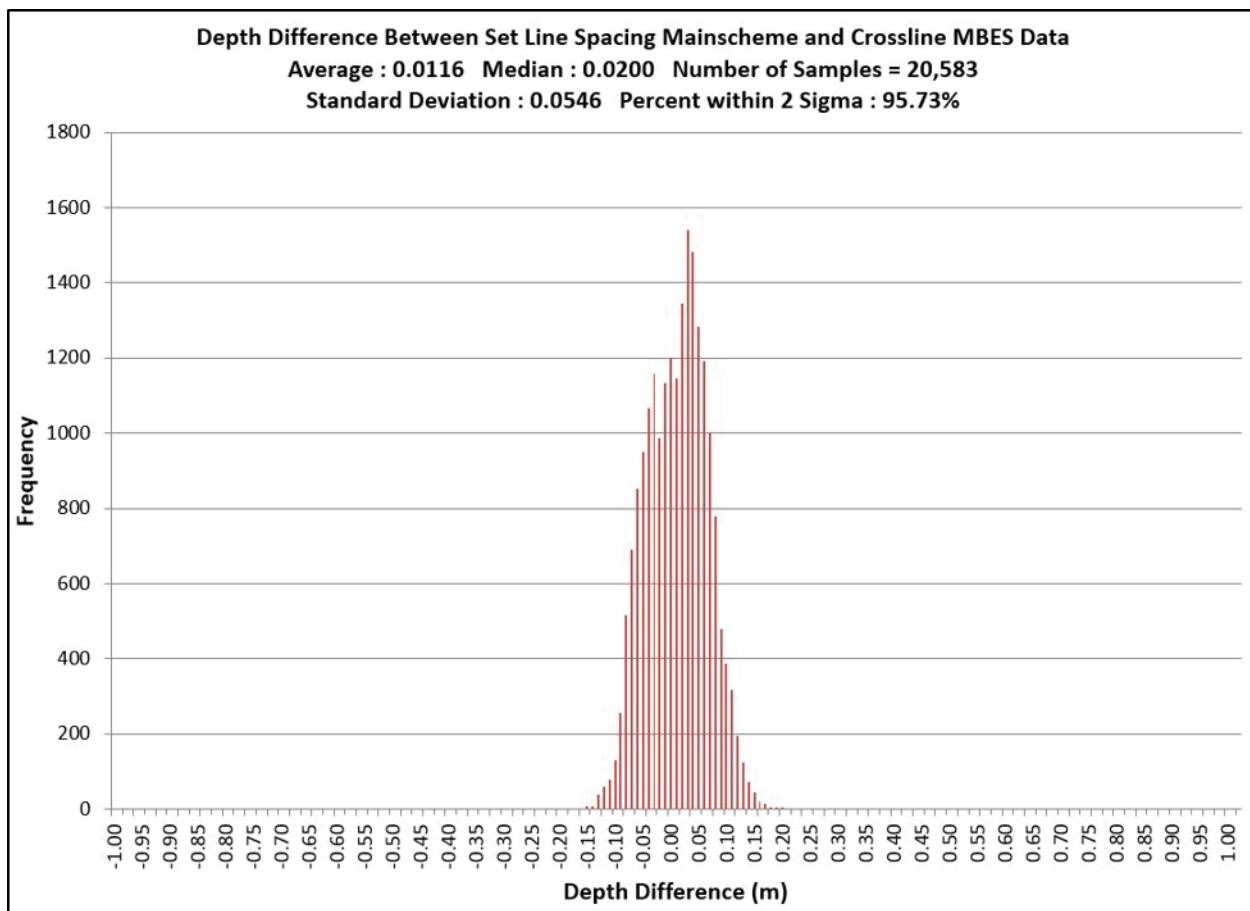
Figure 5 is a histogram showing the distribution of depth differences for all comparison grid cells considered in comparison case #3 noted above. The total number of 1-meter comparison cells equaled 385,777. Of 385,777 possible comparison cells, 362,732 or 94.03% of the cells include crossline and mainscheme soundings that match within +/- 25 centimeters.



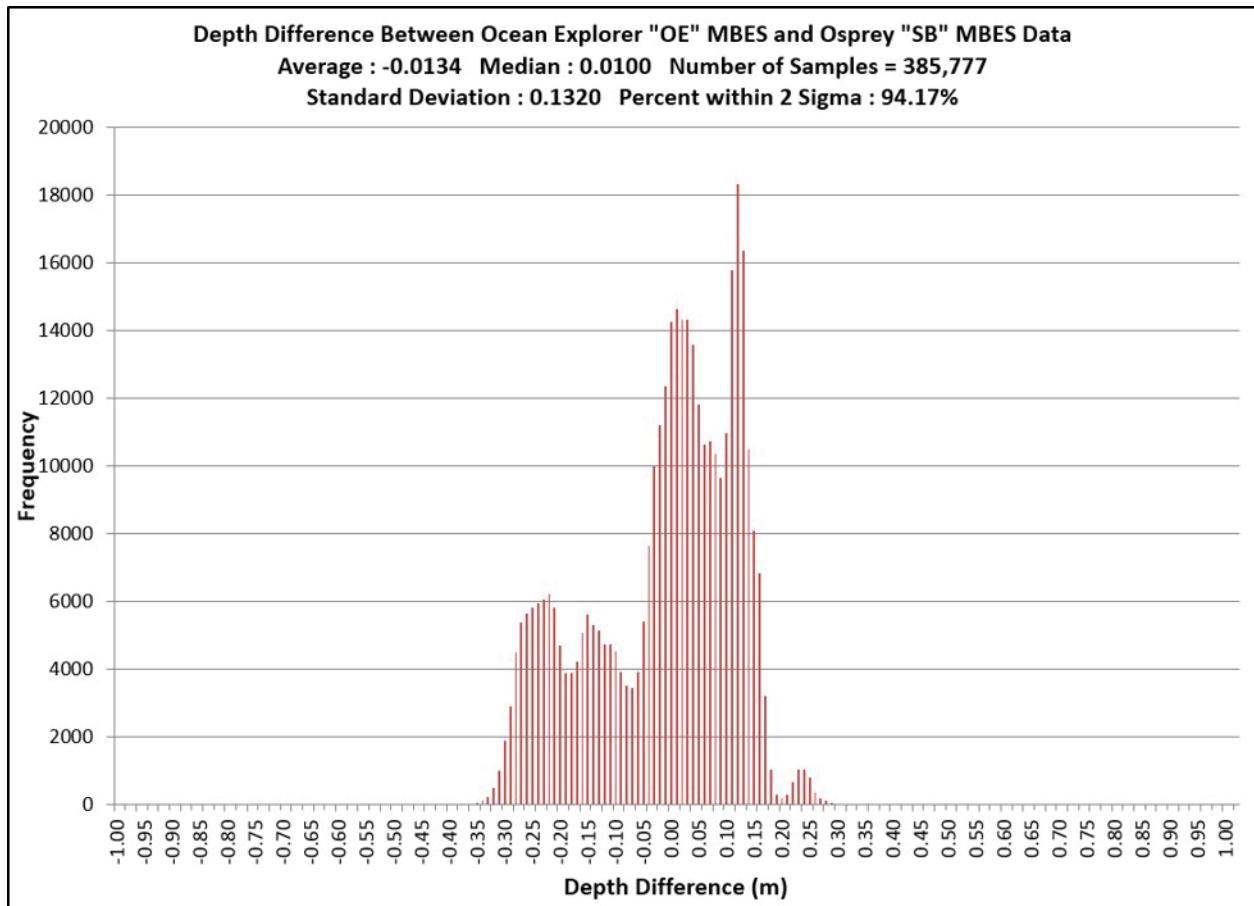
*Figure 2: An overview of the crossline layout on a 1-meter surface. In this figure the combined Complete Coverage/Set Line Spacing mainscheme MBES surface is colored by depth. The Complete Coverage crosslines are colored black and the Set Line Spacing crosslines are colored blue. RNC 11349 and RNC 11351 are visible in the background.*



*Figure 3: The graph shows a frequency distribution of the depth differences between the H13042 Complete Coverage crossline data and the H13042 Complete Coverage mainscheme MBES data. Statistics from the depth difference sample set are displayed above the graph.*



*Figure 4: The graph shows a frequency distribution of the depth differences between the H13042 Set Line Spacing crossline data and the H13042 Set Line Spacing mainscheme MBES data. Statistics from the depth difference sample set are displayed above the graph.*



*Figure 5: The graph shows a frequency distribution of the depth differences between H13042 MBES data collected by R/V Ocean Explorer vs. MBES data collected by R/V Osprey. Statistics from the depth difference sample set are displayed above the graph.*

### B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Method	Measured	Zoning
Discrete Zoning	0.01 meters	0.19 meters

*Table 6: Survey Specific Tide TPU Values.*

Hull ID	Measured - CTD	Measured - MVP	Surface
R/V Ocean Explorer		1 meters/second	2 meters/second
R/V Osprey	4 meters/second		2 meters/second

Table 7: Survey Specific Sound Speed TPU Values.

The methods used to minimize the uncertainty in the corrections to echo soundings are described in detail in Section B. Processing and Quality Control of the project DAPR. Survey H13042 did not deviate from the methods documented in the DAPR.

The Total Vertical Uncertainty Quality Check (TVU QC) "Ratio Method" was used to evaluate IHO uncertainty for the finalized surface. The TVU QC "Ratio Method" is described in the Chapter 4 Appendices of the NOAA OCS Field Procedures Manual (FPM) dated April 2014. Per the FPM TVU QC section, "The hydrographer should use the finalized surface because this surface will identify areas where either the uncertainty or the standard deviation exceeded the maximum allowable error and the greater of these two values is used in addition to having the uncertainty scaled to a 95% CI, whereas unfinalized surface uncertainties are reported at the 68% CI." The FPM TVU QC section also states that, "[ratio] values which do not require further examination are from -1 to 0 and the values which do require further examination are from -100 to -1."

A finalized surface was used in this analysis. The surface was finalized using the "greater of the two" option as the basis for calculating "Final Uncertainty" in the CARIS "Finalize Base Surface" utility.

In anticipation of shallow conditions in the north end of the survey area the Project Instructions requested Complete Coverage in regions deeper than 4-meters and Set Line Spacing coverage in regions shoaler than 4-meters. This assignment would normally result in production of two delivered surfaces: a 1-meter Complete Coverage surface and a 4-meter Set Line Spacing surface. After consultation with the COR and AHB personnel it was agreed that the entire survey area would be presented as a single, 1-meter surface. As such one (1) MBES CUBE (Combined Uncertainty and Bathymetric Estimator) surface was delivered along with Survey H13042: "H13042\_MB\_1m\_MLLW\_Final." The 1-meter surface is intended to satisfy coverage and sounding density requirements for both of the assigned coverage type-specific regions within the survey. The TVU QC values discussed below are calculated using the comprehensive 1-meter surface.

Results from the TVU QC indicate that 99.99% of the nodes from the submitted surface meet IHO Order 1 uncertainty specifications, i.e. the ratio values of nearly all the nodes are less than -1. Of the 44,711,605 nodes considered, 49 had a ratio value below -1. Upon examination it was found that the nodes with ratio values below -1 were located over known seafloor disturbances and/or known discrete features resulting in higher standard deviation values and finalized uncertainty values, which is to be expected.

### B.2.3 Junctions

Two (2) prior surveys and two (2) contemporary surveys junction with Survey H13042. Figure 6 displays the location of the prior and contemporary junction surveys for Project OPR-K354-KR-17. The allowable TVU for the range of water depths within Survey H13042 is 0.50 to 0.51 meters. Therefore, according to the XMLDR Junction Area "maximum difference" threshold guidance equation ( $SQRT2 * TVU$ ) the junction discrepancy action threshold = 0.71 meters.

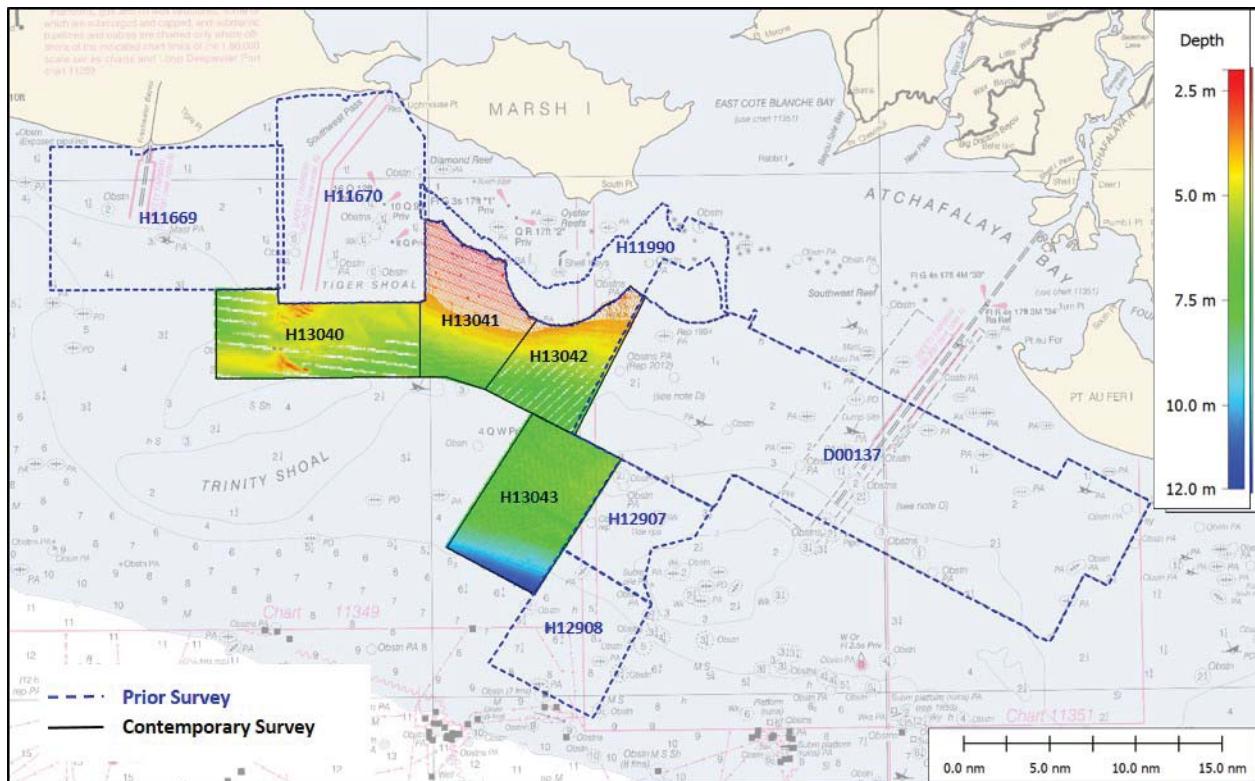


Figure 6: Survey junctions for Project OPR-K354-KR-17. RNC 11340 is displayed in the background.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H11990	1:20000	2008	C&C	N
D00137	1:40000	2005	NOAA Time Charter	E
H13041	1:40000	2017	Oceans Surveys, Inc.	W
H13043	1:40000	2017	Oceans Surveys, Inc.	SE

Table 8: Junctioning Surveys

## H11990

Survey H11990, a MBES/SSS survey conducted by C&C in 2008-2011, overlaps the northern border of H13042. Survey H11990 was run with the intention of achieving 200% SSS with concurrent MBES and, in the overlap area, Survey H13042 was run on a MBES-only 200-meter Set Line Spacing plan. As such, each survey's MBES coverage is essentially "skunk stripe coverage." In the overlap area the mainscheme line plan for Survey H11990 has various orientations. As a result the Survey H13042 Set Line Spacing line plan, oriented nominally south-north, meets the junction survey at various intersection angles. The common border length is approximately 13,500 meters. The junction area between the surveys is relatively sparse. The combined overlap of the adjacent survey areas is around 100-200 meters.

Depth data for Survey H11990 were downloaded from the National Geophysical Data Center (NGDC) website (<http://www.ngdc.noaa.gov>) in the form of 1-meter resolution Bathymetric Attributed Grid (BAG)s, "H11990\_MB\_1m\_MLLW\_4of7.bag," "H11990\_MB\_1m\_MLLW\_5of7.bag," and "H11990\_MB\_1m\_MLLW\_6of7.bag."

To conduct the junction comparison a 1-meter CUBE surface was generated for the overlapping MBES data set for Survey H13042, "H13042\_MB\_1m\_MLLW." In CARIS HIPS, depths from the three H11990\_1m\_MLLW BAGs were subtracted from the depths in the "H13042\_MB\_1m\_MLLW" CUBE surface using the CARIS HIPS Difference Surface function. A histogram of the differences is shown in Figure 7.

Depths from the H13042 survey show relatively good agreement with depths from the H11990 survey. Depth discrepancies equaled 0.56 centimeters or less. However the mean difference is only 4 centimeters. On average, Survey H11990 depths were deeper than H13042 depths. However, in general, Survey H13042 is deeper than Survey H11990 on the eastern half of the common area and Survey H13042 is shoaler than Survey H11990 on the western half of the common area. This trend suggests that sediment transport (as opposed to tide application) could be responsible for the junction disparities.

All (100%) junction comparison cells have a difference < 0.71 meters.

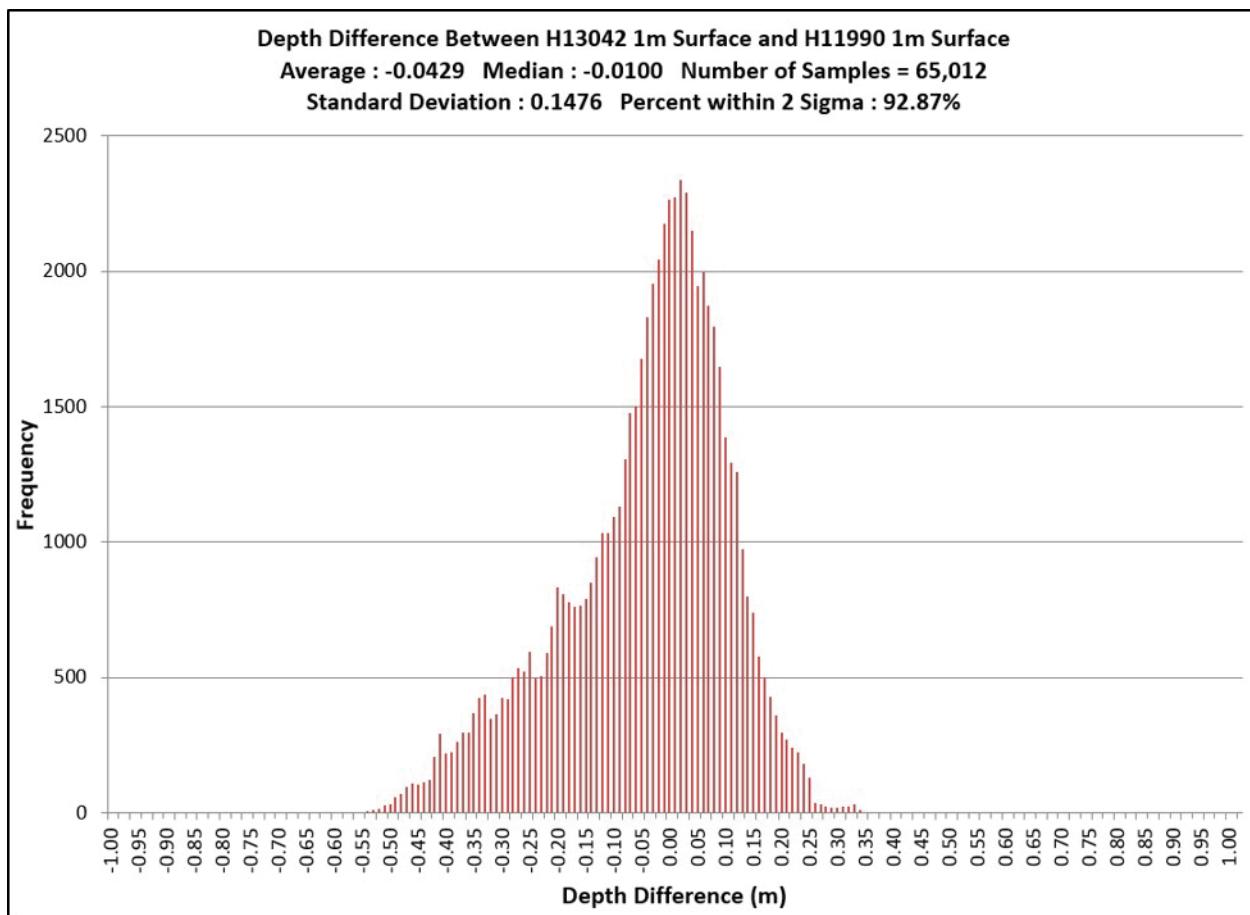


Figure 7: Surface-to-surface difference histogram comparing Survey H13042 to H11990.

## D00137

Survey D00137, a NOAA Time Charter Survey conducted in 2005, overlaps the eastern border of H13042. Survey D00137 is a reconnaissance survey run on tracklines spaced at nominally 1,300-meter intervals. Survey H13042 was run with the intention of achieving either Complete Coverage or Set Line Spacing coverage. Only one trackline from D00137 overlaps with the eastern boundary of Survey H11342. Therefore, the junction area between the surveys is relatively sparse. The 5-meter BAG data from D00137 are approximately 15 meters wide along the length of the trackline. The common border length between surveys is approximately 16,400 meters.

Depth data for Survey D00137 were downloaded from the National Geophysical Data Center (NGDC) website (<http://www.ngdc.noaa.gov>) in the form of a 5-meter resolution Bathymetric Attributed Grid (BAG), "D00137\_5m\_MLLW\_1of1."

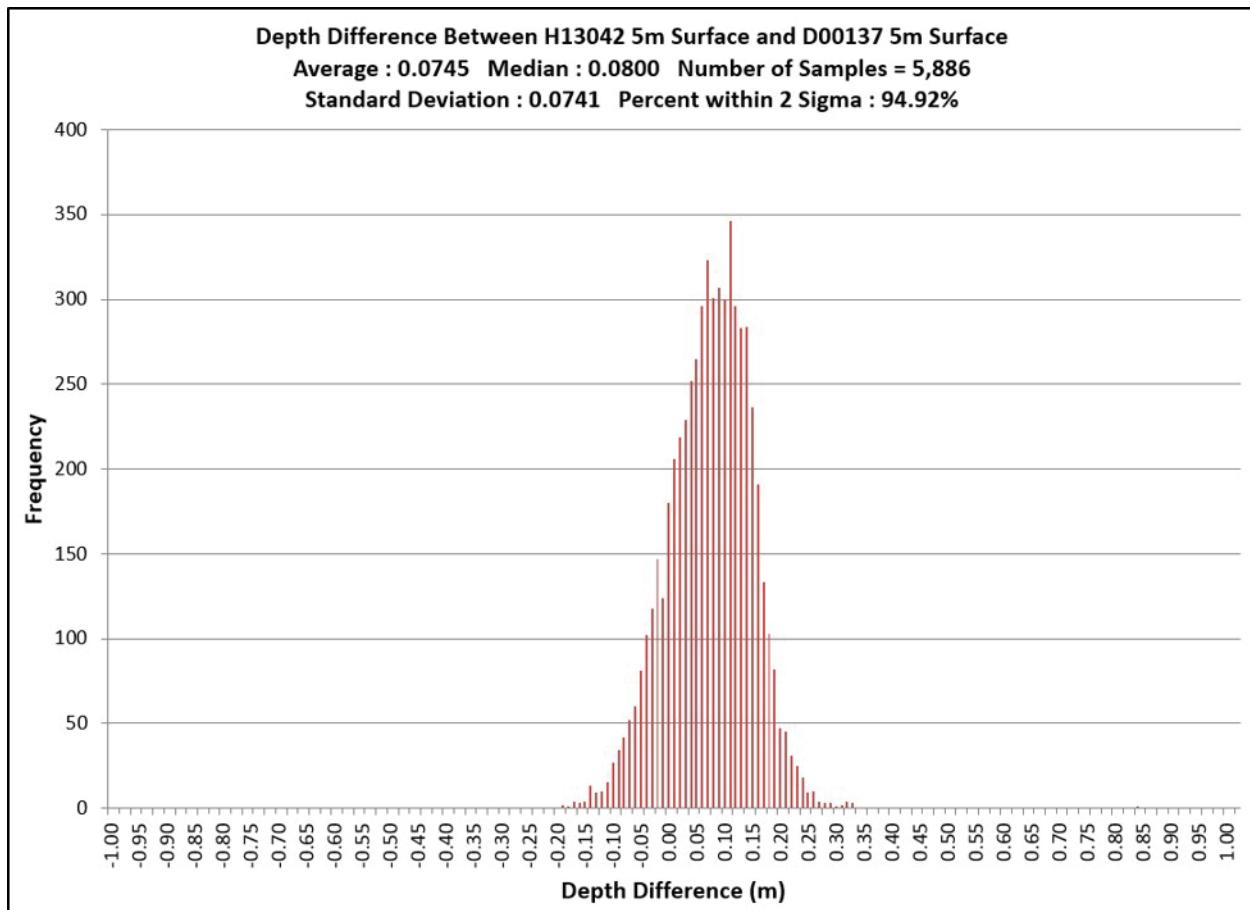
To conduct the junction comparison a 5-meter CUBE surface was generated from the entire MBES data set for Survey H13042, "H13042\_MB\_5m\_MLLW." In CARIS HIPS, depths from the "D00137\_5m\_MLLW\_1of1" were subtracted from the depths in the "H13042\_MB\_5m\_MLLW" CUBE

surface using the CARIS HIPS Difference Surface function. A histogram of the differences is shown in Figure 8.

Overall, depths from the H13042 survey show good agreement with depths from the D00137 survey. Depth discrepancies equaled 0.84 meters or less with a mean difference of 7 centimeters. The 0.84 meter discrepancy is found outside of Survey H13042 at position 29-17-23.32N, 91-49-04.62W where a recently surveyed insignificant feature appears at the location of a then larger feature in the D00137 data. Except for this anomalous discrepancy the range of differences is -0.19 meters to +0.33 meters. On average, Survey D00137 depths were shallower than H13042 depths.

A descriptive report (DR) was not available on the NGDC website for D00137; however, a note from ENC US4LA21M regarding the charted area encompassed by D00137 stated the following: "The hydrography within the heavy dashed black line was surveyed by NOS in 2005. A shoaling condition has been observed in relation to prior surveys. The density of this most recent survey data is inadequate to rule out the possibility of shoaler depths or undetected submerged features in these areas."

Most (99.98%) junction comparison cells have a difference < 0.71 meters.



*Figure 8: Surface-to-surface difference histogram comparing Survey H13042 to D00137.*

H13041

The approximate overlap between the bathymetric data from contemporary Surveys H13042 and H13041 was approximately 300 meters (within Complete Coverage areas) along a common border of approximately 9,000 meters. Both surveys were acquired to meet 100% SSS Coverage over much of the length of the common border and Set Line Spacing coverage just at the northern end of the common border. Given that the respective line plans meet at an obtuse angle there is a fair amount of overlapping data despite the skunk stripe nature of Complete Coverage MBES coverage.

Depths from 1-meter BASE surfaces compiled from the MBES data from each survey, "H13042\_MB\_1m\_MLLW" and "H13041\_MB\_1m\_MLLW," were compared using the CARIS HIPS Difference Surface function. A histogram of the differences is shown in Figure 9. Depths from the H13042 survey show good agreement with the depths from the H13041 survey. Depth discrepancies generally equaled 20 centimeters or less with a mean difference of 4 centimeters.

All (100%) junction comparison cells have a difference < 0.71 meters.

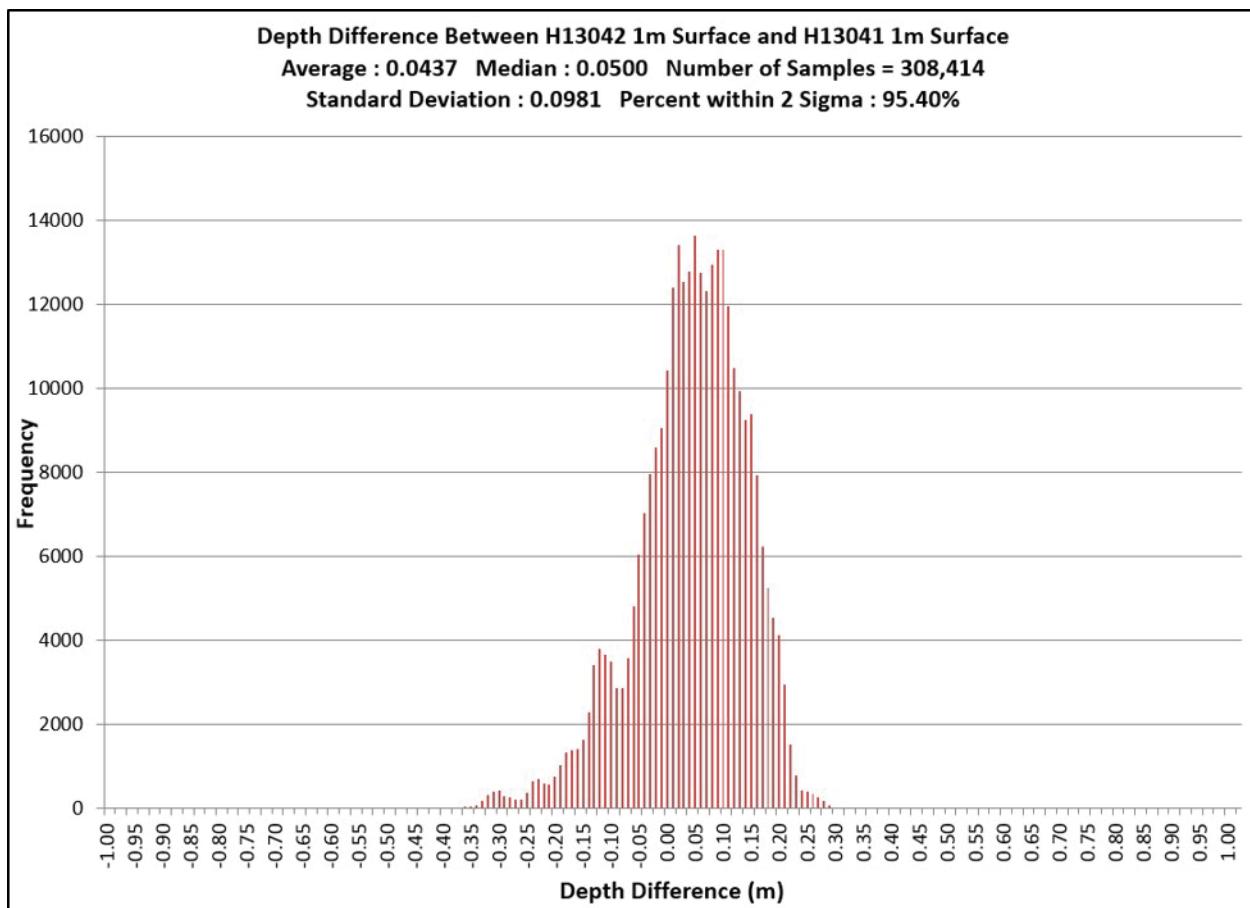


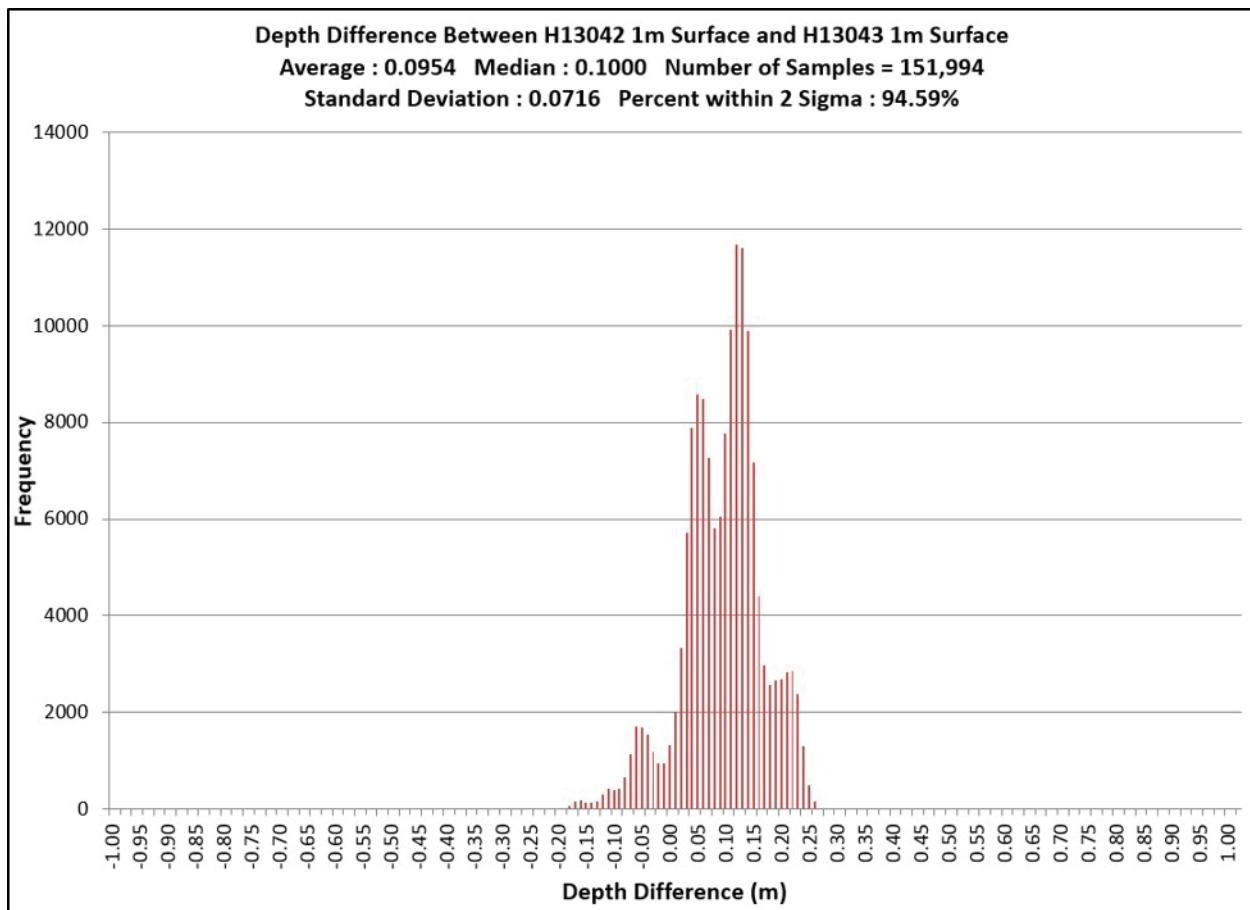
Figure 9: Surface-to-surface difference histogram comparing Survey H13042 to H13041.

H13043

The approximate overlap between the bathymetric data from contemporary Surveys H13042 and H13043 was approximately 300 meters along a common border of approximately 5,300 meters. Both surveys were acquired to meet 100% SSS Coverage over the length of the common border. Given that the respective line plans meet at an obtuse angle there is a fair amount of overlapping data despite the skunk stripe nature of Complete Coverage MBES coverage.

Depths from 1-meter BASE surfaces compiled from the MBES data from each survey, "H13042\_MB\_1m\_MLLW" and "H13043\_MB\_1m\_MLLW," were compared using the CARIS HIPS Difference Surface function. A histogram of the differences is shown in Figure 10. Depths from the H13042 survey show good agreement with the depths from the H13043 survey. Depth discrepancies generally equaled 25 centimeters or less with a mean difference of 10 centimeters.

All (100%) junction comparison cells have a difference < 0.71 meters.



*Figure 10: Surface-to-surface difference histogram comparing Survey H13042 to H13043.*

## B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the Quality Control section of the DAPR. Results from the MBES bar checks are included in Appendix II of the DAPR.

## B.2.5 Equipment Effectiveness

### R/V Ocean Explorer MBES Time Sync Errors

Onboard the R/V Ocean Explorer occasional time sync alarms were observed on the Reson 7125 Seabat display during data acquisition. This phenomenon did not occur on the R/V Osprey (using a Reson 8125). The field personnel noted that along with the time sync alarm a brief gap may be observed in the real time display of the Seabat waterfall window. In some cases these events resulted in what appeared to be a gap in the recorded HYPACK .HSX file. Using an EXCEL utility developed by OSI, each and every HYPACK .HSX file was analyzed for these types of gaps upon check-in to the data processing flow. Upon review of the HYPACK .HSX files affected by the time sync gaps, it was noted that the sounding pings were in fact present but, a number of sounding pings would be time tagged with identical times. It is surmised that the gaps are not due to the Reson multibeam hardware, rather that the gaps are associated with acquisition computer buffering. The majority of gaps were less than 1 second. Throughout Project OPR-K354-KR-17, 69 time sync gaps were detected.

When possible (and practical) the HYPACK .HSX time-stacked sounding pings were manually edited and the time stamps rewritten (interpolated/advanced at a 1/15 second interval until proper timing was reacquired). The 1/15 second interval was chosen because the sonar ping rate was limited, via user control, to a rate of 15 pings/second and the sonar range was maintained at a setting that did not limit the pings below 15/second. The affected lines were not converted to CARIS HDCS data until the time stacking editing had been completed. There were certain cases when a given gap was deemed unrepairable based on its duration or its relative location within a file.

By manually editing certain HYPACK .HSX files many lines were "saved." In some cases a gap occurred outside the bounds of the survey area or in an area with adjacent line overlap. In these cases the affected data were rejected. Between "saving" lines and rejecting certain affected data none of the delivered data contain gaps that exceeded 3x3 surface nodes in the 1-meter Complete Coverage surface.

### POSPac TrueHeave gaps

Especially during the first few days of data acquisition (DN 218, DN 219, DN 220) and periodically thereafter the recorded, stand-alone Applanix POSPac files were affected by occasional brief network interruptions with durations on the order of around 5 to 22 seconds. It was believed initially that the cause of the outages was a faulty network cable on the R/V Ocean Explorer (which was replaced on DN 221). However, additional outages on the R/V Ocean Explorer after DN 221 and the fact that both vessels ultimately experienced outages suggest that network collisions may have been the culprit. The result of the network interruptions is an associated gap in the TrueHeave or delayed heave record for each file

affected. It turns out that a number of the gaps described herein occur between times of data acquisition, e.g. before the start of acquisition for the day or between lines. For those files affected a custom "repair" was undertaken.

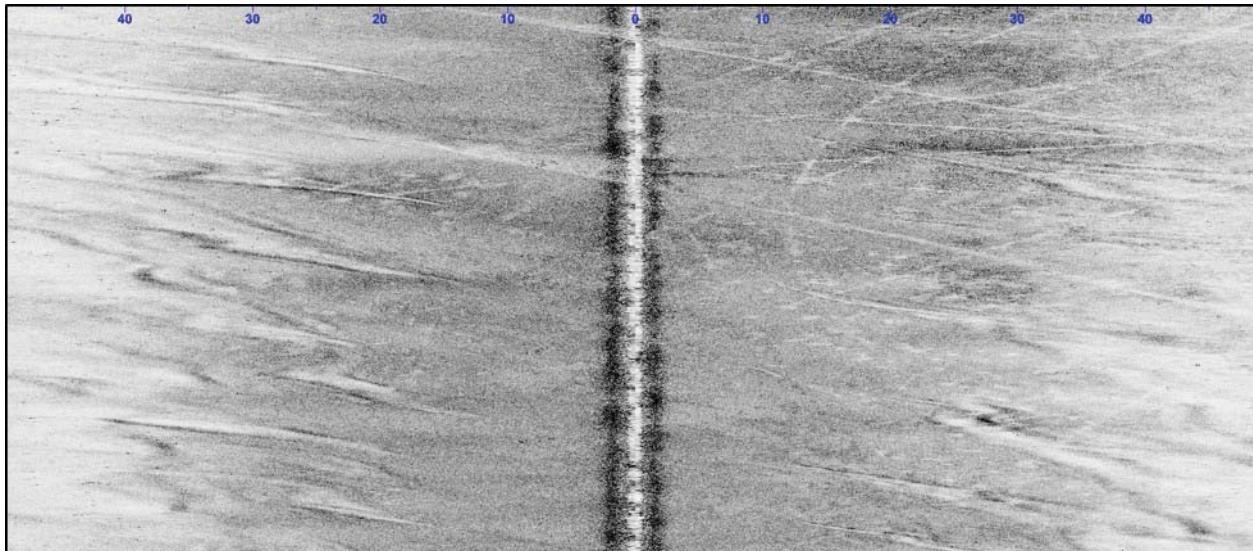
CARIS HIPS does not allow for application of TrueHeave files with data gaps. Rather than forgo using the discontinuous TrueHeave files, OSI developed a utility to "fill" TrueHeave gaps with the real-time heave data recorded by HYPACK. In practice the utility loops through a given POSPac file and searches for gaps in the TrueHeave record of > 0.1 second. If a gap is detected the utility then polls the appropriate HYPACK .HSX file and extracts the non-delayed, real-time heave values for the period of the data gap. Finally, a TrueHeave file (supplemented with real-time heave as appropriate) is written as a TrueHeave group 111-only file (.000 format). During data check-in each and every POSPac file was analyzed for TrueHeave gaps. For the few days affected by the network interruptions, the OSI utility-generated .000 files were used in lieu of the POSPac .000 file for application of TrueHeave. The analysis and generation of "repaired" files described above were undertaken prior to ingestion into the CARIS HIPS data processing work flow. The "repaired" files include a "TH" for TrueHeave in the file name instead of the OSI default notation of "POS." For example, a file named "17ES024\_OE\_2017\_TH\_219\_0807.000" was generated after repairing the POSPac file named "17ES024\_OE\_2017\_POS\_219\_0807.000."

It is important to note that at no time did the network outages described above result in an interruption to the real time network stream as recorded by HYPACK.

## B.2.6 Factors Affecting Soundings

### SSS Refraction

Dynamic sound speed changes affected the SSS imagery at times, causing refraction in the outer ranges of the SSS swath (Figure 11). To ensure that 100% coverage of high quality SSS data was acquired, when necessary, SSS lines with excessive refraction were rejected or the portion of the line with severe refraction was re-run. Due to the relatively shallow water depths and the relatively close line spacing employed in some locations, there were many instances of outer range refraction that did not trigger a re-run or rejection. In these cases high quality, 100% SSS coverage was achieved using only a portion of the imagery from a given line. For example, if refraction affected only the outer 20 meters of the 50 meter image range but the vessel was running on a 40 meter offset line plan, ample overlap was still achieved between adjacent tracklines resulting in greater than 100% SSS coverage of the area. In this scenario SSS imagery was not rejected.

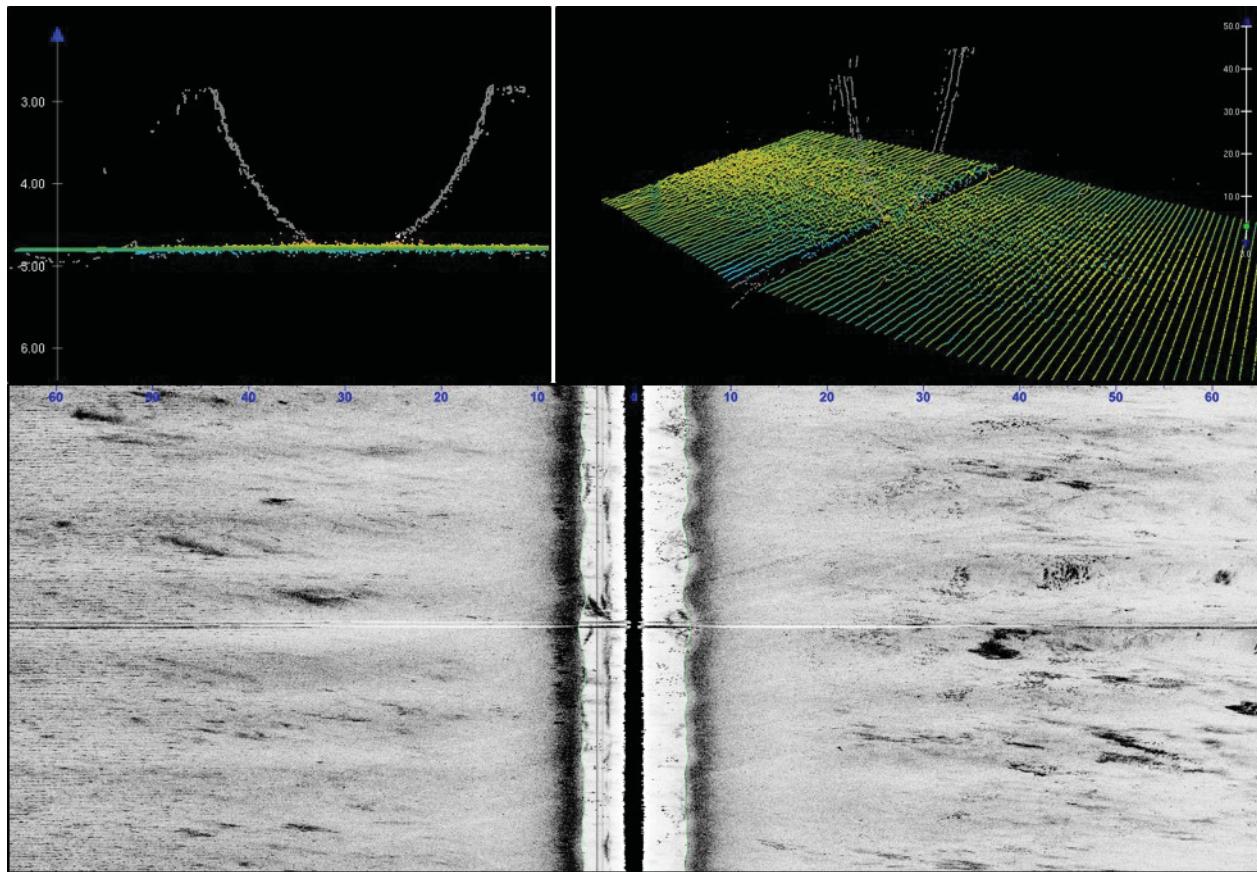


*Figure 11: Refraction in the SSS imagery is visible in both channels of a survey line acquired with the fixed-mount 4125 SSS.*

#### Sea State Induced White Streaks in SSS Imagery and MBES "Blowouts"

Both the Reson 7125 and Reson 8125 systems experienced periodic bursts of motion-induced noise or "blowouts," typically affecting between 1 and 4 sequential profiles. Efforts were made to reduce this noise during acquisition, including adjustments to system gain and power, in addition to the multibeam pole fairing that was installed (on the R/V Ocean Explorer only) to reduce cavitation effects. The noise bursts were infrequent and were encountered when sea state worsened. Accepted data affected by blowouts did not show any coverage gaps in excess of 3 x 3 nodes in the 1-meter MBES coverage surface.

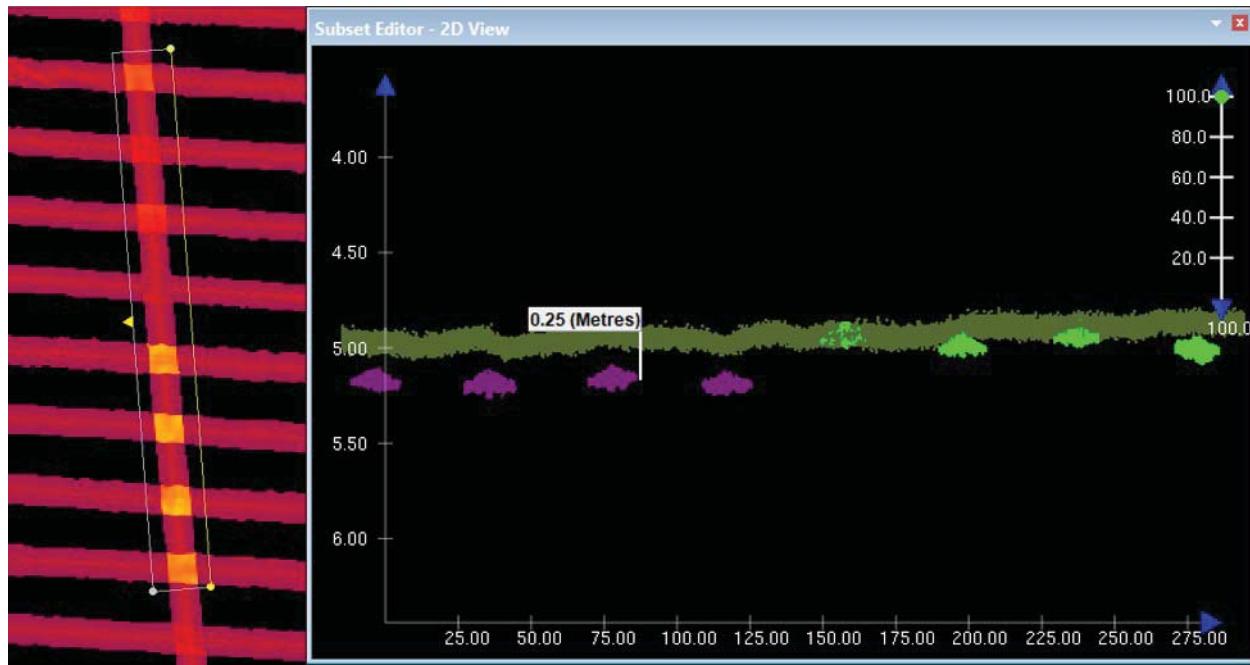
The fixed mount SSS data were also impacted by sea state conditions, such that when the wave frequency and height increased more cavitation effects were observed near the transducer head with a dark return noted at the top of the water column in the raw SSS record. The cavitation noise at the transducer head resulted in intermittent black lines across the SSS record, which occasionally coincided with blowouts in the MBES data (Figure 12). The term "black line" is seen in the acquisition log to denote these types of events. The acquisition SSS waterfall was the opposite palette as the CARIS SSS palette. Therefore, a "black line" noted in the log coincides with a white line in CARIS. To ensure that 100% coverage was attained where the white streaks occurred, holiday fill-in lines were acquired over the location of the streaks with either MBES or SSS coverage as necessary.



*Figure 12: This figure shows how cavitation noise at the SSS and MBES transducer heads presented in the converted data. Noise at the 4125 TX head is visible as a dark return at the top of the water column with white streaking across the raw SSS imagery (bottom). In this instance, the SSS white streak coincided with an MBES blowout (top right and top left images).*

### Tide Offset

Review of surface data indicated that there were a number of minor tide-related offsets between MBES data collected on different days scattered throughout Survey H13042. There were no noteworthy tide events that affected this survey. However, there was a consistent offset on the scale of 10 to 30 centimeters between the predicted and verified tides at the LAWMA, Amerada Pass LA tide station during the period of the survey. Overall, the tide correctors were modeled well for Survey H13042, showing good agreement between survey days. Tide offsets generally equaled 20 cm or less and are likely associated with local environmental effects, i.e. wind setup. Figure 13 highlights a portion of the survey area where a tide offset was noted between a crossline from DN 218 and mainscheme data from DN 249 and DN 250.



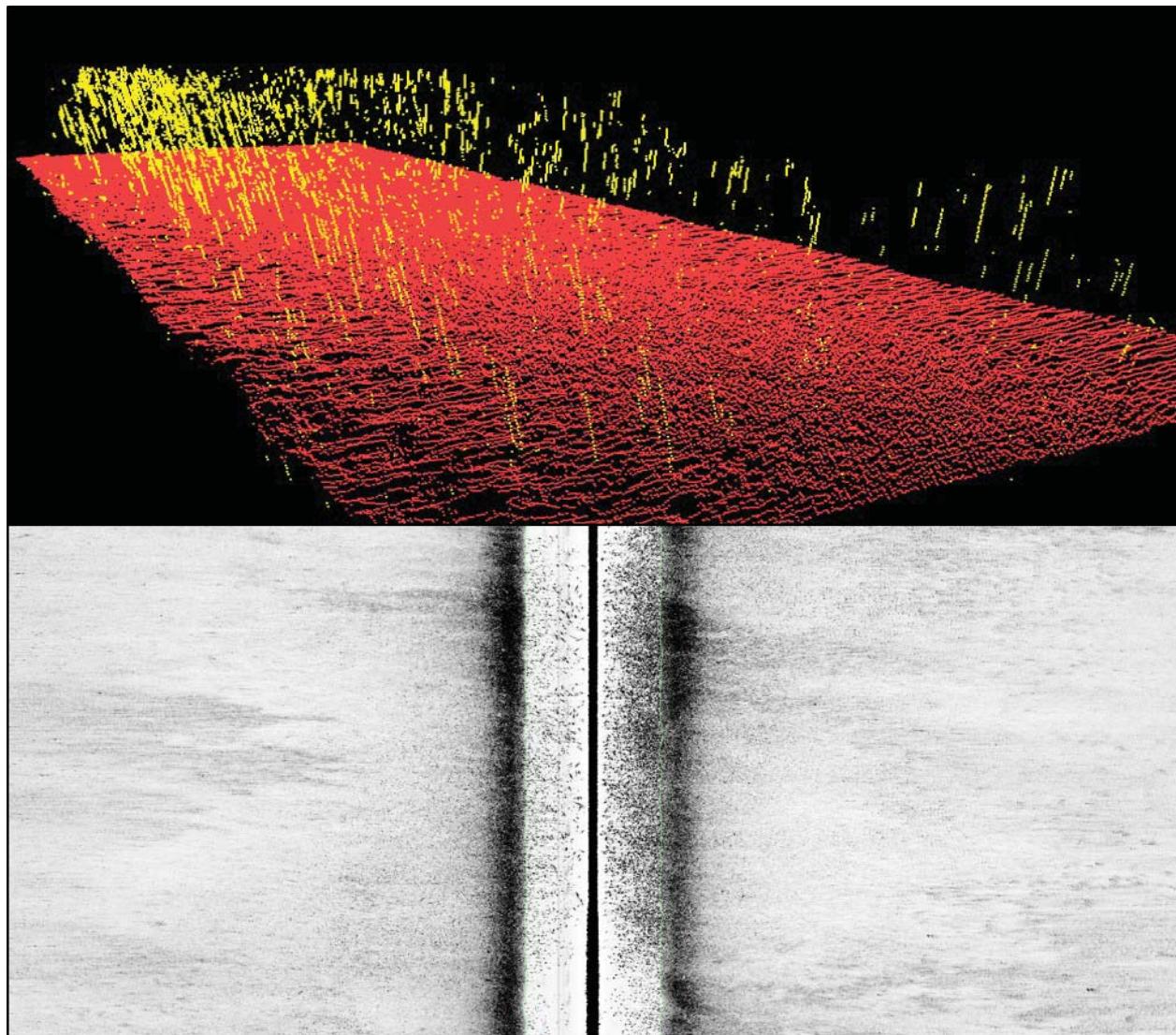
*Figure 13: The left image shows a subset window displayed over the Standard Deviation layer from the H13042 1-meter CUBE surface. The yellow colors indicate areas of higher standard deviation in the surface due to a tide offset. The right image displays MBES data loaded into CARIS Subset Editor with a tide offset noted between DN 218 (olive green) and some of the survey lines from DN 249 (purple) and DN 251 (bright green). Depths and distances are in meters.*

#### Fish in SSS Imagery and MBES Data

An abundance of fish and marine sea life were seen in the SSS and MBES data, either as lone swimmers or in schools (Figures 14-16). Fish and dolphins were noted in the acquisition log by the field team, and these areas were carefully reviewed during data processing. Shadows in the SSS, usually detached from a dark return, were typically associated with fish either in the water column or at a position closer to nadir. In the cases where a visible shadow was recorded in the SSS, the contact was designated as a fish, for two reasons: 1) the possibility that the assumed fish was actually a feature and 2) to assist processors in rejecting fish-related noise from the MBES data.

Dolphin pods were present within the survey area, as well as large schools of fish, which at times created large shadows in the SSS imagery and gaps in the MBES data where soundings on fish and dolphins were rejected. To ensure that possible significant features were not located in these fish and dolphin shadows, these fish/dolphin related coverage gaps were developed with 200% SSS coverage or complete MBES coverage.

Within the Complete Coverage portion of the survey area alone over 17,000 fish contacts were chosen in Survey H13042.



*Figure 14: A school of individual large fish as it appears in the MBES data and in the water column of the raw, un-slant range corrected SSS imagery. The image on the top was taken from the CARIS Subset Editor 3D window with rejected soundings, in this case returns off of the individual fish, colored yellow.*

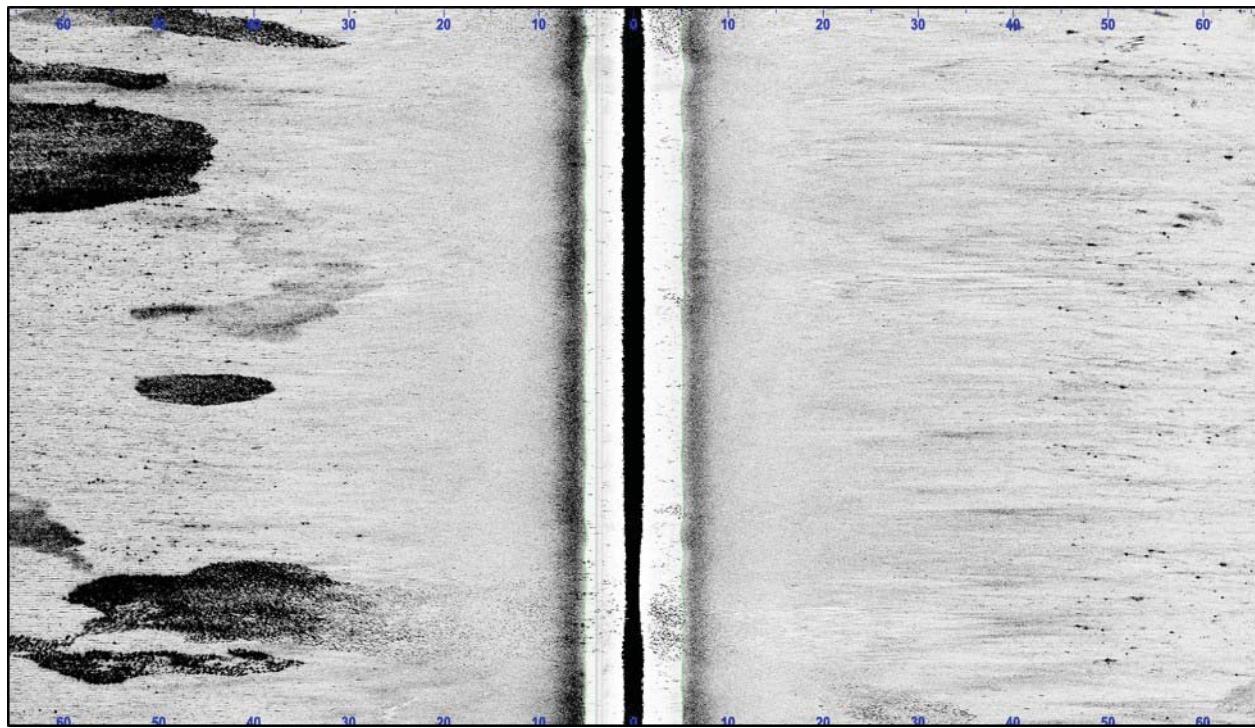
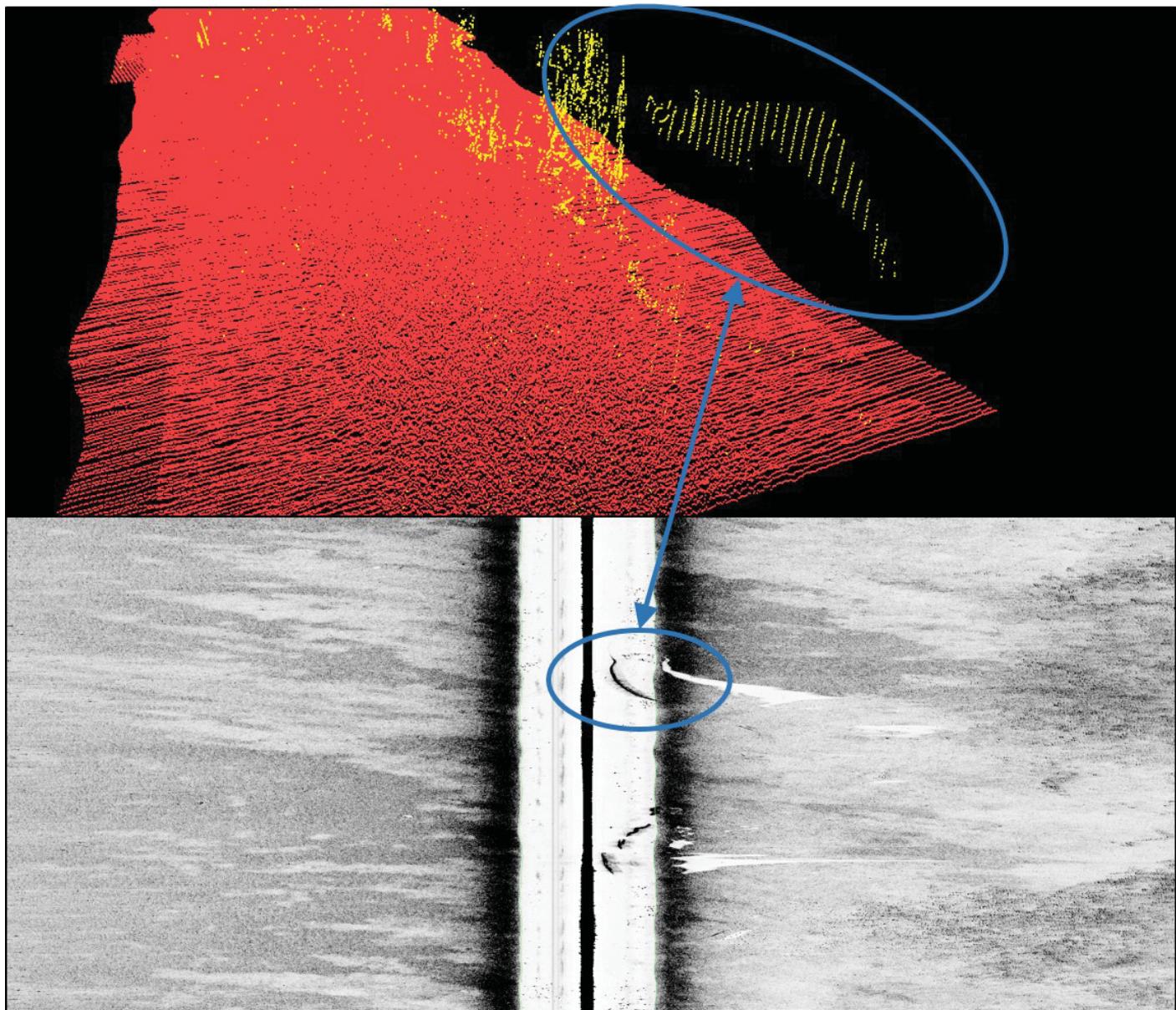


Figure 15: SSS image showing a large "fish ball" on the port channel.



*Figure 16: An example of a dolphin as it appears in the water column of the MBES and un-slant range corrected SSS and the acoustic shadow cast in each dataset. In the top panel the rejected MBES soundings are colored yellow.*

### B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: Onboard the R/V Ocean Explorer sound speed profile data were acquired with the ODIM MVP30 approximately every 15 minutes as documented in the DAPR. On the R/V Osprey sound speed profiles were acquired at an interval of approximately 1-2 hours or better.

All MBES lines were sound speed corrected using CARIS HIPS' "Nearest in Distance Within Time" method. For MBES data acquired by the R/V Ocean Explorer the interval used was one (1) hour. For MBES data acquired by the R/V Osprey the interval used was two (2) hours. For the duration of data acquisition for Project OPR-K354-KR-17, the water column was relatively well-mixed.

OSI submitted H13042 sound speed data in NetCDF format to the National Centers for Environmental Information (NCEI) on December 7, 2017 via the S2N tool. NCEI assigned the sound speed submission Accession Numbers 0169266 and 0169267. Correspondence regarding the NCEI data submission is included in Appendix II.

## B.2.8 Coverage Equipment and Methods

This survey was conducted to develop 100% SSS coverage along with concurrent MBES with backscatter for depths 4-meters and greater, i.e. Complete Coverage, Option B as defined in Section 5.2.2.3 of the HSSD 2017. Inside the 4-meter contour Set Line Spacing MBES coverage without SSS was acquired. For all disprovals either 200% SSS or Complete Coverage MBES was achieved. All depths within Survey H13042 were shallower than 20 meters. Per the HSSD which states "Gaps in SSS coverage should be treated as gaps in MBES coverage and addressed accordingly," gaps in SSS coverage and holidays caused by fish, dolphins, or white line noise were developed with Complete Multibeam or a second side scan coverage. All potentially significant features located with mainscheme SSS or MBES were developed with high density multibeam sonar data to meet the Project Instructions/HSSD requirement of Complete Coverage Multibeam.

The survey methods used to meet coverage requirements did not deviate from those described in the DAPR.

## B.2.9 Density

As mentioned above a single 1-meter surface was delivered for this survey. To confirm the HSSD Density coverage requirements, the Compute Statistics tool was utilized within CARIS HIPS and SIPS to generate statistics for the Density layer of the submitted CUBE surface. The HSSD states that at least 95% of the surface nodes shall be populated with at least 5 soundings (for either a Complete Coverage (Option B) 1-meter surface or a Set Line Spacing 4-meter surface). In this case the survey resulted in more than enough along-track density to compute favorable 1-meter surface density statistics even within the Set Line Spacing region which requires a relatively coarse cell size/density in comparison.

The Compute Statistics tool generates an ASCII export containing two columns: 1) sounding density value and 2) the number of nodes that returned that value. This export was used to determine the percentage of nodes with a sounding density greater than or equal to 5 for the submitted CUBE surface.

The percentage of nodes with density greater than or equal to 5 soundings for the 1-meter Complete Coverage surface is as follows: H13042\_MB\_1m\_MLLW = 99.14%.

## 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

Backscatter data were acquired concurrent with bathymetry data for Survey H3042. Backscatter data were recorded with HYSWEEP SURVEY in .7K format or 81X format by the R/V Ocean Explorer and R/V Osprey respectively. These data were periodically reviewed to ensure function of the backscatter acquisition process. No specific instructions were made in the Project Instructions regarding coverage, ground truthing or processing for the Backscatter data, as such, these data are delivered in raw format in the "Preprocess \Backscatter" directory per the HSSD, Section 8.3.4 Backscatter Deliverables.

## 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
CARIS	HIPS	10.4

*Table 9: Primary bathymetric data processing software*

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

Manufacturer	Name	Version
CARIS	SIPS	10.4

*Table 10: Primary imagery data processing software*

The following Feature Object Catalog was used: NOAA Profile V\_5\_5.

Software versions described in Section A of the DAPR were used throughout acquisition and processing of data for Project OPR-K354-KR-17.

### 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
H13042_MB_1m_MLLW_Final	CARIS Raster Surface (CUBE)	1 meters	2.51 meters - 8.61 meters	NOAA_1m	Complete Coverage (Option B) and super-density Set Line Spacing Coverage
<del>H13042_SSS_1m_100</del> <del>H13042_SSSAB_1m_600kHz_1of2</del>	SSS Mosaic	1 meters	-	N/A	100% SSS
<del>H13042_SSS_1m_200</del> <del>H13042_SSSAB_1m_600kHz_2of2</del>	SSS Mosaic	1 meters	-	N/A	200% SSS

Table 11: Submitted Surfaces

As mentioned above, what was assigned as a survey comprising both Complete Coverage and Set Line Spacing coverage types (and surface delivery resolutions) is being delivered as a 1-meter, single resolution surface that covers the entire survey area. As such, one (1) MBES CUBE (Combined Uncertainty and Bathymetric Estimator) surface was delivered along with Survey H13042; "H13042\_MB\_1m\_MLLW\_Final."

Two 1-meter SSS mosaics were submitted as GeoTIFFs to satisfy the SSS coverage requirements of 100% coverage and 200% coverage over charted feature disprovals and SSS fill-ins. In addition, a higher resolution, 25-centimeter SSS mosaic image composed of all SSS lines was submitted in the ECW (Enhanced Compressed Wavelet) format to assist with the survey review.

## C. Vertical and Horizontal Control

Additional information regarding the vertical or horizontal control for this survey can be found in the accompanying Horizontal and Vertical Control Report (HVCR) for Project OPR-K354-KR-17.

## C.1 Vertical Control

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

### Traditional Methods Used:

Discrete Zoning

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
LAWMA, Amerada Pass, LA	876-4227

*Table 12: NWLON Tide Stations*

File Name	Status
8764227.tid	Verified Observed

*Table 13: Water Level Files (.tid)*

File Name	Status
K354KR2017rev.zdf	Final

*Table 14: Tide Correctors (.zdf or .tc)*

A final verified tide file was created from verified water level data from the primary tide station LAWMA, Amerada Pass, LA (876-4227) obtained from the CO-OPS website upon completion of survey operations. Discrete zoning methods were utilized to apply tide correctors in CARIS HIPS. The survey area is located within Zones 193, 154, and 191 as provided in the preliminary tidal zoning scheme included with the project SOW.

Final project data are delivered with verified tides applied using a slightly altered version of the preliminary zoning file provided by CO-OPS, “K354KR2017rev.zdf.” Neither time nor magnitude multiplier changes were made to the preliminary zoning file provided by CO-OPS. However, the CO-OPS provided zoning file was found to have a minor flaw in the 6th vertex of Zone #82. It was discovered during data processing that this vertex did not fall exactly on a nearby vertex of the adjacent zone (the presumed intention of CO-OPS). The result was a long, narrow, triangular area with no zoning coverage. The non-coverage triangle had two legs roughly 11.6 kilometers long with the third leg being only about 4 meters long. OSI adjusted the Zone

#82 vertex which resulted in elimination of the non-coverage area. The OSI-edited zoning file included with the project deliverables uses the same name as noted above, i.e. the file name, as delivered by CO-OPS, was retained.

## C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The projection used for this project is UTM Zone 15 North.

All data products, except the S-57 Final Feature File (FFF) are referenced to Latitude/Longitude, UTM Zone 15 North. The S-57 Final Feature File, H13042\_FFF.000, is referenced to the World Geodetic System Datum of 1984 (WGS 84).

All MBES and SSS line and item investigation position data were acquired using an Applanix POS-MV operating in Differential GPS (DGPS) mode. The POS MV on both vessels was configured to receive USCG Differential beacon correctors from the English Turn, LA station.

On both vessels a secondary GPS, used to facilitate real-time horizontal control confidence checks, was supplied with correctors from the Angleton, TX beacon.

Prior to and during the course of the survey the accuracy of the primary positioning system on each vessel was verified by means of a physical measurement to a horizontal control point established at the respective vessel's base of operation. In the case of the R/V Ocean Explorer the checkpoint was established at Shell Morgan Landing on the Intracoastal Waterway. Position confidence checks for this vessel were accomplished, when practical, during fuel or weather stops. In the case of the R/V Osprey the checkpoint was established at a dock in the Quintana Canal at Cypremort Point, LA. Position confidence checks for this vessel were accomplished daily. Refer to the DAPR and HVCR for additional details.

The following DGPS Stations were used for horizontal control:

DGPS Stations
English Turn, LA (primary), 293 kHz
Angleton, TX (secondary), 301 kHz

*Table 15: USCG DGPS Stations*

## D. Results and Recommendations

### D.1 Chart Comparison

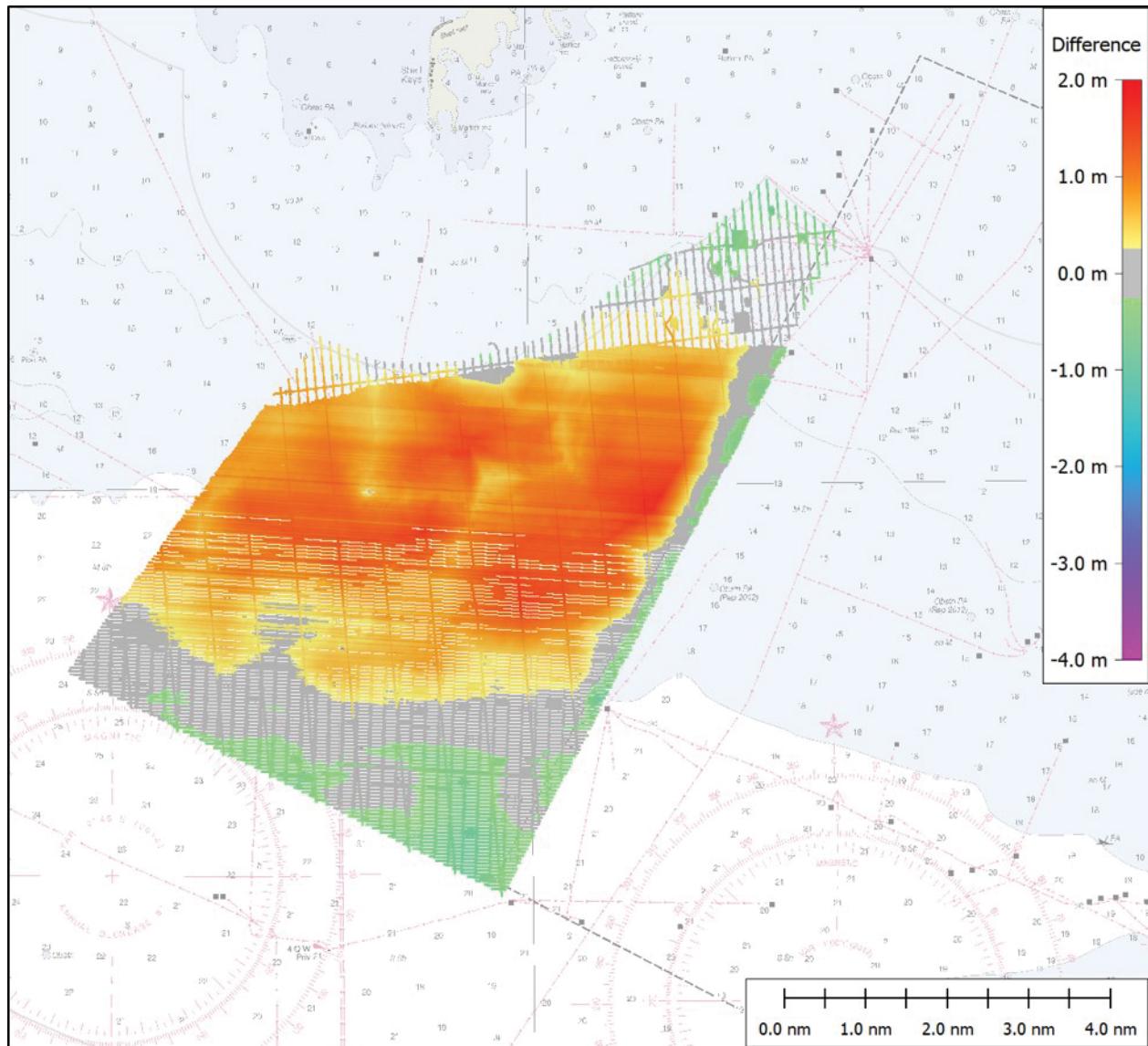
Chart comparisons were performed in CARIS HIPS/SIPS using finalized BASE surfaces, contours and selected soundings. The latest editions of the NOAA NOS Electronic Nautical Charts (ENC) were downloaded from the NOAA Office of Coast Survey website (<http://www.nauticalcharts.noaa.gov/>) regularly during survey operations, and after the survey was completed for final comparisons. The ENCs used for final comparisons were downloaded on November 15, 2017 and are submitted with the survey deliverables.

Local Notice to Mariners (LNM) and Notice to Mariners (NM) spanning the period beginning subsequent to the date of issuance of the final Hydrographic Project Instructions (June 21, 2017) and ending on November 15, 2017 were consulted in conjunction with the chart comparison.

The following sections adhere to the Descriptive Report sounding rounding system as described in Section 5.1.2 of the HSSD. Specifically, features described below having “precision” depths are presented along with the sounding's TPU. Depth and TPU are rounded to the nearest centimeter by standard arithmetic rounding (“round half up”).

During the chart comparison it was found that the shoalest seafloor soundings for charted regions was at the northern end of H13042 (as presently charted). However, the least depths of the survey occur on obstruction features. The chart comparisons documented below will discuss general seafloor changes, shoaling and deepening trends. All new or charted features identified, updated or disproved within Survey H13042 were addressed and attributed in the S-57 Final Feature File. For more information on the methodology that was used to build the FFF see Section B.2.5 Feature Verification in the DAPR.

An overview of the areas of change between charted depths and H13042 surveyed soundings is shown in Figure 17. The figure displays a difference surface made by subtracting a 10-meter resolution depth surface generated from the H13042 MBES data from a 250-meter resolution depth surface interpolated from the charted ENC soundings within the project area. Regions of shoaling are represented by positive depth differences (hot colors) and regions of deepening are represented by negative depth differences (cool colors). As seen in Figure 17 the survey area is overwhelmingly more shallow than the previous survey. A detailed description of each chart comparison follows.



*Figure 17: A depth difference surface overlaid on RNC 11349 and RNC 11351 provides an overview of the areas of change between charted depths and H13042 surveyed soundings.*

### D.1.1 Electronic Navigational Charts

The following are the largest scale ENCs, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US4LA15M	1:80000	27	09/29/2017	10/27/2017	NO
US4LA21M	1:80000	30	08/25/2017	10/18/2017	NO
US3GC03M	1:458596	54	07/27/2017	10/13/2017	NO

*Table 16: Largest Scale ENCs*

#### US4LA15M

ENC US4LA15M is analogous to RNC 11349. In fact, these two chart products essentially share the same geographic footprint. Therefore, chart comparison notes entered under ENC US4LA15M apply to RNC 11349. Within the survey area ENC US4LA15M overlaps ENC US3GC03M (discussed below).

As seen in Figure 17 a large percentage of the survey area has seen shoaling since the last survey. Depths are up to 1.5 meters shoaler in certain regions near the center of the survey while depths are nearly 1 meter deeper in the southeast corner of the survey.

As anticipated, the surveyed 18-foot contour will shift south substantially from its presently charted position. This move was anticipated in light of the relatively recent soundings and contour placement associated with Survey D00137. Presently, the charted 18-foot contour is offset a distance of approximately 6,300 meters between its representation within Survey H13042 and its representation within Survey D00137 (see Figure 18 with the ENC US4LA21M discussion). Within ENC US4LA15M the 18-foot contour shifts approximately 1,000 meters south (at the west end of the survey) and over 3,500 meters south (at the east end of the survey). This move affects ENC US4LA15M, ENC US4LA21M, and ENC US3GC03M as well as their RNC counterparts.

The location of the presently charted 12-foot contour (along the north end of Survey H13042) is relatively accurate in comparison to the contemporary soundings. This also was anticipated given that the northern border of Survey H13042 abuts Survey H11990 which was conducted in 2008.

An 18-foot contour depth area located at approximate position 29-20-14.00N, 91-50-43.00W was disproved. The depths in this area are now shoaler than 16 feet.

#### US4LA21M

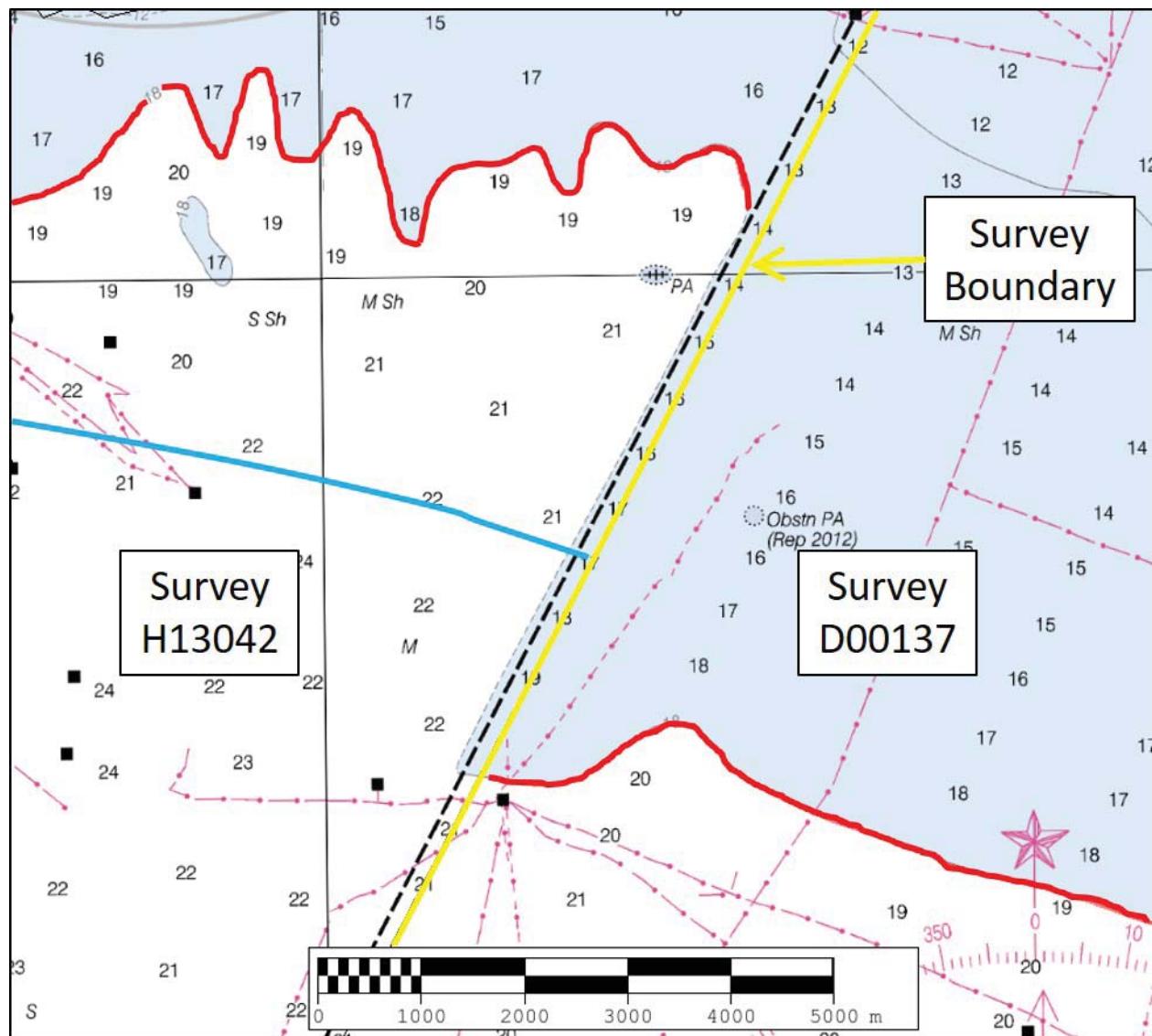
ENC US4LA21M is analogous to RNC 11351. With a few exceptions these two chart products share the same geographic footprint. One exception occurs in the vicinity of the Lower Atchafalaya River entrance

channel which is far outside the H13042 survey area and therefore does not apply to this survey. The second exception occurs within the H13042 survey area. In this case a portion of the western side of RNC 11351 extends approximately 1,500 meters further west than the western edge of ENC US4LA21M. Regardless, chart comparison notes entered under ENC US4LA21M apply to RNC 11351. The 1,500 meters of RNC 11351 not covered by ENC US4LA21M are covered by ENC US4LA15M. Within the survey area ENC US4LA21M overlaps ENC US3GC03M (discussed below).

The same general depth change description entered for the US4LA15M discussion (above) apply to ENC US4LA21M.

As noted above the surveyed 18-foot contour will shift south substantially from its presently charted position. This move was anticipated in light of the relatively recent soundings and contour placement associated with Survey D00137. Presently, the charted 18-foot contour is offset a distance of approximately 6,300 meters between its representation within Survey H13042 and its representation within Survey D00137 (Figure 18).

The location of the presently charted 12-foot contour (along the north end of Survey H13042) is relatively accurate in comparison to the contemporary soundings. This also was anticipated given that the northern border of Survey H13042 abuts Survey H11990 which was conducted in 2008.



*Figure 18: Presently charted 18-foot contour (shaded red) within Survey H13042 (left of yellow line) and Survey D00137 (right of yellow line). RNC 11349 and RNC 11351 are in the background. The approximate location of the surveyed 18-foot contour is shown as a blue line.*

#### US3GC03M

ENC US3GC03M falls entirely within the bounds of RNC 11340. However, as seen in Figure 19 below, despite the fact that the ENC and RNC charts are published at the same scale they do not share the same geographic boundary. Chart comparison notes entered under ENC US3GC03M apply to RNC 11340 where the two charts have overlapping coverage.

As noted above the surveyed 18-foot (3-fathom) contour will shift south substantially from its presently charted position. Presently, the charted 18-foot contour is offset a distance of approximately 6,300 meters

between its representation within Survey H13042 and its representation within Survey D00137 (see Figure 18 with the ENC US4LA21M discussion).

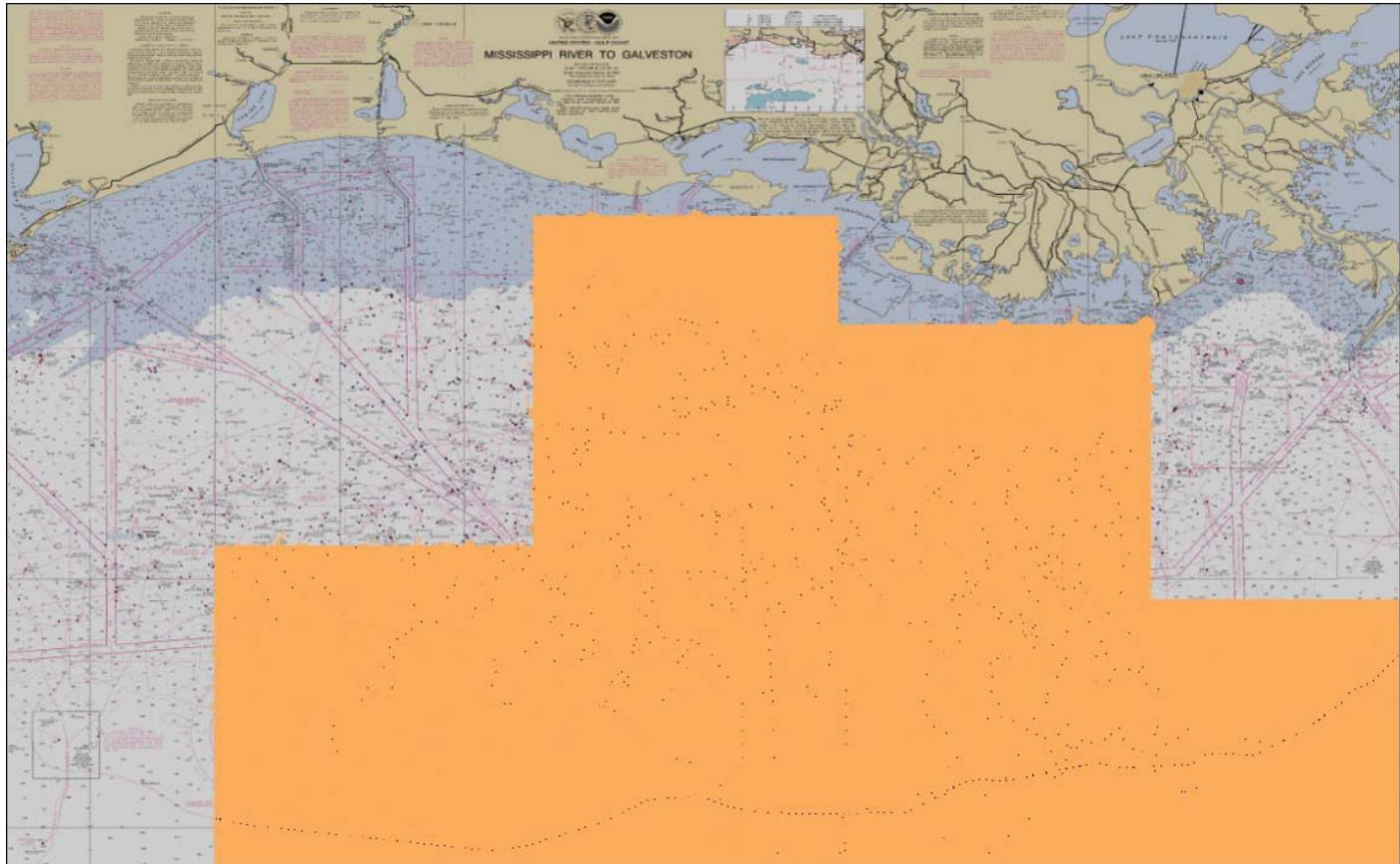


Figure 19: An overview of ENC US3GC03M (shaded orange) superimposed on RNC 11340.

### D.1.2 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

### D.1.3 Charted Features

The Project Instructions' guidance on Shoreline and Nearshore Features states, "Submit a Final Feature File in accordance with HSSD Section 7. Contact the COR if there are any questions regarding feature assignments and feature management. All features with attribute 'asgnmnt' populated with 'Assigned' shall be addressed in accordance with Chapter 7 of the HSSD. Investigation requirements for all assigned features will be provided in the investigation requirement attribute 'invreq.' For the purposes of disproval, charted features labeled with a "PA" will have a search radius of 160 meters, charted features labeled with a "PD" will have a search radius of 240 meters, and other features without a position qualifier will have a search

radius of 80 meters. With respect to wellheads, reference HSSD Chapter 7.5.1. If a wellhead is not found, for the purposes of disproval, a 50 m search radius shall be used following the feature disproval techniques for a complete coverage survey outlined in HSSD Section 7.3.4. Include feature in the FFF with descrp = delete."

Guidance on attribution of charted and CSF-assigned features varies between NOS-NOAA documents pertaining to this survey. For example, guidance on New/Delete vs. Update attribution is quite detailed in the HSSD Section 7.5.2 which lists numerous attribution change thresholds. In contrast, the CSF investigation requirements for platforms states, "If visually confirmed, include in FFF with descrp=retain. If not visible, conduct a feature disproval (Section 7.3.4) and if disproved, include in FFF with descrp = delete." The addition of uncharted BSSE Wellheads in the CSF (which were, as assigned, often closer to a surveyed platform than the CSF-defined position of the platform, creates further uncertainty on how to attribute certain features. Given the ambiguity in directives, OSI consulted with the COR for clarification via e-mail on December 6, 2017. The COR's December 11, 2017 response follows: "Include both the significant wellheads and platform features in the FFF, and reposition any platform that deviates greater than 10 meters from the center point of the corresponding charted feature, based on the Page 97 of the HSSD.

These are all delete/add for the charted platforms." A record of this correspondence is included in DR Appendix II.

Within the bounds of Survey H13042, 157 features were assigned for investigation within the Composite Source File (CSF): one (1) wreck (WRECKS), forty seven (47) platforms (OSFPLF), thirty eight (38) pipeline sections (PIPSOL), and seventy one (71) obstructions (OBSTRN). One (1) "unassigned" CSF pipeline enters the bounds of the Survey bringing the total PIPSOL features considered to thirty nine (39). Of the assigned obstructions, sixty nine (69) were "BSSE wellheads."

The assigned wreck was disproved with 200% SSS and partial MBES coverage within a 160 meters search radius. SSS imagery indicates that this area is regularly "fished" as there are myriad drag marks observed. The ENC US4LA21M wreck symbol correlates reasonably well with its RNC counterparts (about 18 meters apart). However, the ENC US3GC03M wreck symbol is approximately 80 meters from its ENC US4LA21M counterpart.

See DR Section D.2.6 Platforms for information regarding the verification or disproval of the charted platforms.

Of the seventy one (71) obstructions assigned for investigation all but two (2) are BSSE Wellheads. The two (2) non-BSSE Wellhead assigned obstructions include one (1) non-BSSE wellhead "Pipe PA," and one (1) non-specific "Obstruction PA." Neither of these assigned obstructions was attributed with a known depth. However, the "Pipe PA" was attributed with a Water Level Effect of "always dry." Both the "Pipe PA" and the "Obstn PA" were disproved with 200% SSS and partial MBES coverage within a 160 meter search radius. For the disproved non-BSSE Wellhead obstructions discussed herein, the ENC US4LA21M obstruction symbols correlate well with their RNC counterparts. On ENC US3GC03M the "Pipe PA" symbol correlates well with its RNC counterpart. However, the non-specific "Obstn PA" is over 300 meters from its RNC counterpart.

Of the sixty nine (69) assigned BSSE Wellhead obstructions only one (1) was definitively "found" and the remaining sixty eight (68) are recommended for deletion. The CSF position of the surveyed wellhead

is as follows: 29-16-40.41N, 91-53-18.46W. This wellhead is attributed "update" in the FFF due to its close proximity to the CSF-defined position. A second possible wellhead was identified (CSF position 29-17-20.51N, 91-49-41.67W). However, the surveyed feature is a few meters outside the 50-meter search radius for the BSSE Wellhead assignment. As such the CSF wellhead is recommended for deletion. This feature is discussed further in the Uncharted Features section of this report. In many cases assigned BSSE wellheads were coincident with verified charted platforms; however, in each case, no evidence of a wellhead aside from the verified platform was found within the disapproval area centered on the CSF provided positions defined by a 50-meter search radius. All other BSSE Wellhead obstructions were either stand-alone features or were coincident with disproved CSF-assigned platforms. All disproved BSSE Wellhead obstructions were disproved with 200% SSS and partial MBES or Complete Coverage MBES in a 50-meter search radius (unless a larger radius was compulsory due to the missing platform). For a more complete description of the well head investigations, refer to the H13042 FFF. The source indication (SORIND) attribute field was blank for the BSSE well head features submitted in the CSF; therefore, the SORIND fields are blank for the disproved well heads attributed with a description (descrip) of "Delete" in the FFF.

Thirty eight (38) pipeline features were assigned for investigation in the CSF. A number of the pipelines, as packaged and assigned in the CSF, extend outside the bounds of the H13042 survey area. As such, a number of the assigned pipelines are coincident with pipelines in adjacent sheets. One pipeline was included in the CSF but was not "assigned." During preliminary data processing there were forty five (45) pipeline or potential pipeline detections identified in Survey H13042. The majority of these detections are duplicate detections, i.e. a single feature imaged on one or more adjacent tracklines. Discounting the duplicated detections, the total number of pipeline or potential pipeline detections is fifteen (15). One (1) of the fifteen (15) potential detections, an indeterminate curved feature, occurring in the vicinity of position 29-17-29.09N, 91-48-56.78W, is outside the boundary of H13042 and thus not investigated.

Nearly all pipeline detections are less than or equal to 1.0 meter above the seafloor with the following exceptions: One pipeline extends from the seafloor to an above-water portion of a platform at position 29-17-56.94N, 91-53-04.33W. Given that this pipe is within the footprint of a the RNC charted platform and that the pipe is actually visible on the surface it was not treated as a DTON. Two other pipes were treated as DTONs however. The H13042 DTON #6 pipeline detection is a grouping of pipe-like features at positions 29-17-14.78N, 91-51-34.81W and 29-17-14.27N, 91-51-36.39W. The H13042 DTON #7 pipeline detection is a pipe arch adjacent to another obstruction located at position 29-20-02.48N, 91-52-21.17W.

Valid pipeline detections, as interpreted during late stage processing, were forwarded to the COR via e-mail on December 21, 2017 according to guidance in Section 1.7 of the HSSD regarding Non-DTON Seeps and Pipelines. The aforementioned DTONs are included in this report in order to provide a comprehensive accounting for non-charting purposes. Three "seeps" are included in the aforementioned Non-DTON pipeline notification.

Regarding the OCS-provided CSF, it should be noted that not all "assigned" features included in the CSF were addressed during the survey. This note is made in light of the Project Instructions' directive that, "all features with attribute 'asgnmnt' populated with 'Assigned' shall be addressed in accordance with Chapter 7 of the HSSD." The following time line and narrative are offered as an explanation thereof. The Draft Project Instructions are dated May 2, 2017 and the Draft Composite Source File (CSF) and Project Reference File (PRF) were issued on May 19, 2017. The Final Project Instructions are dated June 21, 2017, and the Final Data Package (including "final" CSF and PRF) was issued to OSI on July 5, 2017. The draft

Project Instructions included seven (7) potential sheets, i.e. HXXXXXX Registry Numbers. The negotiated survey effort, reflected in the Final Project Instructions and PRF include four (4) of the seven (7) original sheets. The remaining three (3) sheets are depicted as “unassigned” in the figure included with the Final Project Instructions. However, the Final CSF (file date 5-19-2017) does not reflect the reduction in sheets mentioned above. As such, there are a number of Final CSF “assigned” features that fall well outside of the four surveyed sheets. OSI’s assumption that the CSF “assigned” features falling within the three “unassigned” sheets need not be addressed was confirmed in correspondence with the COR (see Descriptive Reports Appendix II, Correspondence). For clarity the CSF “assigned” features that fall within the three “unassigned” sheets mentioned above are not included in the FFFs.

Prior to this year, exposed pipes and seeps were handled as DTONs and therefore were appended to the FFF. The 2017 HSSD includes a new category of feature, "non-DTON seeps and pipes." However, the 2017 HSSD does not mention whether or not to include these non-DTON features in the FFF. The HSSD only addresses undetected charted pipelines and recommends that a non-detected pipeline should be attributed "Retain." In a December 11, 2017 e-mail to the COR, OSI inquired about how to treat exposed, non-DTON pipes and seeps in the FFF. The COR's December 12, 2017 response follows, "The current requirement of the "Non-DTON Seep and Pipeline Report" is a separate deliverable from the FFF. Your historic method of including the pipeline segments in the FFF is good. How you manage the other features is up to your discretion. The features that are not cartographically significant they will be ignored in the FFF." Given this latitude in how to treat the non-DTON seeps and pipes, OSI chose to include them in the FFF as discrete features.

#### D.1.4 Uncharted Features

In general there were very few new features surveyed in H13042. Of the relatively few SSS contacts chosen most were either fish (chosen independent of the mass fish targeting scheme described in the DAPR) or features of insignificant height. All noteworthy new obstructions were surveyed with Complete Coverage MBES. In consideration of each obstruction's nearby soundings or proximity to existing platforms, only two of the new obstructions warrant DTON notification, H13042 DTON #6 and H13042 DTON #7.

A pipe which extends above water and attaches to a platform was included in the Non-DTON Seeps and Pipelines report but was not included as a DTON due to its proximity to the surveyed (and charted) platform and its conspicuous physical presence. The relatively narrow diameter pipe was surveyed at approximate position 29-17-56.94N, 91-53-04.33W (Figure 20).

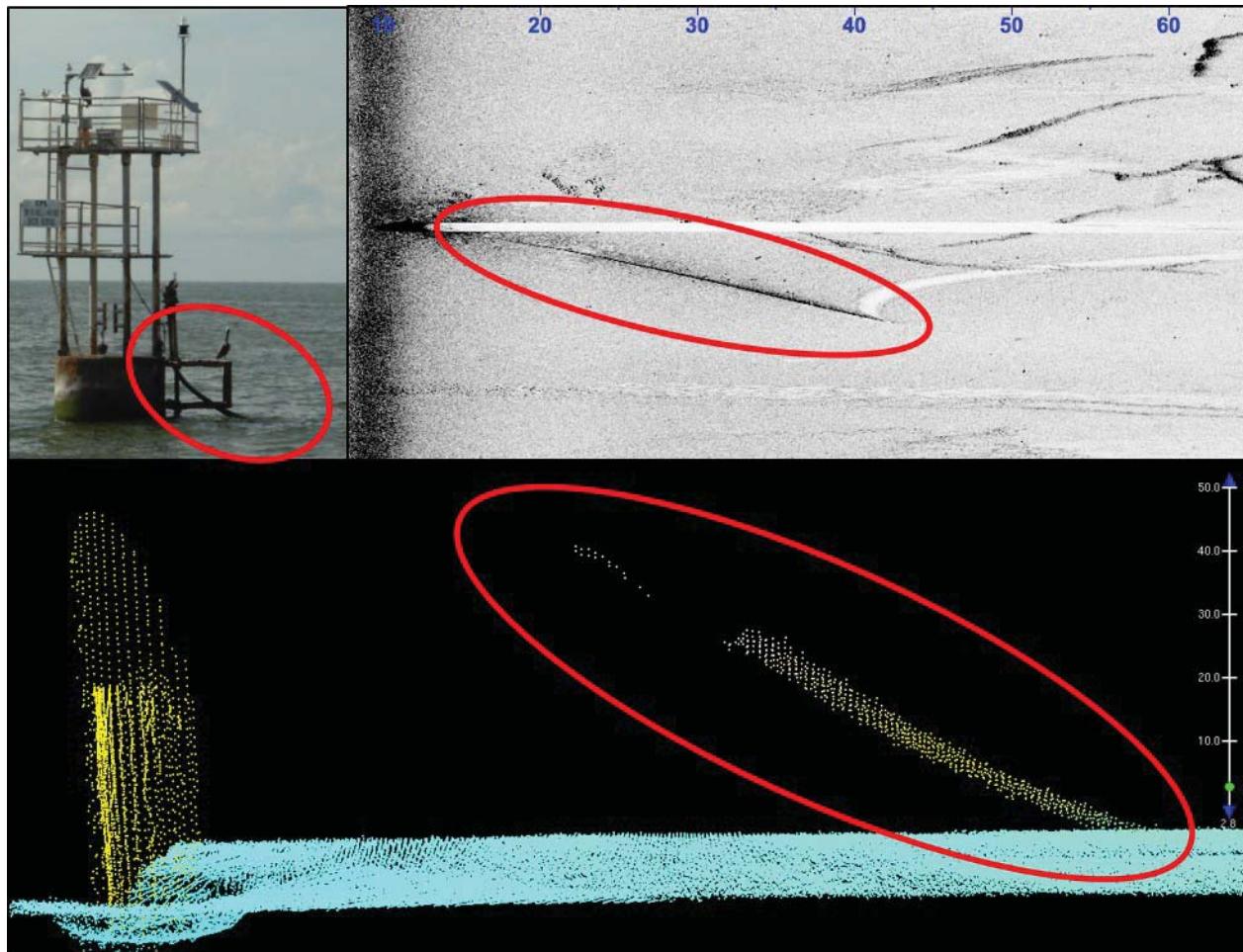
A pipe arch, included in the Non-DTON Seeps and Pipelines report, was not cause for DTON notification due to its relative depth and proximity to a surveyed (and charted) platform but is recommended for inclusion on the chart as an obstruction. The pipe arch is located at position 29-23-02.42N, 91-46-07.95W (Figure 21).

There exists a feature at position 29-17-19.27N, 91-49-40.29W that, for a number of reasons, does not meet the criteria for DTON notification. Nor does this feature meet the criteria for sounding designation given that it is less than 1.0 meter proud of the seafloor. However, based on the hydrographer's discretion, the least depth on this feature was designated. This feature is just outside the 50-meter search radius for a CSF-assigned BSSE Wellhead and within the search radius of a missing platform. It is likely that the feature is

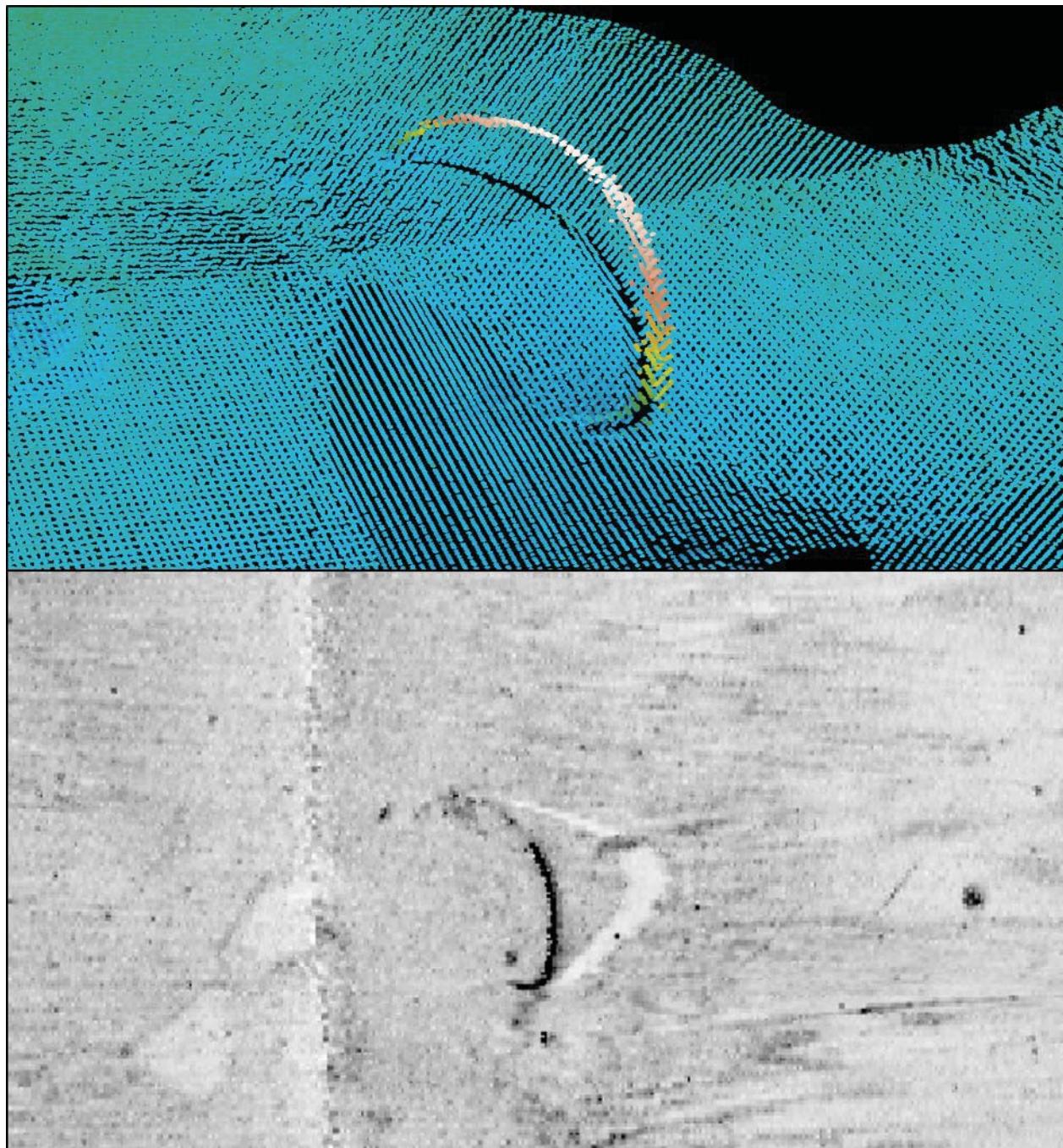
associated with one or the other of these CSF-assigned structures but, given that it is outside of the BSSE Wellhead search radius, the feature was not associated with the BSSE Wellhead in the FFF.

It is recommended that an obstruction symbol is placed at the one surveyed BSSE Wellhead mentioned in the Charted Features section above. As mentioned above, due to its as-surveyed position in relation to the CSF assigned position of 29-16-40.41N, 91-53-18.46W the wellhead was attributed "update" in the FFF. The distance between the CSF-assigned wellhead and the as-surveyed wellhead is <10 meters. The wellhead obstruction was surveyed at position 29-16-40.28N, 91-53-18.78W with a least depth of 20 feet (6.20 m ±0.40 TPU). The nominally 1.1 meter tall feature is shown in Figure 22.

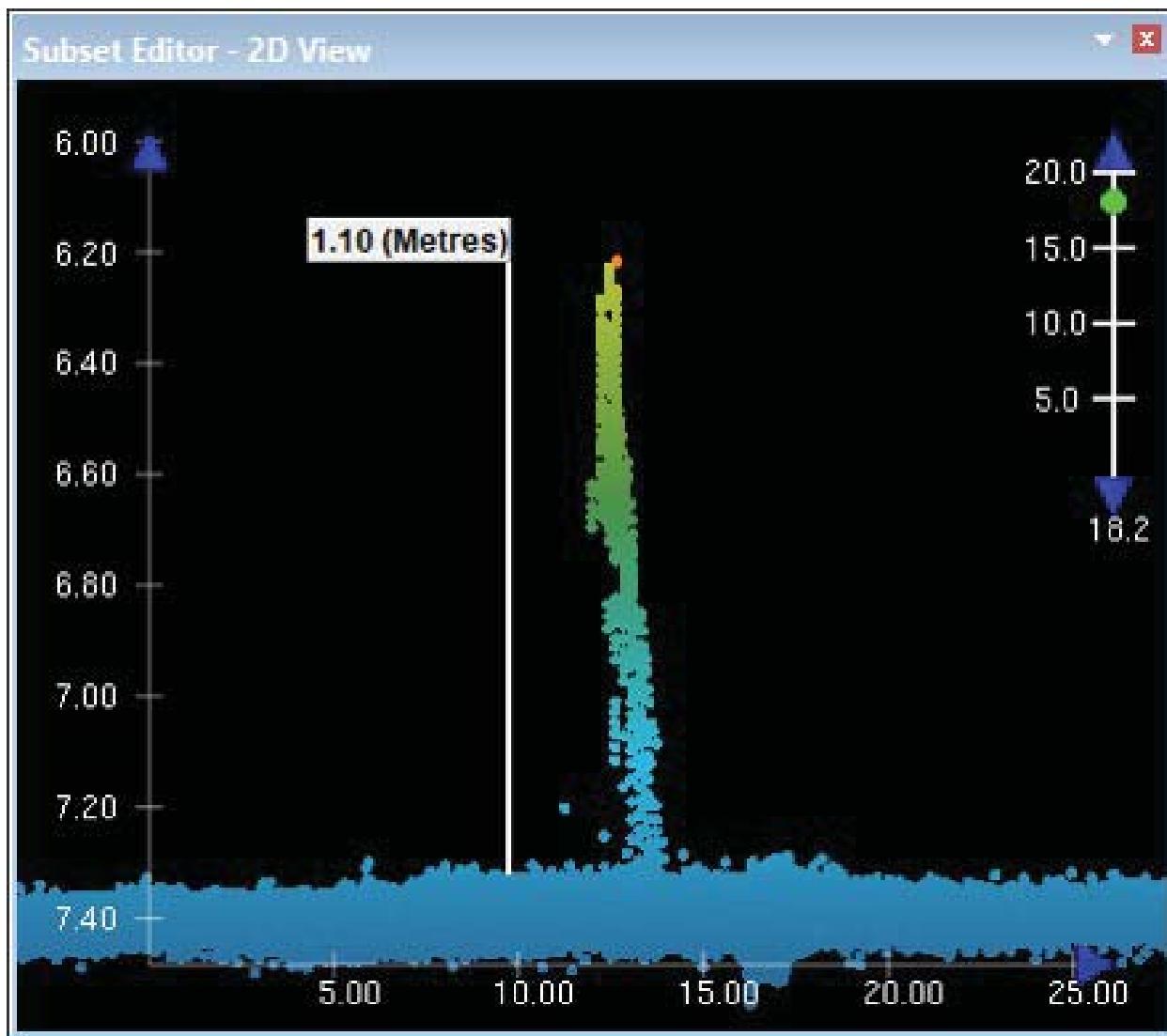
Three (3) DTOMs, Survey H13042 DTOMs #6, #7, and #8, were issued for uncharted features. In each case the DTOM recommends that the feature is charted as an obstruction.



*Figure 20: A pipe was surveyed (below water) and observed visually at the surface where it is attached to a platform.*



*Figure 21: A pipe arch was surveyed at position 29-23-02.42N, 91-46-07.95W which is in close proximity to a charted platform.*



*Figure 22: A BSSE Wellhead was surveyed at position 29-16-40.28N, 91-53-18.78W which is close to the CSF-assigned position.*

#### D.1.5 Shoal and Hazardous Features

The methods employed in conducting the Shoal and Hazard Features analysis are the same as described above for the Chart Comparison discussion.

There is a general shoaling across the extents of Survey H13042 with shoaling severity generally increasing moving south (least change) to north (most change). However, the greatest change is in the eastern region of the survey near a 21-foot sounding located at position 29-19-42.48N, 91-48-16.08W. In general it can be stated that no new dangerous shoals were surveyed. Rather, a complete rework of the charted soundings and contours on the affected ENC/RNC products is required.

A presently charted Caution Area (CTNARE) overlaps the far eastern extent of Survey H13042. The CTNARE (Note C on RNC 11349 and Note D on RNC 11351) properly describes the charted data resulting

from Survey D00137 and as such should remain, "The hydrography within the heavy dashed black line was surveyed by NOS in 2005. A shoaling condition has been observed in relation to prior surveys. The density of this most recent survey data is inadequate to rule out the possibility of shoaler depths or undetected submerged features in these areas."

Eight (8) DTON reports were issued for Survey H13042.

### **D.1.6 Channels**

No channels exist for this survey. There are no designated anchorages, precautionary areas, safety fairways, traffic separation schemes, pilot boarding areas, or channel and range lines within the survey limits.

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

Eleven (11) bottom samples were acquired in close proximity to the recommended positions included in the PRF provided with the OPR-K354-KR-17 Project Instructions. Both vessels shared responsibility for sediment sample acquisition. On each vessel a sediment sampler was deployed from a davit to acquire the requisite sample. Bottom sample locations were logged in a target file in HYPACK SURVEY. Once the sample was on deck it was photographed and classified based on the criteria outlined in Appendix H, Bottom Classification, in the HSSD. In general, sediment was found to be in keeping with anticipated nearshore, coastal Louisiana sediments and ascharted conditions. Specifically, sediment within Survey H13042 is generally soft mud with some samples containing shells.

## **D.2 Additional Results**

### **D.2.1 Shoreline**

Shoreline was not assigned in the Hydrographic Survey Project Instructions or Statement of Work.

### **D.2.2 Prior Surveys**

Prior survey data exist for this survey area. However, with the exception of the assigned junction surveys, prior data were not investigated.

### **D.2.3 Aids to Navigation**

No Aids to navigation (ATONs) exist for this survey.

## D.2.4 Overhead Features

No overhead features exist for this survey.

## D.2.5 Submarine Features

As discussed above, thirty eight (38) assigned and one (1) unassigned, charted pipelines (PIPSOL) are located within Survey H13042. On RNC 11349 and RNC 11351, only magenta pipeline symbols are shown. This symbol represents supply pipelines for oil, gas, chemicals, or water, according to U.S. Chart No. 1: Symbols, Abbreviations and Terms used on Paper and Electronic Navigational Charts. None of the Information contained within ENC US4LA15M, ENC US4LA21M, or the CSF refute the RNC symbolism. None of the charted pipelines have a buried depth value (BURDEP). Six (6) of the ENC charted pipelines have a status of "disused." The majority of the charted pipelines were not visible in the SSS or MBES data.

All ENC pipelines within the survey area have a RNC counterpart. With a few exceptions all CSF assigned pipelines are represented (within the survey area) on ENC US4LA15M and ENC US4LA21M as well as the large scale RNCs of the area, RNC 11349 and RNC 11351. The pipelines are not represented on ENC US3GC03M or RNC 11340. CSF vs. ENC vs. RNC pipeline inconsistencies are summarized below.

At the following general locations, pipelines shown on the large scale ENCs and RNCs are not included in the CSF:

29-20-43.08N, 91-52-49.58W

29-19-24.07N, 91-53-28.61W

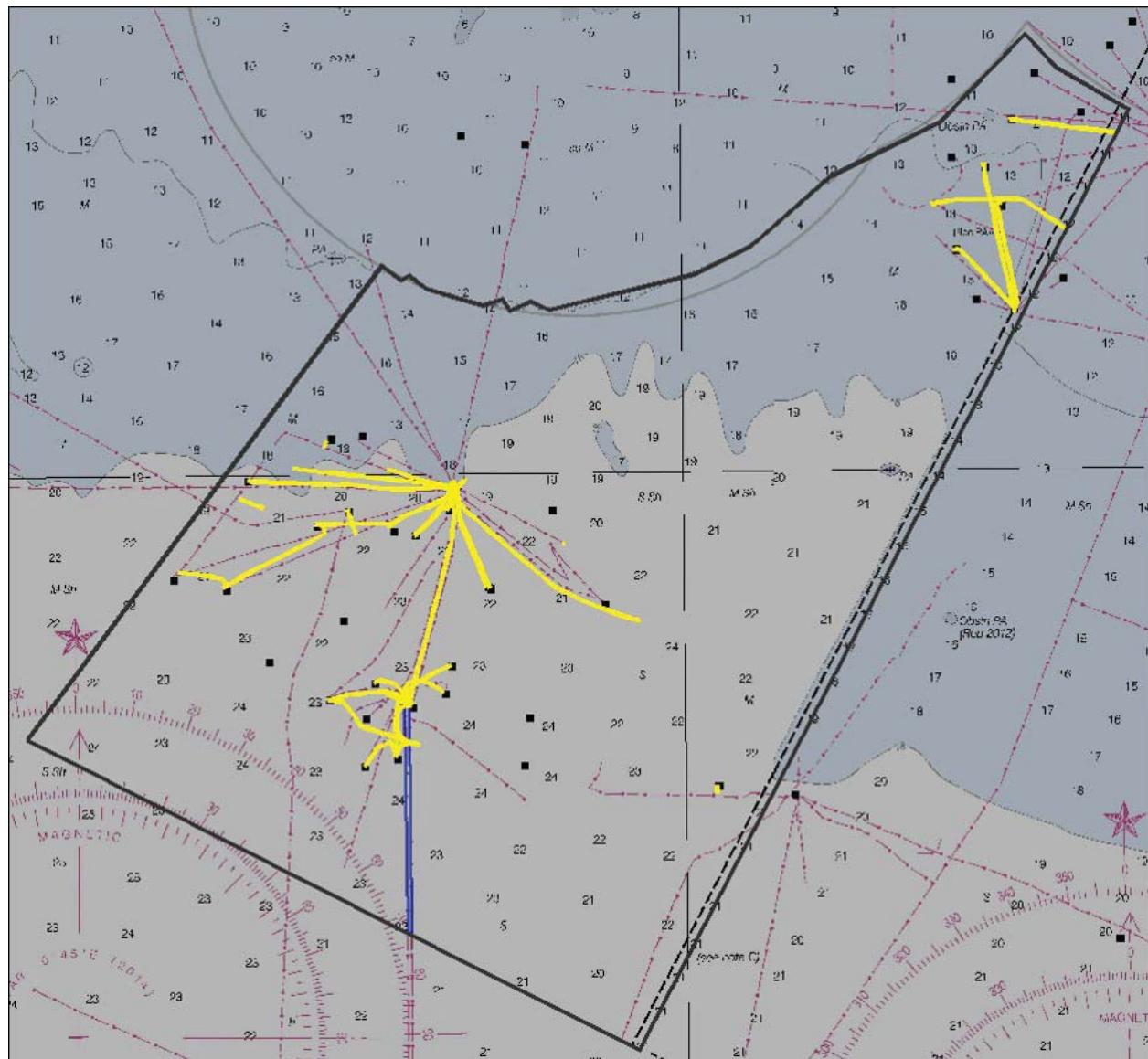
29-22-29.47N, 91-46-23.48W

At the following general location a pipeline included in the CSF is not shown on the corresponding ENC US4LA21M and RNC 11351: 29-22-17.39N, 91-47-04.40W.

To further the submarine features discussion an alternate pipeline information source was consulted. The consult includes review of information contained in a pipeline shape file (.SHP) downloaded from the Bureau of Ocean Energy Management (BOEM) on November 30, 2017. Prior to including the BOEM shape file in this analysis, the portion of the shape file that intersects with the OPR-K354-KR-17 project area was reprojected to UTM, Zone 15N, NAD83 and saved as a .DXF file. In CARIS HIPS/SIPS the BOEM pipeline .DXF file was then visually compared to the charted pipelines within the project area to identify any potentially uncharted BOEM pipelines.

All but two charted pipelines have a BOEM pipeline counterpart. However, the results of the analysis suggest that there may be over a dozen uncharted BOEM-listed pipe segments within Survey H13042. Figure 23 depicts uncharted BOEM pipelines (yellow) and charted pipelines without a BOEM counterpart (blue).

The shape file, "ppl\_arcs.shp" (contained within ppl\_arcs.zip) and re-projected .DXF file, "BOEM\_Pipelines\_UTM\_15N\_NAD83\_Meters.dxf" are included with the digital deliverables along with the RNC/ENC charts considered in the chart comparison. BOEM pipeline data were obtained at the following web address: <https://www.data.boem.gov/Main/Mapping.aspx>



*Figure 23: BOEM-defined pipelines that are not charted are highlighted in yellow in reference to RNC 11349 and RNC 11351. The charted pipelines without BOEM counterparts are highlighted in blue. Survey H13042 sheet limits are shown in black.*

#### D.2.6 Platforms

Forty seven (47) platforms (OSFPLF) were assigned for investigation in the CSF for Survey H13042. Of the CSF platforms, thirty one (31) platforms were surveyed close to the CSF-defined position. However, all surveyed CSF platforms were greater or equal to 10 meters from the CSF position. As such, each of the surveyed CSF platforms were marked for deletion and a new platform was added to the FFF in their place (with one exception as follows).

In one case two CSF-assigned platforms, located only 8-meters apart, can both be said to have been observed visually and with SSS (see FFF features with Unique ID 87 and Unique ID 88). The two individual structures are connected by a catwalk. Both structures are over 10 meters from their CSF-assigned positions. As such, both are both recommended for deletion. However, due to their close proximity to one another and the fact that they are connected by a catwalk only one "new" platform is recommended in their place. Curiously, neither of the CSF-assigned platform positions discussed herein coincide with a nearby RNC/ENC charted platform which is presumed to represent the surveyed platform. The ENC/RNC charted platform was not include in the CSF. The ENC/RNC charted platform position is as follows: 29-21-21.31N, 91-46-47.19W.

Sixteen (16) CSF platforms were not found and are recommended for deletion as they were disproved visually at the surface and with 200% SSS coverage and partial MBES coverage within the disapproval area. A few of these "missing" platforms were recommended for deletion in the various Local Notice to Mariners and Notice to Mariners cited above. The LNM and NM recommendations follow:

LNM 28/17, CGD08  
DELETE Platform (Texaco-197-12)  
29-18-43.000N, 091-50-26.000W  
DELETE Platform (Texaco-197-9)  
29-19-23.000N, 091-51-09.000W

NM 40-17  
11349 46Ed. 3/14 LAST NM 37/17 40/17  
Delete  
Platform 29-19-56N, 91-52-07W  
Platform 29-20-23N, 91-53-50W  
Platform 29-17-43N, 91-53-16W

One of the aforementioned NM-recommended deletions is believed to be erroneous and, in fact, is cause for a DTON. The CSF platform at position 29-19-55.83N, 091-52-06.79W (NM 29-19-56N, 91-52-07W) was surveyed at nearly the CSF defined position. This platform was actually charted at the outset of the survey but was removed from the chart during the course of the survey. As of preparation of this section of the report, December 14, 2017, this platform remains missing from the chart. The uncharted platform thus is cause for a DTON. This uncharted platform is included in H13042 DTON #5.

Five (5) platform related DTONs were issued for Survey H13042. Each of the DTONs describes a newly surveyed, uncharted platform. The DTON platform positions follow:

DTON #1, 29-17-14.03N, 91-51-33.60W  
DTON #2, 29-18-51.83N, 91-52-53.51W  
DTON #3, 29-17-42.56N, 91-52-34.13W  
DTON #4, 29-18-08.32N, 91-52-53.02W  
DTON #5, 29-19-56.63N, 91-52-14.99W along with, as mentioned above, 29-19-56.51N, 91-52-07.37W  
All of the DTON platforms are represented in the BOEM platform shape file (discussed below).

Images are included in the FFF for all verified platforms. The existing platforms are as follows (positions per CSF):

29-19-07.08N, 91-54-56.24W  
29-19-01.46N, 91-54-25.54W  
29-19-57.60N, 91-54-12.91W  
29-18-24.72N, 91-54-00.75W  
29-19-33.88N, 91-53-33.04W  
29-18-05.38N, 91-53-26.20W  
29-20-18.06N, 91-53-24.34W  
29-18-45.37N, 91-53-17.42W  
29-19-40.89N, 91-53-14.60W  
29-17-31.12N, 91-53-06.25W  
29-17-55.71N, 91-53-05.39W  
29-18-13.04N, 91-53-00.04W  
29-19-30.90N, 91-52-48.21W  
29-17-35.16N, 91-52-46.80W  
29-18-01.15N, 91-52-38.24W  
29-19-28.75N, 91-52-35.36W  
29-18-08.10N, 91-52-19.03W  
29-19-41.25N, 91-52-15.59W  
29-18-22.13N, 91-52-15.13W  
29-19-55.83N, 91-52-06.78W  
29-19-02.15N, 91-51-53.81W  
29-19-01.01N, 91-51-51.72W  
29-21-51.45N, 91-47-20.40W  
29-21-26.21N, 91-47-09.15W  
29-22-33.23N, 91-47-03.24W  
29-22-13.46N, 91-46-54.13W  
29-22-57.11N, 91-46-47.75W  
29-21-19.00N, 91-46-47.00W  
29-21-19.20N, 91-46-46.80W  
29-23-20.71N, 91-46-33.88W  
29-23-00.88N, 91-46-07.32W

To further the offshore platform discussion an alternate platform information source was consulted. The consult includes review of information contained in a platform shape file (.SHP) downloaded from the Bureau of Ocean Energy Management (BOEM) on November 30, 2017. Prior to including the BOEM shape file in this analysis, the portion of the shape file that intersects with the OPR-K354-KR-17 project area was reprojected to UTM, Zone 15N, NAD83 and saved as a .DXF file. In CARIS HIPS/SIPS the BOEM platform .DXF file was then visually compared to the charted platforms within the project area to identify any potentially uncharted BOEM platforms. The shape file, "platforms.shp" (contained within platforms.zip) and re-projected .DXF file, "BOEM\_Platforms\_UTM\_15N\_NAD83\_Meters.dxf" are included with the digital deliverables along with the RNC/ENC charts considered in the chart comparison. BOEM platform data were obtained at the following web address: <https://www.data.boem.gov/Main/Mapping.aspx>

### **D.2.7 Ferry Routes and Terminals**

No ferry routes or terminals exist for this survey.

### **D.2.8 Abnormal Seafloor and/or Environmental Conditions**

Abnormal seafloor and/or environmental conditions were not observed for this survey.

### **D.2.9 Construction and Dredging**

Except for the presence of temporary jackup barges attending to platform maintenance, no other construction or dredging was observed within the survey limits at the time of data acquisition.

### **D.2.10 New Survey Recommendation**

No new surveys or further investigations are recommended for this area.

### **D.2.11 Marine Mammal Observations**

Per direction in Section 1.5 of the HSSD all personnel aboard the survey vessel used during Project OPR-K354-KR-17 were "trained" as Marine Mammal Observers prior to commencement of the survey. Training consisted of each surveyor and vessel crew member watching the US Navy video referenced in the HSSD.

As noted multiple times in the survey acquisition log, large, mobile water column sonar targets (assumed to be dolphins) were ensonified by either the MBES or the SSS. The dolphin-assumption is based on both the size and behavior of the sonar targets. Often times these observations did not coincide with a visual (above water) sighting. Visual observations, when noted, were recorded on NOAA/NMFS,AFSC/NMML Form 11US (POP) which is included as Appendix L of the HSSD.

Completed digital 11US (POP) forms were compiled and transmitted along with the Project's digital marine mammal training record to [pop.information@noaa.gov](mailto:pop.information@noaa.gov) and [ocs.ecc@noaa.gov](mailto:ocs.ecc@noaa.gov) with a CC to the Project's COR, Starla Robinson. These records are also included in Descriptive Report Appendix II.

### **D.2.12 Coast Pilot Review**

In reference to the OPR-K354-KR-17 survey area the Coast Pilot Report, included with the July 6, 2017 Final Data Package, states that, "there are no paragraphs included in the U.S. Coast Pilot 5 that describe this area and thus, there are no investigation items to be listed." The survey area considered in the Coast Pilot Report does not exactly match the area ultimately surveyed. However, the Report's "no-investigations" statement still applies to the area actually surveyed. Furthermore, the Hydrographic Survey Project Instructions contained only general guidance regarding the Coast Pilot. As such OSI was not able to "respond to each question posed in the Coast Pilot Field Report" as mentioned in Section 8.1.3 of the HSSD.

In lieu of targeted responses to an assigned Coast Pilot Field Report, OSI conducted a general review of relevant Coast Pilot excerpts. Specifically, pertinent paragraphs from the following Coast Pilot section were considered: Coast Pilot 5 - 45th Edition, 2017 updated through 12-October-2017, Mississippi River to Sabine Pass.

Within the Coast Pilot Edition mentioned above there are no specific, detailed, relevant entries concerning the assigned H13042 survey area. Rather, only entries of a general nature are mentioned and are not refutable based on the observations of the OSI field team. Regarding "areas frequently transited and facilities utilized during in-ports" (as mentioned in the HSSD Section 8.1.3), Coast Pilot entries are somewhat more relevant. However, there are only a few Coast Pilot entries that OSI's general review attempts to address as most entries were not relevant to the "areas frequently transited by the survey vessel and facilities utilized during in-ports."

OSI's Coast Pilot Review Report and the original Coast Pilot Report, mentioned above, were transmitted to ocs.nbd@noaa.gov and coast.pilot@noaa.gov with a CC to the Project's COR, Starla Robinson. These records are also included in Descriptive Report Appendix II.

#### **D.2.13 Inset Recommendation**

No new insets are recommended for this area.

## 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.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meet or exceed requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables, Field Procedures Manual, Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

Report Name	Report Date Sent
Data Acquisition and Processing Report	2018-01-19
Horizontal and Vertical Control Report	2018-01-19

Approver Name	Approver Title	Approval Date	Signature
George G. Reynolds	Chief of Party	01/31/2018	

Digitally signed by  
George G. Reynolds  
Date: 2018.01.31  
16:55:31 -05'00'  


## F. Table of Acronyms

Acronym	Definition
<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>	Continually 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>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>HSSD</b>	Hydrographic Survey Specifications and Deliverables

<b>Acronym</b>	<b>Definition</b>
<b>HSTP</b>	Hydrographic Systems Technology Programs
<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>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>NAIP</b>	National Agriculture and Imagery Program
<b>NALL</b>	Navigable Area Limit Line
<b>NM</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>PRF</b>	Project Reference File

<b>Acronym</b>	<b>Definition</b>
<b>PS</b>	Physical Scientist
<b>PST</b>	Physical Science Technician
<b>RNC</b>	Raster Navigational Chart
<b>RTK</b>	Real Time Kinematic
<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>ST</b>	Survey Technician
<b>SVP</b>	Sound Velocity Profiler
<b>TCARI</b>	Tidal Constituent And Residual Interpolation
<b>TPE</b>	Total Propagated Error
<b>TPU</b>	Topside Processing Unit
<b>USACE</b>	United States Army Corps of Engineers
<b>USCG</b>	United Stated Coast Guard
<b>UTM</b>	Universal Transverse Mercator
<b>XO</b>	Executive Officer
<b>ZDA</b>	Global Positiong System timing message
<b>ZDF</b>	Zone Definition File

## **Appendix I**

### **Tides and Water Levels**

The following table summarizes the days in which data were collected that contribute to the final accepted data set.

**Table 1**  
**Abstract of Times of Hydrography**

Date	Day Number	Min. Time UTC	Max. Time UTC
8/6/2017	218	01:28:09	13:12:44
9/2/2017	245	03:52:54	23:48:30
9/3/2017	246	00:33:55	23:48:42
9/4/2017	247	00:40:04	23:46:36
9/5/2017	248	00:15:51	23:49:18
9/6/2017	249	00:25:32	12:54:45
9/8/2017	251	04:38:37	11:51:13
9/9/2017	252	19:53:30	23:55:49
9/10/2017	253	00:11:40	05:20:09
9/12/2017	255	20:37:42	23:34:32
9/13/2017	256	15:54:32	16:17:03
9/14/2017	257	13:46:05	23:51:30
9/15/2017	258	00:22:07	23:44:34
9/16/2017	259	00:27:05	22:35:54
9/27/2017	270	21:16:11	22:30:19
9/28/2017	271	11:30:28	23:51:17
9/29/2017	272	00:29:05	14:47:34
10/10/2017	283	14:22:38	23:43:11
10/11/2017	284	21:12:23	22:15:22
10/12/2017	285	13:36:51	13:41:27

Tide/water levels for this project were provided exclusively by NOAA as verified data from NOAA Tide Station 876-4227, LAWMA, LA. The project is located within zones indicated by preliminary tidal zoning included in the project Statement of Work. Time and range corrections were applied to LAWMA, LA (876-4227) verified tide data according to Table 2.

Based on the results of crossline analysis, it appears that the time and range factors as provided in the preliminary zoning scheme are adequate.

Coordinated Universal Time (UTC) was used to annotate the tide records and all other data obtained for this project.

Preliminary tide correctors were retrieved daily from the CO-OPS website. Verified tides were retrieved as they were made available by CO-OPS. Tide data were applied to processed soundings employing the CARIS “Import Tide to HIPS” function.

A slightly altered version of the CARIS-format zoning file, “K354KR2017rev.zdf” (provided by CO-OPS), was employed to facilitate the application of final tide zoning scheme factors. During data processing OSI discovered a minor flaw in the 6<sup>th</sup> vertex of CO-OPS-provided Zone #82; the vertex did not fall exactly on a nearby vertex of the adjacent zone which is the presumed intention of CO-OPS. The result was a long, narrow, triangular area with no zoning coverage. The non-coverage triangle had two legs roughly 11.6 kilometers long with the third leg being only about 4 meters long. OSI adjusted the Zone #82 vertex which resulted in elimination of the non-coverage area. The 6<sup>th</sup> vertex as delivered by CO-OPS was 29.448176, -92.096407. OSI changed this vertex to 29.448128, -92.096409. In making the edit neither time nor magnitude multiplier changes were made to the preliminary zoning file. The OSI-edited zoning file, included with the project deliverables, uses the same name as noted above, i.e. the file name, as delivered by CO-OPS, was retained.

**Table 2**  
**Tide Zones Associated with Project OPR-K354-KR-17**

<b>Zone</b>	<b>Time Correction</b>	<b>Range Correction</b>
65	-60	0.94
66	-60	1.03
82	-72	1.31
115	-78	1.28
154	-72	1.22
182	-60	1.12
189	-84	1.31
191	-66	1.12
193	-72	1.25
263	-66	1.03

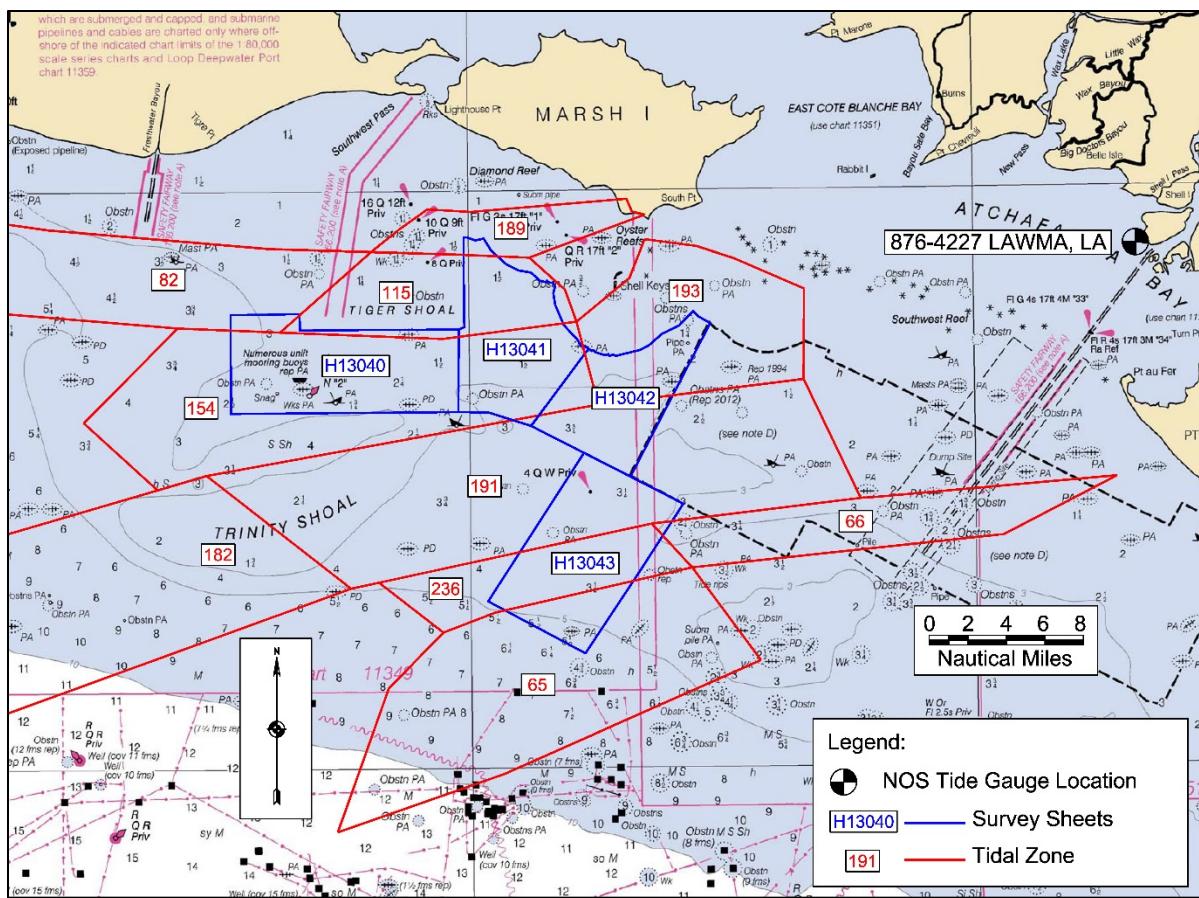


Figure 1. Project survey boundaries (blue lines), tidal zone boundaries (red lines), and the LAWMA, LA tide station location. In this figure the western end of Tide Zones 182 and 82 have been cropped for the sake of clarity of the 2017 project area.

**APPENDIX II**

**SUPPLEMENTAL SURVEY RECORDS  
AND CORRESPONDENCE**

**From:** Starla Robinson - NOAA Federal [<mailto:starla.robinson@noaa.gov>]  
**Sent:** Friday, November 17, 2017 5:56 PM  
**To:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>  
**Cc:** Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>  
**Subject:** Re: CSF "assigned" features in "unassigned" sheets

Hello George,

To confirm, OSI is not responsible for the CSF assigned features that are outside the surveyed area beyond the surveyed extent defined by what OSI was able to complete of the main scheme before squaring off (H13040 through H13043).

I absolutely agree with the assumption and thanks for asking.

Happy Holidays,  
Starla

H13043	4	17 Miles South of South Point	Louisiana	40000	53	Additional sheet not yet assigned. As the LNM are completed, the KR will square off the acquired area and ensure the full investigation of any features within the surveyed extent.
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*Starla D. Robinson, Physical Scientist  
NOS - OCS - Hydrographic Survey Division - Operations Branch  
National Oceanic Atmospheric Administration  
Office: **240-533-0034** (Updated 6/13/17)  
Cell: 360-689-1431  
Website: [HSD Planned Hydrographic Surveys](#)*

On Fri, Nov 17, 2017 at 4:41 PM, George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)> wrote:

Hi Starla,

We have begun writing the project reports and, in re-reading the various project documentation and reviewing files, we noticed the following potential bookkeeping/reporting issue. You may recall that the Draft Project Instructions, Composite Source File (CSF) and Project Reference File (PRF) considered a seven-sheet survey program. The Final Project Instructions and PRF consider the survey that was ultimately conducted, a four-sheet survey. However, the Final CSF does not reflect the change from seven sheets to four sheets. As such the Final CSF includes many "assigned" features that fall well outside of the four-sheet survey. We don't believe that NOAA intended for us to cover the 100+ CSF "assigned" features that fall outside of the assigned survey area, i.e. within the three sheets that were dropped from the original "draft" survey program. However, we have no documentation attesting to such. Assuming you agree with this assumption, would you please document that OSI is not responsible for investigating any features beyond those located within the four (4) assigned sheets. We will include your correspondence in with the Project Deliverables, i.e. a page in DR Appendix II, Correspondence.

Thanks, George

From: Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)>  
Date: 12/11/17 5:46 PM (GMT-05:00)  
To: GGR Backup <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>  
Cc: Douglas Wood - NOAA Affiliate <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>, Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>, Briana Welton - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>, Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>, Martha Herzog - NOAA Federal <[martha.herzog@noaa.gov](mailto:martha.herzog@noaa.gov)>  
Subject: Re: Platform vs. Update Clarification

Hello George,

Include both the significant wellheads and platform features in the FFF, and reposition any platform that deviates greater than 10 meter from the center point of the corresponding charted feature, based on the page 97 of the HSSD. These are all delete/add for the charted platforms.

Thank you,  
Starla

--  
*Starla D. Robinson, Physical Scientist  
NOS - OCS - Hydrographic Survey Division - Operations Branch  
National Oceanic Atmospheric Administration  
Office: 240-533-0034 (Updated 6/13/17)  
Cell: 360-689-1431  
Website: [HSD Planned Hydrographic Surveys](#)*

On Wed, Dec 6, 2017 at 10:19 AM, GGR Backup <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)> wrote:

Good morning Starla,

We would like some S-57 clarification/guidance regarding offshore platforms and BSSE wellheads in close proximity to each other. Please see the attached PDF.

In the 2 examples provided and many other cases the wellhead position is much closer to the surveyed positioned of the platform and the surveyed platform position is greater than 20 meters from the CSF platform position. Given our survey scale of 1:40,000, what are the distance thresholds for updating vs new/delete for a feature position?

Should we mark both the CSF wellhead and CSF platform as "delete" and create a new platform feature at the surveyed position? Or, mark the welhead as "delete" and the platform as "retain" at the CSF position?

Thanks,

George

## **Reference HSSD 7.5.2**

New/Delete vs. Update:

1. Charted feature is found in new position via multibeam, lidar, vessel-mounted laser scanning, or any remote sensing system capable of generating a georeferenced point cloud sufficient to differentiate features at survey scale, regardless of proximity to charted feature:

- descrp = Delete for charted feature (delivered from CSF)
- descrp = New for surveyed feature (derived from grid sounding for multibeam and lidar, derived from point cloud for laser scanning)

2. Charted feature is found via visual observation or handheld laser range finder, within 10 m of the charted feature:

- descrp = Update (populate surveyed height/depth of feature, not position)

3. Charted feature is found via visual observation or handheld laser range finder, greater than 10 m from the charted feature:

- descrp = Delete for charted feature (delivered from CSF)
- descrp = New for surveyed feature (derived from visual observation or handheld laser range finder)

4. Charted line or area feature geometry has changed.

- descrp = Update; then manually edit the geometry

Note: if the new area extents border the edge of bathymetry, instead of manually editing the geometry, the hydrographer may use 'recomd' = edit the geometry to extents of bathymetry

OR when extensive geometry changes are needed:

- descrp = Delete for incorrectly charted feature

**CSF Investigation Requirements:**

Platform. If visually confirmed, include in FFF with descrp=retain. If not visible, conduct a feature disproval (Section 7.3.4) and if disproved, include in FFF with descrp = delete.

BSSE wellhead. See Project Instructions for further information. Contact HSD Project Manager/COR for clarification, if needed.

**Project Instructions:**

With respect to wellheads, reference HSSD Chapter 7.5.1. If a wellhead is not found, for the purposes of disproval, a 50 m search radius shall be used following the feature disproval techniques for a complete coverage survey outlined in HSSD Section 7.3.4. Include feature in the FFF with descrp = delete.

**From:** Starla Robinson - NOAA Federal [mailto:[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)]  
**Sent:** Tuesday, December 12, 2017 5:19 PM  
**To:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>  
**Cc:** David T. Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>; Douglas Wood - NOAA Affiliate <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Martha Herzog - NOAA Federal <[martha.herzog@noaa.gov](mailto:martha.herzog@noaa.gov)>  
**Subject:** Re: non-DTON pipelines and seeps in the FFF

Hello George,

Excellent question.

The current requirement of the "Non-DTON Seep and Pipeline Report" is a separate deliverable from the FFF. Your historic method of including the pipeline segments in the FFF is good. How you manage the other features is up to your discretion. The features that are not cartographically significant they will be ignored in the FFF.

Thank you,

Starla

--

*Starla D. Robinson, Physical Scientist*  
NOS - OCS - Hydrographic Survey Division - Operations Branch  
National Oceanic Atmospheric Administration  
Office: **240-533-0034** (Updated 6/13/17)  
Cell: 360-689-1431  
Website: [HSD Planned Hydrographic Surveys](#)

On Mon, Dec 11, 2017 at 2:06 PM, George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)> wrote:

Hi Starla,

We are compiling the "Non-DTON Seep and Pipeline Report" and FFF files for our sheets and have a question about pipeline FFF attribution.

The pipeline investigation requirements are "See HSSD Section 1.6.2 for Elevated Pipeline guidance or Section 1.7 for Non-DTON Exposed Pipeline guidance. If pipeline is not elevated or exposed, include in FFF with descrp = retain."

HSSD Sections 1.7 and 1.6.2 are straight forward but we are not as clear on the FFF requirements.

How should pipelines that have exposed sections or seeps be attributed in the FFF? Also, should the exposed pipelines and seeps be included in the FFF separately from the full-length pipeline object?

In prior years we have included exposed pipelines in the FFF because they were full DtoNs per the older HSSDs, but have not included the seeps as they were not physical features.

Thanks, George

From: [Alexandra.Grodsky@noaa.gov](mailto:Alexandra.Grodsky@noaa.gov) [mailto:[Alexandra.Grodsky@noaa.gov](mailto:Alexandra.Grodsky@noaa.gov)]  
Sent: Thursday, December 14, 2017 11:30 AM  
To: [jjd@oceansurveys.com](mailto:jjd@oceansurveys.com)  
Subject: NCEI acceptance confirmation for Reference ID: GUTAE6

Dear Joseph DiPalma:

Thank you for sending your data and metadata files to the NOAA National Centers for Environmental Information (NCEI). NCEI received these data, SOUND VELOCITY collected from R/V Ocean Explorer in Gulf of Mexico from 2017-08-04 to 2017-10-12, on 2017-12-07 21:47:46 via S2N.

After reviewing your submission package (metadata and data), I assigned your submission an NCEI Accession Number 0169266. This number is a tracking identifier for the NCEI Ocean Archive. Please reference this number when corresponding with NCEI about these data.

You can find information about these archived data at <http://accession.nodc.noaa.gov/0169266>.

After further reviewing your data, creating any additional representations of these data in a format that is more preservable in the NCEI Ocean Archive, and developing necessary tracking metadata, NCEI will publish these archived data online. You may access the archival copy of your original data via the link listed above.

In addition to creating an archival copy of these data, NCEI may include all or part of your data into one or more product databases, such as the World Ocean Database.

Please let me know if you have any questions or if you have additional data and documentation that you would like to archive with these data.

Thank you again for choosing to archive your data with the National Centers for Environmental Information (NCEI).

Regards,  
Alexandra Grodsky  
[Alexandra.Grodsky@noaa.gov](mailto:Alexandra.Grodsky@noaa.gov)

---

Subject: [Send2NCEI] data submission confirmation for Reference ID: GUTAE6  
To: [jjd@oceansurveys.com](mailto:jjd@oceansurveys.com)  
From: [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov)

Dear Joseph DiPalma,

Thank you for submitting your data collection, titled "SOUND VELOCITY collected from R/V Ocean Explorer in Gulf of Mexico from 2017-08-04 to 2017-10-12", to the NOAA National Centers for Environmental Information (NCEI). Your submission package has been assigned Reference ID: GUTAE6. After reviewing your data and metadata, NCEI will update you about the archival status of your submission package.

You will be notified if NCEI creates an archival information package (acquisition) of your data, including the unique identifier for that archival information package (the NCEI Accession number). When your data are archived, NCEI keeps an exact copy of the data and metadata you sent and will develop necessary tracking and discovery metadata. In addition, NCEI may create additional versions to ensure your data are preserved for long-term access.

Upon completion of these archival ingest actions, NCEI will publish your data online (including a copy of your original files). You will receive another email once your submission package (Reference ID: GUTAE6) is published for global access. In addition, NCEI may include all or part of your data into one or more product databases, such as the World Ocean Database.

If you have any questions about NCEI archival processes, please contact [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov). Also, if at any time you wish to update your submission package, please send an e-mail to [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov) with your request. Please remember to include your submission package Reference ID.

Thank you again for choosing to archive your data with the National Centers for Environmental Information (NCEI).

NCEI Data Officer Team  
NOAA National Centers for Environmental Information NOAA/NESDIS  
1315 East-West Highway  
Silver Spring, MD 20910  
USA

From: [Alexandra.Grodsky@noaa.gov](mailto:Alexandra.Grodsky@noaa.gov) [mailto:[Alexandra.Grodsky@noaa.gov](mailto:Alexandra.Grodsky@noaa.gov)]  
Sent: Thursday, December 14, 2017 11:30 AM  
To: [jjd@oceansurveys.com](mailto:jjd@oceansurveys.com)  
Subject: NCEI acceptance confirmation for Reference ID: JG5TKB

Dear Joseph DiPalma:

Thank you for sending your data and metadata files to the NOAA National Centers for Environmental Information (NCEI). NCEI received these data, SOUND VELOCITY collected from R/V Osprey in Gulf of Mexico from 2017-09-01 to 2017-10-12, on 2017-12-07 21:55:48 via S2N.

After reviewing your submission package (metadata and data), I assigned your submission an NCEI Accession Number 0169267. This number is a tracking identifier for the NCEI Ocean Archive. Please reference this number when corresponding with NCEI about these data.

You can find information about these archived data at <http://accession.nodc.noaa.gov/0169267>.

After further reviewing your data, creating any additional representations of these data in a format that is more preservable in the NCEI Ocean Archive, and developing necessary tracking metadata, NCEI will publish these archived data online. You may access the archival copy of your original data via the link listed above.

In addition to creating an archival copy of these data, NCEI may include all or part of your data into one or more product databases, such as the World Ocean Database.

Please let me know if you have any questions or if you have additional data and documentation that you would like to archive with these data.

Thank you again for choosing to archive your data with the National Centers for Environmental Information (NCEI).

Regards,  
Alexandra Grodsky  
[Alexandra.Grodsky@noaa.gov](mailto:Alexandra.Grodsky@noaa.gov)

---

Subject: [Send2NCEI] data submission confirmation for Reference ID: JG5TKB  
To: [jjd@oceansurveys.com](mailto:jjd@oceansurveys.com)  
From: [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov)

Dear Joseph DiPalma,

Thank you for submitting your data collection, titled "SOUND VELOCITY collected from R/V Osprey in Gulf of Mexico from 2017-09-01 to 2017-10-12", to the NOAA National Centers for Environmental Information (NCEI). Your submission package has been assigned Reference ID: JG5TKB. After reviewing your data and metadata, NCEI will update you about the archival status of your submission package.

You will be notified if NCEI creates an archival information package (accession) of your data, including the unique identifier for that archival information package (the NCEI Accession number). When your data are archived, NCEI keeps an exact copy of the data and metadata you sent and will develop necessary tracking and discovery metadata. In addition, NCEI may create additional versions to ensure your data are preserved for long-term access.

Upon completion of these archival ingest actions, NCEI will publish your data online (including a copy of your original files). You will receive another email once your submission package (Reference ID: JG5TKB) is published for global access. In addition, NCEI may include all or part of your data into one or more product databases, such as the World Ocean Database.

If you have any questions about NCEI archival processes, please contact [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov). Also, if at any time you wish to update your submission package, please send an e-mail to [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov) with your request. Please remember to include your submission package Reference ID.

Thank you again for choosing to archive your data with the National Centers for Environmental Information (NCEI).

NCEI Data Officer Team  
NOAA National Centers for Environmental Information NOAA/NESDIS  
1315 East-West Highway  
Silver Spring, MD 20910  
USA

**From:** Starla Robinson - NOAA Federal [<mailto:starla.robinson@noaa.gov>]  
**Sent:** Monday, June 26, 2017 1:47 PM  
**To:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Emily Clark - NOAA Federal <[emily.clark@noaa.gov](mailto:emily.clark@noaa.gov)>  
**Cc:** Douglas Wood - NOAA Affiliate <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; russell.quintero <[russell.quintero@noaa.gov](mailto:russell.quintero@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>  
**Subject:** Re: Final Project Instructions OPR-K354-KR-17, Louisiana Coast, LA

Hello Emily and George,

I want to follow up on a conversation George and I had this morning.

- 1) CO-OPS will have new tide zones for the area in August. We would like to supersede the existing tide zones via a change memo when they become available.
- 2) I stated that there is no expectation that OSI collects sidescan on the crosslines.
- 3) George would like to be CCed on any emails going to OSI.

Thank you,  
Starla

--  
*Starla D. Robinson, Physical Scientist*  
NOS - OCS - Hydrographic Survey Division - Operations Branch  
National Oceanic Atmospheric Administration  
Office: **240-533-0034** (Updated 6/13/17)  
Cell: 360-689-1431  
Website: [HSD Planned Hydrographic Surveys](#)

On Mon, Jun 26, 2017 at 11:34 AM, Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)> wrote:  
Hello George,

Would OSI be willing to use a modified version of the existing zoning for now, and we will issue a memo with updated zoning in August?

Thanks,  
Starla

On Fri, Jun 23, 2017 at 10:06 PM, George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)> wrote:

Hi Starla.

In reviewing the project instructions, it appears that the preliminary tide zoning does not cover H13040 (survey priority 1).

Thanks, George

**From:** Corey Allen - NOAA Federal [mailto:[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)]  
**Sent:** Friday, January 12, 2018 1:38 PM  
**To:** Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)>  
**Cc:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Martha Herzog - NOAA Federal <[martha.herzog@noaa.gov](mailto:martha.herzog@noaa.gov)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>; David T. Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>  
**Subject:** Re: OPR-K354-KR-17, Task T-0003 1-meter surface delivery request

George,

If the set line spacing data can support the density requirements (for the swath of obtained coverage) of the more resolute grid, then you may submit the entire survey as a single 1m grid.

Corey

--

J. Corey Allen  
Chief (acting), Operations Branch  
[Office of Coast Survey](#), NOAA  
[Corey.Allen@noaa.gov](mailto:Corey.Allen@noaa.gov)  
240.533.0037 (Office)  
301.717.7271 (Cell)

[Click here for information on our planned survey activities](#)

Find us on [Facebook](#), [Twitter](#) and the [NOAA Coast Survey](#) blog

On Fri, Jan 12, 2018 at 12:10 PM, Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)> wrote:

Hello George,

I am out of the office till next week and will not be able to answer your email in a timely manner.  
I am going to forward it to Chief of OPS Corey Allen and our team lead Martha Herzog.

Thanks,  
Starla

--

*Starla D. Robinson, Physical Scientist  
NOS - OCS - Hydrographic Survey Division - Operations Branch  
National Oceanic Atmospheric Administration  
Office: [240-533-0034](tel:240-533-0034) (Updated 6/13/17)  
Cell: [301-689-1431](tel:301-689-1431)  
Website: [HSD Planned Hydrographic Surveys](#)*

From: **George Reynolds** <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>  
Date: Wed, Jan 10, 2018 at 4:30 PM  
Subject: OPR-K354-KR-17, Task T-0003 1-meter surface delivery request  
To: Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)>  
Cc: Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>, "David T. Somers" <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>

Hi Starla,

We are to the point of finalizing the MBES surfaces for Project OPR-K354-KR-17. As you are aware we acquired both Complete Coverage and Set Line Spacing datasets in Surveys H13041 and H13042; the demarcation line between methods being the 4-meter contour. The seafloor around the 4-meter contour is flat over a large geographic range. It follows then that flat bottom contours are quite variable over a relatively large geographic range (especially when using zoned tides). Simply put the surveyed contours in the flats are jagged, i.e. visually unappealing. The result is that the junction area of each of the respective surfaces is also jagged (visually unappealing). We would prefer to not submit visually unappealing surfaces if it can be avoided. As such we are requesting that we submit a single 1-meter surface for each sheet. This accomplishes a couple of things: 1) the surfaces look better and 2) both OSI and NOAA have less surfaces to manage. The MBES data density in all areas is more than sufficient to support this approach.

Please let us know if it would be acceptable to submit a single 1-meter surface for each of the affected sheets in lieu of the 1-meter/4-meter surfaces as described above.

Thanks, George

**From:** Starla Robinson - NOAA Federal [<mailto:starla.robinson@noaa.gov>]  
**Sent:** Friday, September 15, 2017 11:08 AM  
**To:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>  
**Cc:** Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Douglas Wood - NOAA Affiliate <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>  
**Subject:** Re: Louisiana Coast Sounding Verification

Good morning George,

Thank you for asking for clarification. The official guidance is:

All charted depths falling between sounding lines and shallower by two feet or greater than adjacent water-level corrected surveyed soundings shall be verified or disproved. Verification and disproval of shoal charted depths that fall between set line spacing shall be accomplished by acquiring a star-like pattern using three lines centered on the charted depth and each extending 1 mm at chart scale. All significant shoals or features found in waters less than 20 m deep shall be developed to complete coverage standards.

A 40-meter will radius star-like pattern at the centroid of the sounding will cover a 1mm footprint at chart scale. This will be sufficient to disprove the sounding.

Please copy this guidance to your consults folder.

Thank you,  
Starla

--

*Starla D. Robinson, Physical Scientist*  
NOS - OCS - Hydrographic Survey Division - Operations Branch  
National Oceanic Atmospheric Administration  
Office: **240-533-0034** (Updated 6/13/17)  
Cell: 360-689-1431  
Website: [HSD Planned Hydrographic Surveys](#)

**From:** Starla Robinson - NOAA Federal [mailto:[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)]  
**Sent:** Monday, September 11, 2017 3:33 PM  
**To:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>  
**Cc:** Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Martha Herzog - NOAA Federal <[martha.herzog@noaa.gov](mailto:martha.herzog@noaa.gov)>; Douglas Wood - NOAA Affiliate <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>  
**Subject:** Re: FW: H13040 sounding verification

Hello George,

Following up on our conversation regarding sounding disapprovals:

- If the multibeam lines, on either side of a sounding are shoaler than the sounding, the data will be superseded. No additional disproval of a *deep sounding* is required.
- If the multibeam lines are deeper than the sounding, the *shoal sounding* must be disproved using the star-like pattern discussed. This follows HSSD section 5.2.2.1 Bathymetric Splits.

Thanks,  
Starla

--  
*Starla D. Robinson, Physical Scientist*  
*NOS - OCS - Hydrographic Survey Division - Operations Branch*  
*National Oceanic Atmospheric Administration*  
*Office: 240-533-0034 (Updated 6/13/17)*  
*Cell: 360-689-1431*  
*Website: [HSD Planned Hydrographic Surveys](#)*



Starla Robinson - NOAA Federal &lt;starla.robinson@noaa.gov&gt;

---

## Survey Outlines for OPR-K354-KR-17

1 message

**David Somers** <dts@oceansurveys.com>

Mon, Nov 13, 2017 at 5:14 PM

Reply-To: David Somers &lt;dts@oceansurveys.com&gt;

To: "survey.outlines@noaa.gov" &lt;survey.outlines@noaa.gov&gt;, Starla Robinson - NOAA Federal &lt;starla.robinson@noaa.gov&gt;

Cc: George Reynolds &lt;ggr@oceansurveys.com&gt;, Douglas Wood - NOAA Affiliate &lt;douglas.wood@noaa.gov&gt;

Good Afternoon,

Attached are the survey outlines for Surveys H13040, H13041, H13042, and H13043 under project number OPR-K354-KR-17.

Please let me know if there is any additional information required.

Regards,

Dave

**David Somers**

Data Processing Manager

**OCEAN SURVEYS, INC.**

[129 Mill Rock Road East, Old Saybrook, CT 06475](#)

**T** 860-388-4631 x135 **M** 860-575-3361 **F** 860-388-5879

[dts@oceansurveys.com](mailto:dts@oceansurveys.com) | [www.oceansurveys.com](http://www.oceansurveys.com)

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**4 attachments**

[H13040\\_Survey\\_Outline.000](#)  
8K

[H13041\\_Survey\\_Outline.000](#)  
8K

[H13042\\_Survey\\_Outline.000](#)  
9K

[H13043\\_Survey\\_Outline.000](#)  
10K

Hello George,

Attached are the updated tide zones for OPR-K354-KR-17, Louisiana Coast. These tide zones completely cover the project area.

Please copy this email into your correspondence folder.

Thank you,  
Starla Robinson

PS: A change memo is pending. I wanted to make sure we sent the data to you sooner than waiting to finalize that process.

--

*Starla D. Robinson, Physical Scientist*  
*NOS - OCS - Hydrographic Survey Division - Operations Branch*  
*National Oceanic Atmospheric Administration*  
*Office: 240-533-0034 (Updated 6/13/17)*  
*Cell: 360-689-1431*  
*Website: [HSD Planned Hydrographic Surveys](#)*

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

From: David Wolcott - NOAA Federal <[david.wolcott@noaa.gov](mailto:david.wolcott@noaa.gov)>  
Date: Fri, Jul 28, 2017 at 6:11 PM  
Subject: Project Instructions for OPR-K354-KR-2017 Louisiana Coast (Revised)  
To: Russell Quintero - NOAA Federal <[russell.quintero@noaa.gov](mailto:russell.quintero@noaa.gov)>, Gerald Hovis <[gerald.hovis@noaa.gov](mailto:gerald.hovis@noaa.gov)>, "\_NOS.CO-OPS.HTP" <[nos.coops.hpt@noaa.gov](mailto:nos.coops.hpt@noaa.gov)>, "J. Corey Allen" <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>, Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>



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

DATE: 07/28/2017

MEMORANDUM FOR: LT Russell Quintero  
Chief, Operations Branch N/CS31

FROM: Gerald Hovis  
Chief, Products and Services Branch, N/OPS3

SUBJECT: Delivery of Tide Requirements for Hydrographic Surveys

Tide requirements for hydrographic survey project OPR-K354-KR-2017 (Revised) Louisiana Coast are being provided in Microsoft Word format. A .ZIP file containing all pertinent ESRI ArcGIS files, as well as a tidal zoning graphic in PDF, is attached to this email and posted to the Sharepoint website under the project name "OPR-K354-KR-17". Six minute preliminary data for LAWMA, LA (8764227) may be retrieved in one month increments over the internet from the CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html> by clicking on "Six Minute Data".

--

David Wolcott  
Oceanographic Division  
Center for Operational Oceanographic Products and Services  
National Ocean Service  
National Oceanic and Atmospheric Administration

1305 East-West Highway, 7133  
Silver Spring, MD 20910  
Office: 240-533-0614  
Fax: 301-713-4437

**From:** George Reynolds [mailto:ggr@oceansurveys.com]  
**Sent:** Friday, June 23, 2017 10:06 PM  
**To:** 'Starla Robinson - NOAA Federal' <starla.robinson@noaa.gov>  
**Cc:** 'Douglas Wood - NOAA Affiliate' <douglas.wood@noaa.gov>; 'Emily Clark - NOAA Federal' <emily.clark@noaa.gov>; 'russell.quintero' <russell.quintero@noaa.gov>; 'Corey Allen - NOAA Federal' <corey.allen@noaa.gov>  
**Subject:** RE: Final Project Instructions OPR-K354-KR-17, Louisiana Coast, LA

Hi Starla.

In reviewing the project instructions, it appears that the preliminary tide zoning does not cover H13040 (survey priority 1).

Thanks,  
George

**From:** OCS NDB - NOAA Service Account [<mailto:ocs.ndb@noaa.gov>]  
**Sent:** Monday, January 29, 2018 7:34 AM  
**To:** Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>  
**Cc:** \_NOS OCS PBA Branch <[ocs.pba@noaa.gov](mailto:ocs.pba@noaa.gov)>; \_NOS OCS PBB Branch <[ocs.pbb@noaa.gov](mailto:ocs.pbb@noaa.gov)>; \_NOS OCS PBC Branch <[ocs.pbc@noaa.gov](mailto:ocs.pbc@noaa.gov)>; \_NOS OCS PBD Branch <[ocs.pbd@noaa.gov](mailto:ocs.pbd@noaa.gov)>; \_NOS OCS PBE Branch <[ocs.pbe@noaa.gov](mailto:ocs.pbe@noaa.gov)>; \_NOS OCS PBG Branch <[ocs.pbg@noaa.gov](mailto:ocs.pbg@noaa.gov)>; Charles Porter - NOAA Federal <[charles.porter@noaa.gov](mailto:charles.porter@noaa.gov)>; James M Crocker <[James.M.Crocker@noaa.gov](mailto:James.M.Crocker@noaa.gov)>; Ken Forster <[Ken.Forster@noaa.gov](mailto:Ken.Forster@noaa.gov)>; Kevin Jett - NOAA Federal <[kevin.jett@noaa.gov](mailto:kevin.jett@noaa.gov)>; Matt Kroll <[Matt.Kroll@noaa.gov](mailto:Matt.Kroll@noaa.gov)>; Michael Gaeta <[Michael.Gaeta@noaa.gov](mailto:Michael.Gaeta@noaa.gov)>; Nautical Data Branch <[OCS.NDB@noaa.gov](mailto:OCS.NDB@noaa.gov)>; NSD Coast Pilot <[coast.pilot@noaa.gov](mailto:coast.pilot@noaa.gov)>; PHB Chief <[PHB.Chief@noaa.gov](mailto:PHB.Chief@noaa.gov)>; Tara Wallace <[Tara.Wallace@noaa.gov](mailto:Tara.Wallace@noaa.gov)>; Chris Libeau <[Chris.Libeau@noaa.gov](mailto:Chris.Libeau@noaa.gov)>; Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Corey Allen <[Corey.Allen@noaa.gov](mailto:Corey.Allen@noaa.gov)>; Janice Eisenberg - NOAA Federal <[janice.eisenberg@noaa.gov](mailto:janice.eisenberg@noaa.gov)>; Tim Osborn <[Tim.Osborn@noaa.gov](mailto:Tim.Osborn@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>  
**Subject:** Re: H13042 DtoN #1 Uncharted Offshore Platforms

DD-29180 has been registered by the Nautical Data Branch and directed to Products Branch G for processing.

The DtoNs reported are four production platform “satellites” located approximately 7 nautical miles south of Shell Keys in the Gulf of Mexico.

The following chart is affected:

11349 kapp 64

The following ENC is affected:

US4LA15M

References:

H13042

OPR-K354-KR-17

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/  
Contact: [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)

**From:** Castle Parker - NOAA Federal [mailto:[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)]  
**Sent:** Friday, January 26, 2018 12:45 PM  
**To:** OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>  
**Cc:** Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rwmw@oceansurveys.com](mailto:rwmw@oceansurveys.com)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>  
**Subject:** H13042 DtoN #1 Uncharted Offshore Platforms

Good Day,

Please find attached zip file for survey H13042, Danger to Navigation #1 for submission to Nautical Data Branch (NDB) and Marine Chart Division (MCD). H13042 DtoN submission contains four uncharted offshore platforms.

The information originates from a NOAA contractor (Ocean Surveys Inc.) and was submitted to the Atlantic Hydrographic Branch (AHB) for review and processing. The contents of the attached WinZip file were generated at AHB. The attached zip file contains a DtoN Letter (PDF) and a Pydro XML file.

If you have any questions, please direct them back to me, email or phone (757-364-7472).

Thank you for your assistance with this matter,

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:** James J. Miller [<mailto:james.j.miller@noaa.gov>]  
**Sent:** Tuesday, October 10, 2017 11:37 AM  
**To:** Tim Osborn <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>  
**Cc:** Corey Allen <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; AHB Chief - NOAA Service Account <[ahb.chief@noaa.gov](mailto:ahb.chief@noaa.gov)>; Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Castle Parker <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>; [dts@oceansurveys.com](mailto:dts@oceansurveys.com); [ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)  
**Subject:** H13042 DtoN Report #1 Submission to Navigation Manager

Tim,

Please find attached a compressed file for H13042 DtoN Report #1, containing four uncharted offshore platforms (#1, 2, 3, and 4).

The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review, processing, 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 757-364-7465. Thank you for your assistance with this matter.

Respectfully,  
James Miller

James J. Miller  
Physical Scientist  
NOAA Office of Coast Survey  
Atlantic Hydrographic Branch  
439 W York St | Norfolk, VA | 23510  
757-364-7465

AHB hereafter calls OSI H13042 DtoNs 1,2,3,4 by the following name, "H13042 DtoN #1."

**From:** David Somers [<mailto:dts@oceansurveys.com>]  
**Sent:** Monday, October 9, 2017 1:40 PM  
**To:** [ahb.dton@noaa.gov](mailto:ahb.dton@noaa.gov); [starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)  
**Cc:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>  
**Subject:** H13042 DtoNs 1,2,3, & 4

Good Afternoon,

OSI has compiled and attached 4 DtoN feature files along with supporting imagery for survey H13042. The DtoNs are new satellite oil platforms.

Please let me know if OSI can provide any additional information regarding the platforms.

Regards,

Dave

**David Somers**  
Data Processing Manager

**OCEAN SURVEYS, INC.**  
129 Mill Rock Road East, Old Saybrook, CT 06475  
**T** 860-388-4631 x135 **M** 860-575-3361 **F** 860-388-5879  
[dts@oceansurveys.com](mailto:dts@oceansurveys.com) | [www.oceansurveys.com](http://www.oceansurveys.com)

**From:** OCS NDB - NOAA Service Account [<mailto:ocs.ndb@noaa.gov>]  
**Sent:** Thursday, January 25, 2018 12:53 PM  
**To:** Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>  
**Cc:** Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Janice Eisenberg - NOAA Federal <[janice.eisenberg@noaa.gov](mailto:janice.eisenberg@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; \_NOS OCS PBA Branch <[ocs.pba@noaa.gov](mailto:ocs.pba@noaa.gov)>; \_NOS OCS PBB Branch <[ocs.pbb@noaa.gov](mailto:ocs.pbb@noaa.gov)>; \_NOS OCS PBC Branch <[ocs.pbc@noaa.gov](mailto:ocs.pbc@noaa.gov)>; \_NOS OCS PBD Branch <[ocs.pbd@noaa.gov](mailto:ocs.pbd@noaa.gov)>; \_NOS OCS PBE Branch <[ocs.pbe@noaa.gov](mailto:ocs.pbe@noaa.gov)>; \_NOS OCS PBG Branch <[ocs.pbg@noaa.gov](mailto:ocs.pbg@noaa.gov)>; Charles Porter - NOAA Federal <[charles.porter@noaa.gov](mailto:charles.porter@noaa.gov)>; James M Crocker <[James.M.Crocker@noaa.gov](mailto:James.M.Crocker@noaa.gov)>; Ken Forster <[Ken.Forster@noaa.gov](mailto:Ken.Forster@noaa.gov)>; Kevin Jett - NOAA Federal <[kevin.jett@noaa.gov](mailto:kevin.jett@noaa.gov)>; Matt Kroll <[Matt.Kroll@noaa.gov](mailto:Matt.Kroll@noaa.gov)>; Michael Gaeta <[Michael.Gaeta@noaa.gov](mailto:Michael.Gaeta@noaa.gov)>; Nautical Data Branch <[OCS.NDB@noaa.gov](mailto:OCS.NDB@noaa.gov)>; NSD Coast Pilot <[coast.pilot@noaa.gov](mailto:coast.pilot@noaa.gov)>; PHB Chief <[PHB.Chief@noaa.gov](mailto:PHB.Chief@noaa.gov)>; Tara Wallace <[Tara.Wallace@noaa.gov](mailto:Tara.Wallace@noaa.gov)>; Chris Libeau <[Chris.Libeau@noaa.gov](mailto:Chris.Libeau@noaa.gov)>  
**Subject:** Re: H13042 DtoN 5.1 and 5.2 for NDB Submission

DD-29169 has been registered by the Nautical Data Branch and directed to Products Branch G for processing.

The DtoNs reported are a platform and a wellhead located approximately 5 nautical miles south of Shell Keys in the Gulf of Mexico.

The following charts are affected:

11349 kapp 64

11340 kapp 49

The following ENCs are affected:

US4LA15M

US3GC03M

References:

H13042

OPR-K354-KR-17

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/  
Contact: [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)

**From:** Tim Osborn - NOAA Federal [mailto:[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)]  
**Sent:** Friday, January 26, 2018 8:52 AM  
**To:** Castle Parker <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>; Tara Wallace - NOAA Federal <[tara.wallace@noaa.gov](mailto:tara.wallace@noaa.gov)>;  
[briana.welton@noaa.gov](mailto:briana.welton@noaa.gov); [briana.hillstrom@noaa.gov](mailto:briana.hillstrom@noaa.gov); Steve Soherr <[steve.soherr@noaa.gov](mailto:steve.soherr@noaa.gov)>;  
[ahb.dton@noaa.gov](mailto:ahb.dton@noaa.gov)  
**Subject:** Reply back on uncharted platform and wellhead report

Mr Tim Boriskie of USCG D8 has the following on the report of the uncharted platform and wellhead, submitted by an HSD contractor.

On Jan 25, 2018, at 3:38 PM, Boriskie, Timothy B CIV <[Timothy.B.Boriskie@uscg.mil](mailto:Timothy.B.Boriskie@uscg.mil)> wrote:  
Tim,

Good afternoon.

The uncharted platform structure you have illustrated via photo in position: 29-19-56.6N, 091-52-15.0W is the opposite end of the CG approved platform structure we have approvedcharted in 29-19-53.42N, 091-52-10.18W (Energy-XXI-108-31).

The uncharted wellhead structure you have illustrated in position: 29-19-56.5N, 091-52-07.4W appears to be remains of a CG approved platform structure we have approved in 29-19-55.000N 091-52-06.000W (Energy-XXI-108-35). Apparently Energy XXI removed the platform and likely awaiting site clearance operations.

We are aware of both structures, but have them charted in slightly different geo-locations.

It is up to Energy XXI to submit their application requests to our office requesting the aforementioned changes.

Thank you. Tim

v/r

**Tim Boriskie**  
**Program Manager**  
**for Private Aids to Navigation**  
=====

**Mailing address:**  
**Eighth Coast Guard District (dpw)**  
**Private Aids to Navigation Section**  
**500 Poydras St., Suite 1230**  
**New Orleans, LA 70130**  
=====

**Direct: [\(504\) 671-2124](tel:(504)671-2124)**  
**Office: [\(504\) 671-2328](tel:(504)671-2328) or 2330**  
**Fax: [\(504\) 671-2137](tel:(504)671-2137)**

Private Aids Inquiries Email to:[d8OANpaton@uscg.mil](mailto:d8OANpaton@uscg.mil)

Eighth CG District Website: <http://www.atlanticarea.uscg.mil/district-8/district-divisions/waterways/PATON>

**From:** Castle Parker - NOAA Federal [<mailto:castle.e.parker@noaa.gov>]  
**Sent:** Wednesday, January 24, 2018 12:48 PM  
**To:** OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>  
**Cc:** Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Janice Eisenberg - NOAA Federal <[janice.eisenberg@noaa.gov](mailto:janice.eisenberg@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>  
**Subject:** H13042 DtoN 5.1 and 5.2 for NDB Submission

Good Day,

Please find attached zip file for H13042 Danger to Navigation #5.1 and #5.2 for submission to Nautical Data Branch (NDB) and Marine Chart Division (MCD). H13042 DtoN submission contains one uncharted offshore platform and one uncharted wellhead (baring at all times).

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

If you have any questions, please direct them back to me, email or phone (757-364-7472).

Thank you for your assistance with this matter,

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:** David Somers [mailto:[dts@oceansurveys.com](mailto:dts@oceansurveys.com)]  
**Sent:** Thursday, December 14, 2017 5:22 PM  
**To:** [ahb.dton@noaa.gov](mailto:ahb.dton@noaa.gov); Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)>  
**Cc:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>  
**Subject:** H13040, H13041, H13042, and H13043 DtoNs

Good Afternoon,

OSI has compiled and attached 7 DtoN feature files along with supporting imagery for surveys H13040, H13041, H13042, and H13043.

H13040 DtoN 2 - Large platform

H13041 DtoN 1 - AtoN not present

**H13042 DtoN 5 - Large platform, recently uncharted platform**

H13042 DtoN 6 - Obstructions near platform

H13042 DtoN 7 - Obstruction near pipe arch

H13043 DtoN 1 - AtoN not present

H13043 DtoN 2 - Obstruction

Please let me know if OSI can provide any additional information regarding these DtoNs.

Regards,  
Dave

**David Somers**  
Data Processing Manager

**OCEAN SURVEYS, INC.**  
129 Mill Rock Road East, Old Saybrook, CT 06475  
**T** 860-388-4631 x135 **M** 860-575-3361 **F** 860-388-5879  
[dts@oceansurveys.com](mailto:dts@oceansurveys.com) | [Ocean Surveys Incorporated](#)

**From:** OCS NDB - NOAA Service Account [mailto:[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)]  
**Sent:** Tuesday, January 30, 2018 3:27 PM  
**To:** Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>  
**Cc:** Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; Lance Roddy - NOAA Federal <[lance.roddy@noaa.gov](mailto:lance.roddy@noaa.gov)>; \_NOS OCS PBA Branch <[ocs.pba@noaa.gov](mailto:ocs.pba@noaa.gov)>; \_NOS OCS PBB Branch <[ocs.pbb@noaa.gov](mailto:ocs.pbb@noaa.gov)>; \_NOS OCS PBC Branch <[ocs.pbc@noaa.gov](mailto:ocs.pbc@noaa.gov)>; \_NOS OCS PBD Branch <[ocs.pbd@noaa.gov](mailto:ocs.pbd@noaa.gov)>; \_NOS OCS PBE Branch <[ocs.pbe@noaa.gov](mailto:ocs.pbe@noaa.gov)>; \_NOS OCS PBG Branch <[ocs.pbg@noaa.gov](mailto:ocs.pbg@noaa.gov)>; Charles Porter - NOAA Federal <[charles.porter@noaa.gov](mailto:charles.porter@noaa.gov)>; James M Crocker <[James.M.Crocker@noaa.gov](mailto:James.M.Crocker@noaa.gov)>; Ken Forster <[Ken.Forster@noaa.gov](mailto:Ken.Forster@noaa.gov)>; Kevin Jett - NOAA Federal <[kevin.jett@noaa.gov](mailto:kevin.jett@noaa.gov)>; Matt Kroll <[Matt.Kroll@noaa.gov](mailto:Matt.Kroll@noaa.gov)>; Michael Gaeta <[Michael.Gaeta@noaa.gov](mailto:Michael.Gaeta@noaa.gov)>; Nautical Data Branch <[OCS.NDB@noaa.gov](mailto:OCS.NDB@noaa.gov)>; NSD Coast Pilot <[coast.pilot@noaa.gov](mailto:coast.pilot@noaa.gov)>; PHB Chief <[PHB.Chief@noaa.gov](mailto:PHB.Chief@noaa.gov)>; Tara Wallace <[Tara.Wallace@noaa.gov](mailto:Tara.Wallace@noaa.gov)>; Chris Libeau <[Chris.Libeau@noaa.gov](mailto:Chris.Libeau@noaa.gov)>  
**Subject:** Re: H13042 DtoN #6 and #7 Submission to NDB

DD-29187 has been registered by the Nautical Data Branch and directed to Products Branch G for processing.

The DtoNs reported are two submerged pipe-like features located approximately 6 nautical miles south of Shell Keys in the Gulf of Mexico.

The following charts are affected:

11349 kapp 64

11340 kapp 49

The following ENCs are affected:

US4LA15M

US3GC03M

References:

H13042

OPR-K354-KR-17

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/  
Contact: [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)



**From:** Castle Parker - NOAA Federal [mailto:[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)]  
**Sent:** Tuesday, January 30, 2018 1:51 PM  
**To:** OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>  
**Cc:** Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; Lance Roddy - NOAA Federal <[lance.roddy@noaa.gov](mailto:lance.roddy@noaa.gov)>  
**Subject:** RE: H13042 DtoN #6 and #7 Submission to NDB

Good day,  
Please find the revised submission for H13042 DtoN #6 and #7.

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:** OCS NDB - NOAA Service Account [<mailto:ocs.ndb@noaa.gov>]  
**Sent:** Tuesday, January 30, 2018 12:23 PM  
**To:** Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>  
**Cc:** Briana Hillstrom - NOAA Federal <[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>; Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>; Tara Wallace <[Tara.Wallace@noaa.gov](mailto:Tara.Wallace@noaa.gov)>; Chris Libeau <[Chris.Libeau@noaa.gov](mailto:Chris.Libeau@noaa.gov)>; John Nyberg - NOAA Federal <[john.nyberg@noaa.gov](mailto:john.nyberg@noaa.gov)>; Craig Winn <[Craig.Winn@noaa.gov](mailto:Craig.Winn@noaa.gov)>; Lori Powdrell - NOAA Federal <[Lori.Powdrell@noaa.gov](mailto:Lori.Powdrell@noaa.gov)>  
**Subject:** Re: H13042 DtoN #6 and #7 Submission to NDB

Hello Gene,

I noticed some discrepancies in this DtoN submission:

**Feature 1.1:**

The Least Depth section does not state the depth. This section should include depth data.

**Feature 1.2:**

The blue text at the top of page 6 states, "1.2) 16ft Sounding".

The Least Depth section does not state the depth. This section should include depth data.

The Remarks section for Feature 1.2 in the PDF and XML file states, "A pipe-like feature with a height of 2.05m and a depth of 4.992m [16ft] was detected approximately 55m from a charted pipeline."

The S-57 Data section OBJNAM is "8ft Sounding".

The Feature Image shows a 13ft sounding.

The pages associated with Feature 1.2 need to be revised in order to indicate the same, correct depth.

Please correct the deliverables as necessary and resend.

Thanks,

Lance Roddy  
Nautical Data Branch/Marine Chart Division/  
Office of Coast Survey/National Ocean Service/  
Contact: [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)

**From:** Castle Parker - NOAA Federal [mailto:[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)]  
**Sent:** Tuesday, January 30, 2018 9:27 AM  
**To:** OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>  
**Cc:** Briana Hillstrom - NOAA Federal ([Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov))  
<[Briana.Hillstrom@noaa.gov](mailto:Briana.Hillstrom@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>;  
George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>; David  
Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>;  
Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Douglas Wood - NOAA Federal  
<[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>  
**Subject:** H13042 DtoN #6 and #7 Submission to NDB

Good Day,

Please find attached zip file for survey H13042, Danger to Navigation #6 and #7 for submission to Nautical Data Branch (NDB) and Marine Chart Division (MCD). H13042 DtoN #6 and #7 submission contains one 8ft obstruction and a 16ft sounding.

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

If you have any questions, please direct them back to me, email or phone (757-364-7472).

Thank you for your assistance with this matter,

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

**Note to correspondence: In the Dec 15, 2017 e-mail to Tim Osborn (below) AHB initially repackaged OSI DtoNs 6&7 and called them H13042 DtoN #3. However, when AHB submitted OSI DtoNs 6&7 to NDB AHB used the OSI naming scheme of H13042 DtoNs 6&7.**

**From:** Tim Osborn - NOAA Federal [mailto:[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)]  
**Sent:** Saturday, December 16, 2017 6:18 AM  
**To:** James J. Miller <[james.j.miller@noaa.gov](mailto:james.j.miller@noaa.gov)>  
**Cc:** Corey Allen <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>; Janice Eisenberg - NOAA Federal <[janice.eisenberg@noaa.gov](mailto:janice.eisenberg@noaa.gov)>; Starla Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>; AHB Chief - NOAA Service Account <[ahb.chief@noaa.gov](mailto:ahb.chief@noaa.gov)>; Castle Parker <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>; Edward Owens <[edward.owens@noaa.gov](mailto:edward.owens@noaa.gov)>; Clinton Marcus - NOAA Federal <[clinton.r.marcus@noaa.gov](mailto:clinton.r.marcus@noaa.gov)>; David Somers <[dts@oceansurveys.com](mailto:dts@oceansurveys.com)>; George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>; Christy Fandel <[christina.fandel@noaa.gov](mailto:christina.fandel@noaa.gov)>; rachel.medley@noaa.gov  
**Subject:** Re: H13042 Exposed Pipelines

Thank you. This is quite a significant feature.

On Dec 15, 2017, at 5:53 PM, James J. Miller <[james.j.miller@noaa.gov](mailto:james.j.miller@noaa.gov)> wrote:

My apologies. The ZIP file is now attached.

James J. Miller  
Physical Scientist  
NOAA Office of Coast Survey  
Atlantic Hydrographic Branch  
439 W York St | Norfolk, VA | 23510  
757-364-7465

On Fri, Dec 15, 2017 at 6:45 PM, James J. Miller <[james.j.miller@noaa.gov](mailto:james.j.miller@noaa.gov)> wrote:

Good day,

A contract field unit has submitted a group of three exposed pipelines that are located within survey H13042. The pipelines are significantly exposed compared to surrounding charted depths. The attached report describes the position and least depth of the exposed pipelines with associated images. The intent of the report is to provide documentation of the exposed pipeline for the proper authorities.

Please let me know if you have any questions or need additional information.

Respectfully,  
James

James J. Miller  
Physical Scientist  
NOAA Office of Coast Survey  
Atlantic Hydrographic Branch  
439 W York St | Norfolk, VA | 23510  
757-364-7465

**From:** David Somers [mailto:[dts@oceansurveys.com](mailto:dts@oceansurveys.com)]  
**Sent:** Thursday, December 14, 2017 5:22 PM  
**To:** ahb.dton@noaa.gov; Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)>  
**Cc:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>  
**Subject:** H13040, H13041, H13042, and H13043 DtoNs

Good Afternoon,

OSI has compiled and attached 7 DtoN feature files along with supporting imagery for surveys H13040, H13041, H13042, and H13043.

H13040 DtoN 2 - Large platform

H13041 DtoN 1 - AtoN not present

H13042 DtoN 5 - Large platform, recently uncharted platform

H13042 DtoN 6 - Obstructions near platform

H13042 DtoN 7 - Obstruction near pipe arch

H13043 DtoN 1 - AtoN not present

H13043 DtoN 2 - Obstruction

Please let me know if OSI can provide any additional information regarding these DtoNs.

Regards,  
Dave

**David Somers**  
Data Processing Manager

**OCEAN SURVEYS, INC.**  
129 Mill Rock Road East, Old Saybrook, CT 06475  
**T** 860-388-4631 x135 **M** 860-575-3361 **F** 860-388-5879  
[dts@oceansurveys.com](mailto:dts@oceansurveys.com) | [Ocean Surveys Incorporated](http://Ocean Surveys Incorporated)

From: Paul Gionis - NOAA Federal <[paul.gionis@noaa.gov](mailto:paul.gionis@noaa.gov)>  
Date: 1/23/18 12:44 PM (GMT-05:00)  
To: [ocs.pbg@noaa.gov](mailto:ocs.pbg@noaa.gov), [rita.s.bowker@noaa.gov](mailto:rita.s.bowker@noaa.gov)  
Cc: [ocs.pba@noaa.gov](mailto:ocs.pba@noaa.gov), [PHB.Chief@noaa.gov](mailto:PHB.Chief@noaa.gov), [ocs.pbb@noaa.gov](mailto:ocs.pbb@noaa.gov), [Castle.E.Parker@noaa.gov](mailto:Castle.E.Parker@noaa.gov),  
[ocs.pbc@noaa.gov](mailto:ocs.pbc@noaa.gov), [James.M.Crocker@noaa.gov](mailto:James.M.Crocker@noaa.gov), [ocs.pbd@noaa.gov](mailto:ocs.pbd@noaa.gov), Matt Kroll  
<[Matt.Kroll@noaa.gov](mailto:Matt.Kroll@noaa.gov)>, [ocs.pbe@noaa.gov](mailto:ocs.pbe@noaa.gov), OCS NDB <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>, Tara Wallace  
<[Tara.Wallace@noaa.gov](mailto:Tara.Wallace@noaa.gov)>, Coast Pilot <[coast.pilot@noaa.gov](mailto:coast.pilot@noaa.gov)>, AHB Chief - NOAA Service  
Account <[ahb.chief@noaa.gov](mailto:ahb.chief@noaa.gov)>, Corey Allen <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>,  
[Janice.Eisenberg@noaa.gov](mailto:Janice.Eisenberg@noaa.gov), Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>, Starla  
Robinson - NOAA Federal <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>, Douglas Wood - NOAA Federal  
<[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>, [dts@oceansurveys.com](mailto:dts@oceansurveys.com)  
Subject: Correction: H13042 DtoN #8

DD-29155 has been registered by the Nautical Data Branch and directed to Products Branch G for processing.

The DtoN reported is an obstruction off the Louisiana Coast, 6NM South of South Point.

The following charts are affected:

11351 kapp 63  
11340 kapp 49

The following ENCs are affected:

US4LA21M  
US3GC03M

References:

H-13042  
OPR-K354-KR-17

This information was discovered by a contractor field unit, and submitted to NDB by AHB.

Cheers,

Paul Gionis, Cartographer  
Nautical Data Branch/Marine Chart Division/  
Office of Coast Survey/National Ocean Service  
Contact: [\(240\)847-8107](tel:(240)847-8107) ← (New # as of 12/4/17)  
[paul.gionis@noaa.gov](mailto:paul.gionis@noaa.gov)

From: Rita Bowker - NOAA Federal <[rita.s.bowker@noaa.gov](mailto:rita.s.bowker@noaa.gov)>  
Date: 1/22/18 9:09 AM (GMT-05:00)  
To: OCS NDB - NOAA Service Account <[ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)>  
Cc: Corey Allen - NOAA Federal <[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)>, Janice Eisenberg - NOAA Federal <[Janice.Eisenberg@noaa.gov](mailto:Janice.Eisenberg@noaa.gov)>, Tim Osborn - NOAA Federal <[tim.osborn@noaa.gov](mailto:tim.osborn@noaa.gov)>, AHB Chief - NOAA Service Account <[ahb.chief@noaa.gov](mailto:ahb.chief@noaa.gov)>, Castle Parker - NOAA Federal <[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)>, Starla Robinson <[Starla.Robinson@noaa.gov](mailto:Starla.Robinson@noaa.gov)>, Douglas Wood - NOAA Federal <[douglas.wood@noaa.gov](mailto:douglas.wood@noaa.gov)>, [dts@oceansurveys.com](mailto:dts@oceansurveys.com)  
Subject: H13042 DtoN #8 Submission to NDB

Good day,

Please find attached a compressed file for H13042 DtoN Report #8, containing one obstruction for submission to Nautical Data Branch (NDB) and Marine Chart Division (MCD). The information originates from a NOAA contract field unit and was submitted to the Atlantic Hydrographic Branch (AHB) for review, processing, 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 757-364-7469. Thank you for your assistance with this matter.

Respectfully,  
Rita Bowker

*Rita Bowker*

*NOAA Office of Coast Survey*

*Atlantic Hydrographic Branch*

*Physical Scientist*

*[rita.s.bowker@noaa.gov](mailto:rita.s.bowker@noaa.gov)*

*[\(757\) 364-7469](tel:(757)364-7469)*

**From:** David Somers [mailto:[dts@oceansurveys.com](mailto:dts@oceansurveys.com)]  
**Sent:** Tuesday, January 16, 2018 2:44 PM  
**To:** ahb.dton@noaa.gov; Starla Robinson - NOAA Federal <[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)>  
**Cc:** George Reynolds <[ggr@oceansurveys.com](mailto:ggr@oceansurveys.com)>; Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>  
**Subject:** H13042 DtoN #8

Good Afternoon,

OSI has compiled and attached 1 DtoN feature file along with supporting imagery for survey H13042.

Please let me know if OSI can provide any additional information regarding the obstruction.

Regards,  
Dave

**David Somers**  
Data Processing Manager

**OCEAN SURVEYS, INC.**  
129 Mill Rock Road East, Old Saybrook, CT 06475  
**T** 860-388-4631 x135 **M** 860-575-3361 **F** 860-388-5879  
[dts@oceansurveys.com](mailto:dts@oceansurveys.com) | [www.oceansurveys.com](http://www.oceansurveys.com)

**From:** Starla Robinson - NOAA Federal [mailto:[starla.robinson@noaa.gov](mailto:starla.robinson@noaa.gov)]  
**Sent:** Friday, December 22, 2017 12:09 PM  
**To:** Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)>  
**Subject:** Re: Non-DTON Seep and Pipeline Reports for H13042 and H13043

Thank you Bob. Reports received. Happy Holidays! – Starla

--  
*Starla D. Robinson, Physical Scientist*  
*NOS - OCS - Hydrographic Survey Division - Operations Branch*  
*National Oceanic Atmospheric Administration*  
*Office: 240-533-0034 (Updated 6/13/17)*  
*Cell: 360-689-1431*  
*Website: [HSD Planned Hydrographic Surveys](#)*

On Thu, Dec 21, 2017 at 4:03 PM, Bob Wallace <[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com)> wrote:

Starla,

Attached are Non-DTON Seep and Pipeline reports for OPR-K354-KR-17, Surveys H13042 and H13043. We are presenting the information as stand-alone compilation reports (rather than in the body of an e-mail) since there are multiple reportable items per sheet.

The Non-DTON reports for Surveys H13040 and H13041 preceded this e-mail.

Please let me know that you received both e-mails once you have.

Thanks, Bob Wallace

**Robert M. Wallace Jr.**

Project Manager

**OCEAN SURVEYS, INC.**

129 Mill Rock Road East, Old Saybrook, CT 06475

**T** 860-388-4631 x129 **M** 860-227-3099 **F** 860-388-5879

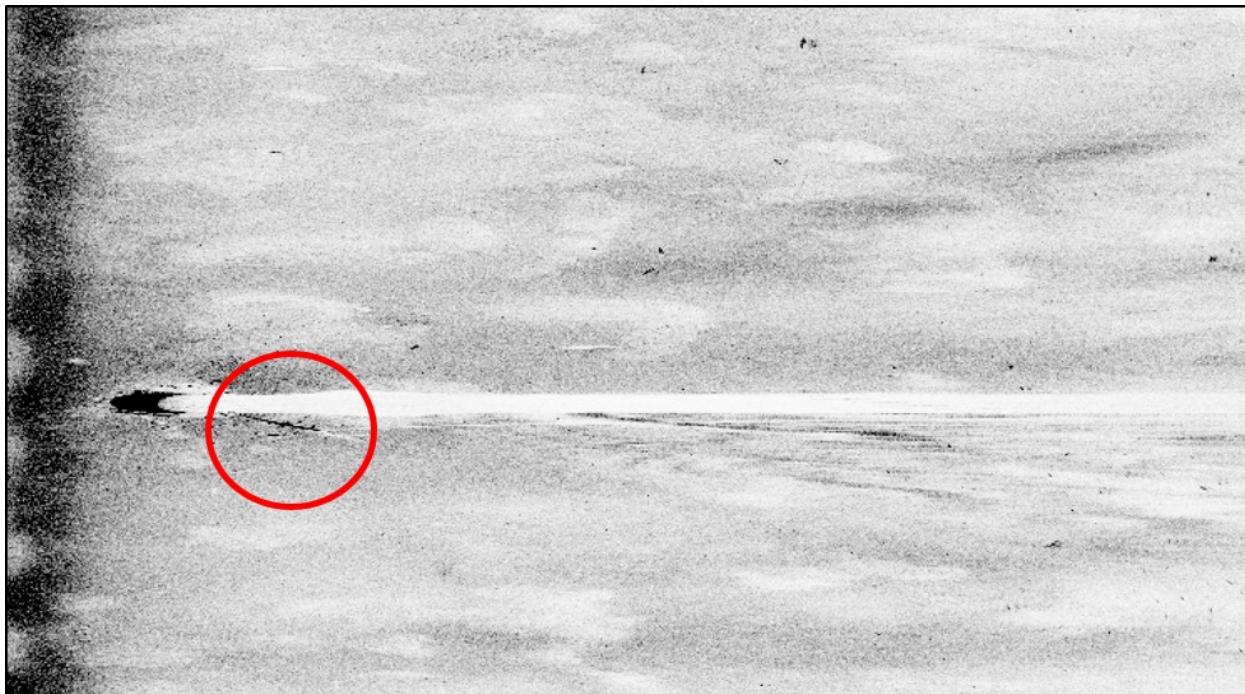
[rmw@oceansurveys.com](mailto:rmw@oceansurveys.com) | [www.oceansurveys.com](http://www.oceansurveys.com)

Follow us: [LinkedIn](#) | [Twitter](#) | [Facebook](#)

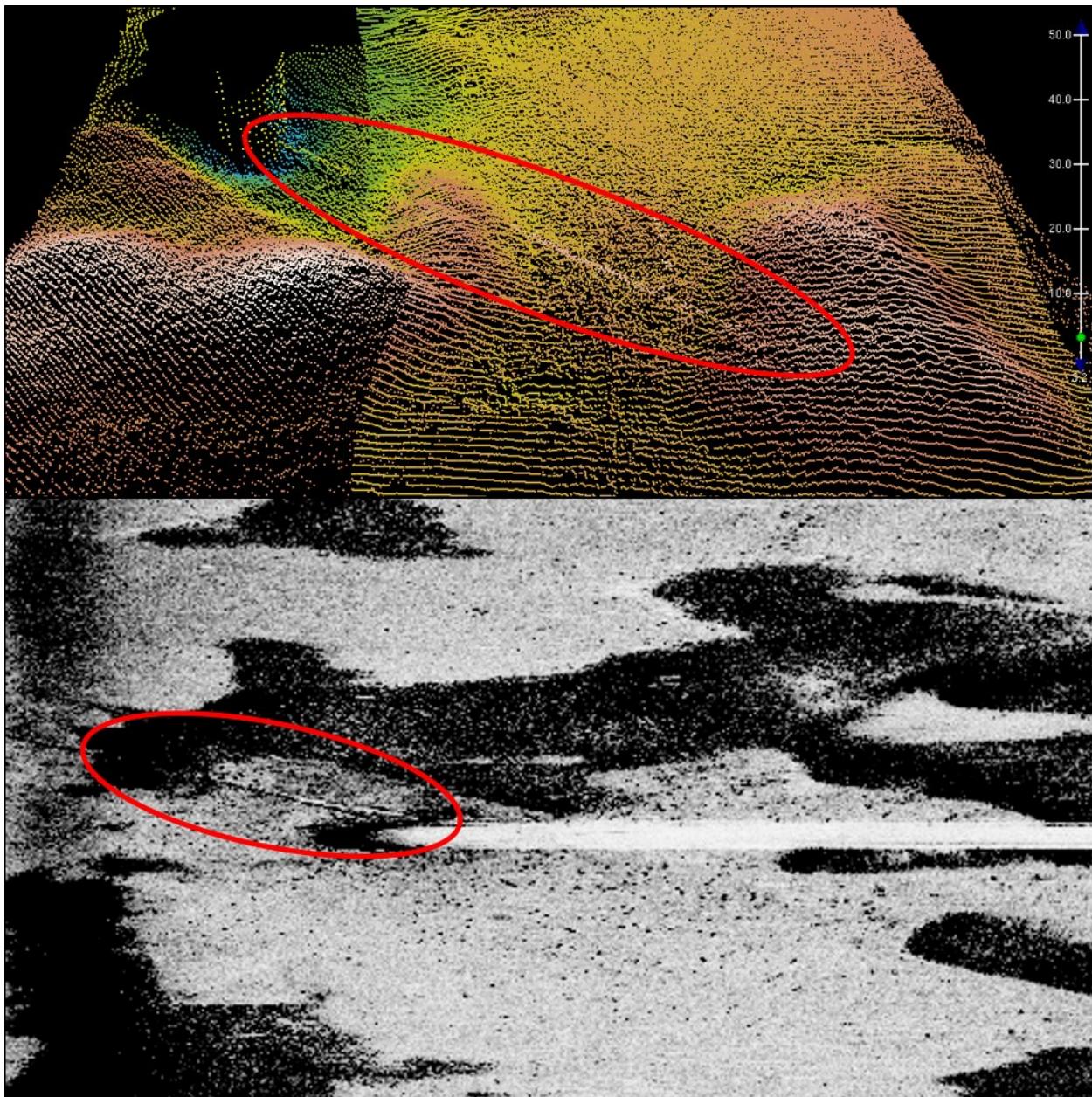
Non-DTON Report Image Key	Interpreted Exposed Pipeline or Seep (Latitude)	Interpreted Exposed Pipeline or Seep (Longitude)	Distance to Nearest Charted Pipeline or Platform (m)	Approx. Length of Interpreted Exposed Pipeline (m)	Date/Time of Observation (UTC)	Approx. Water Depth Near Feature (m)	Interpreted Height Above Bottom (m)	Comment
1	29-19-09.18N	91-54-56.03W	6/0	5	2017/09/05 22:57	5.7	0.0	6 meters to nearest charted pipeline but apparently connected to charted/surveyed platform. No supporting MBES due to proximity to platform.
2	29-19-03.36N	91-54-26.86W	45/0	19	2017/09/05 19:56	5.8	0.2	45 meters to nearest charted pipeline but apparently connected to charted/surveyed platform.
3	29-20-22.10N	91-53-51.57W	6	8	2017/10/12 13:37	4.4	0.3	6 m to charted pipe.
4	29-17-56.94N	91-53-04.33W	3/0	34	2017/09/28 19:27	6.9	Meets platform above water surface	3m to nearest charted pipeline. Pipe comes to surface at platform, therefore, zero distance to platform.
5	29-19-54.65N	91-52-21.80W	50	6	2017/09/27 22:17	5.1	0.2	Falls between charted pipelines.
6	29-19-47.92N	91-52-13.62W	0	9	2017/09/09 22:41	5.0	0.6	Falls on charted pipeline.
7	29-19-55.87N	91-52-13.61W	6	6	2017/09/10 17:23	5.4	0.5	6m to charted pipeline.
8	29-20-02.48N	91-52-21.17W	73	11	2017/09/27 22:07	4.8	2.3	15m to Key 9, 73m to charted pipeline. H13042 DTON #7.
9	29-20-02.36N	91-52-20.31W	59	7	2017/09/12 23:20	4.8	0.4	15m to Key 8, 59m to charted pipeline.
10	29-19-54.41N	91-52-05.70W	77/117	7	2017/09/27 22:26	4.9	0.4	77m to surveyed platform, 117m to charted pipeline.

Non-DTON Report Image Key	Interpreted Exposed Pipeline or Seep (Latitude)	Interpreted Exposed Pipeline or Seep (Longitude)	Distance to Nearest Charted Pipeline or Platform (m)	Approx. Length of Interpreted Exposed Pipeline (m)	Date/Time of Observation (UTC)	Approx. Water Depth Near Feature (m)	Interpreted Height Above Bottom (m)	Comment
11	29-18-28.71N	91-52-10.05W	247/520	6	2017/09/28 17:01	6.3	0.4	247 to charted platform, 520m to charted pipeline.
12	29-17-16.94N	91-51-32.69W	80	6	2017/10/10 18:46	7.0	0.3	80m to charted pipeline.
13	29-16-43.51N	91-49-48.67W	72	7	2017/09/28 13:55	6.8	0.2	72m to charted pipeline.
14	29-23-02.42N	91-46-07.95W	2/165	11	2017/09/28 14:33	3.7	1.0	2m to charted pipeline, 165m to surveyed platform.
15	29-17-14.27N	91-51-36.39W	47	see comments	2017/10/10 18:33	7.1	2.1	47m to nearest charted pipeline. Four pipe-like features within 10m radius. Included in H13042 DTON #6.
16 Seep 1	29-17-37.52N	91-51-16.19W	750	N/A	2017/09/28 16:15	6.8	N/A	Seep is 750m to nearest charted pipeline.
17 Seep 2	29-16-40.25N	91-53-18.63W	11/2	N/A	2017/09/08 13:11	7.4	N/A	Seep is next to a surveyed wellhead, 11 m to nearest charted pipeline and 2 m to surveyed wellhead with significant height (to be included in FFF).
18 Seep 3	29-22-14.29N	91-47-34.92W	28	N/A	2017/09/08 15:04	3.8	N/A	Seep is 28m to nearest charted pipeline.

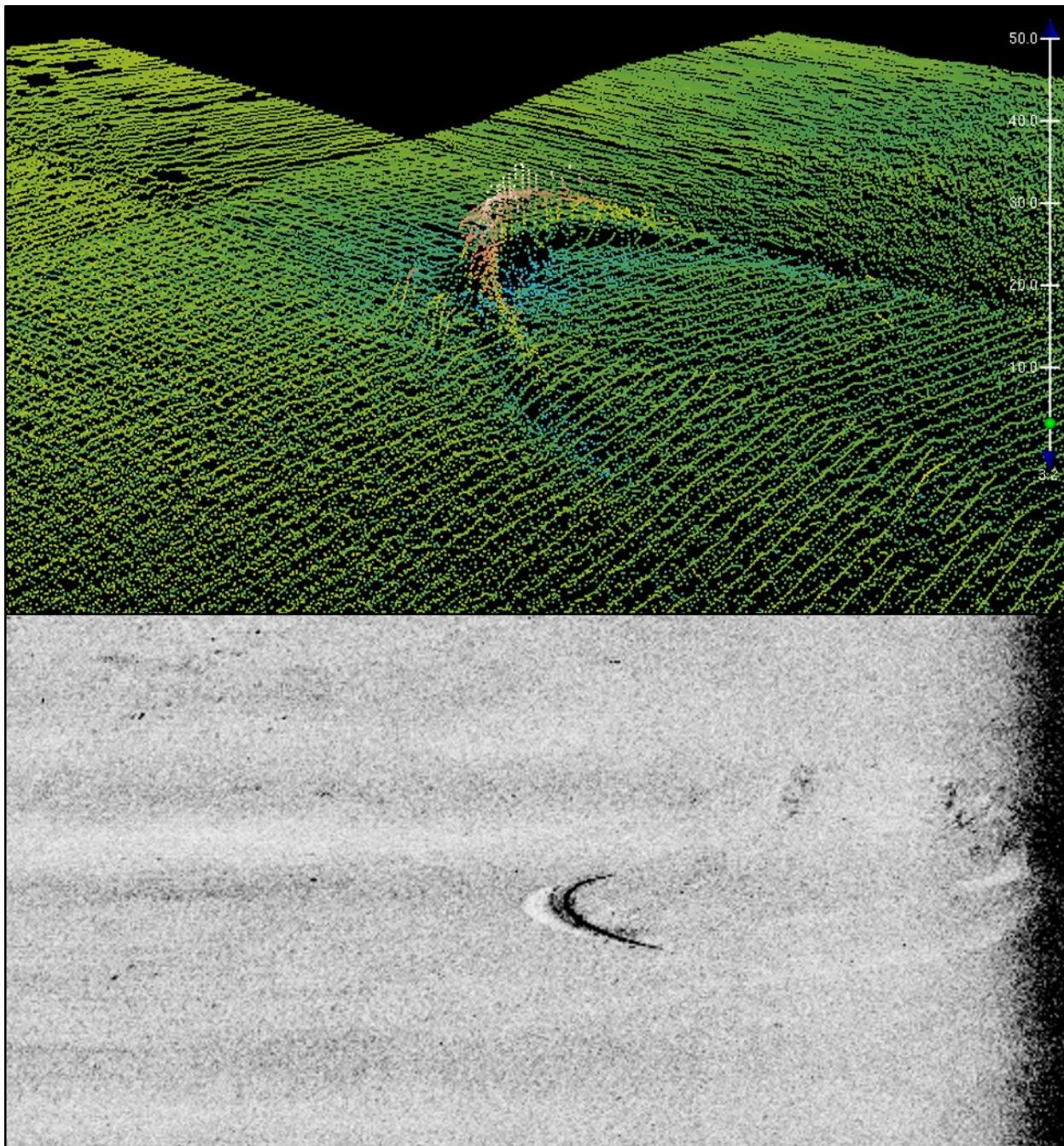
H13042 Non-DTON Seeps and Pipelines Report Image 1



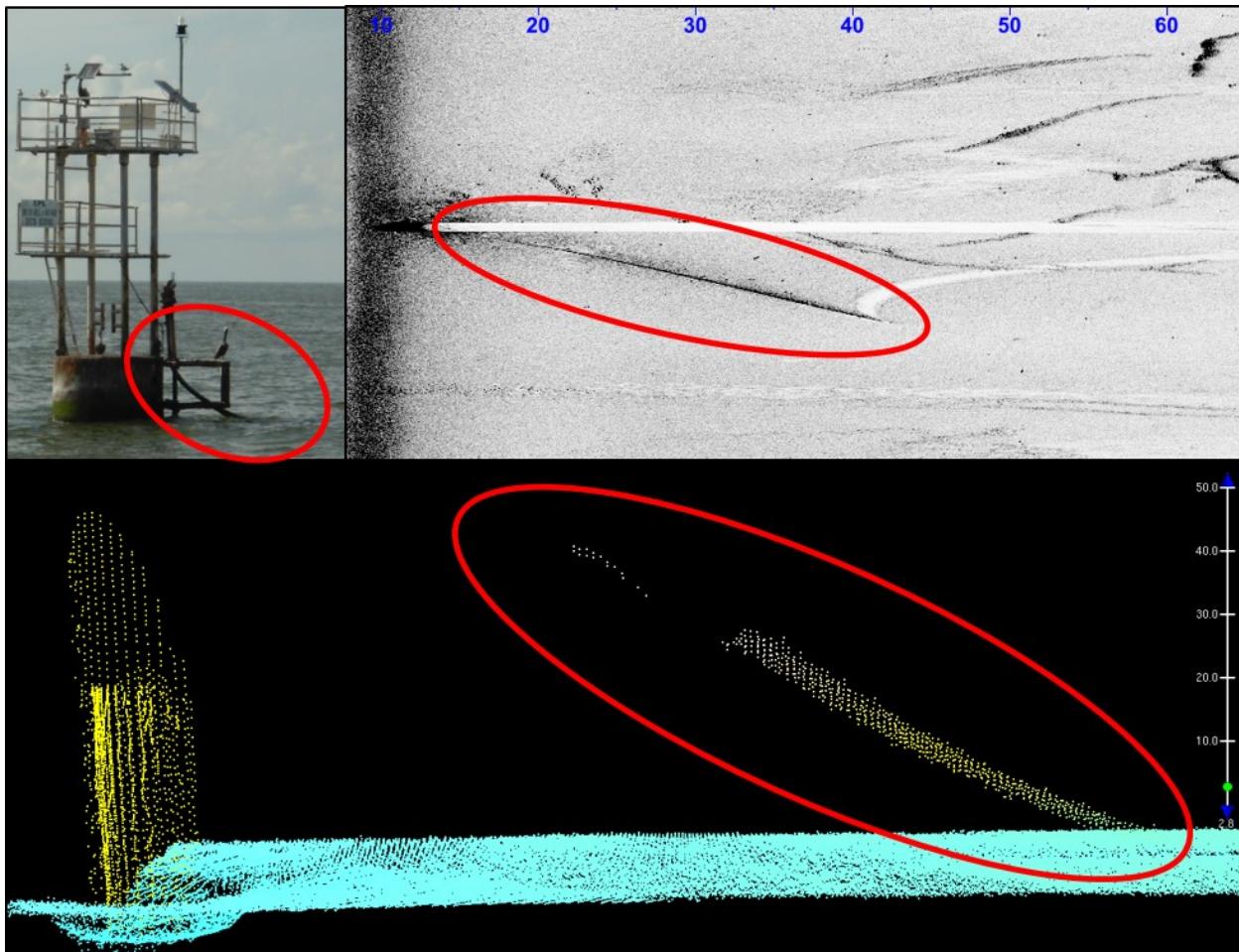
H13042 Non-DTON Seeps and Pipelines Report Image 2



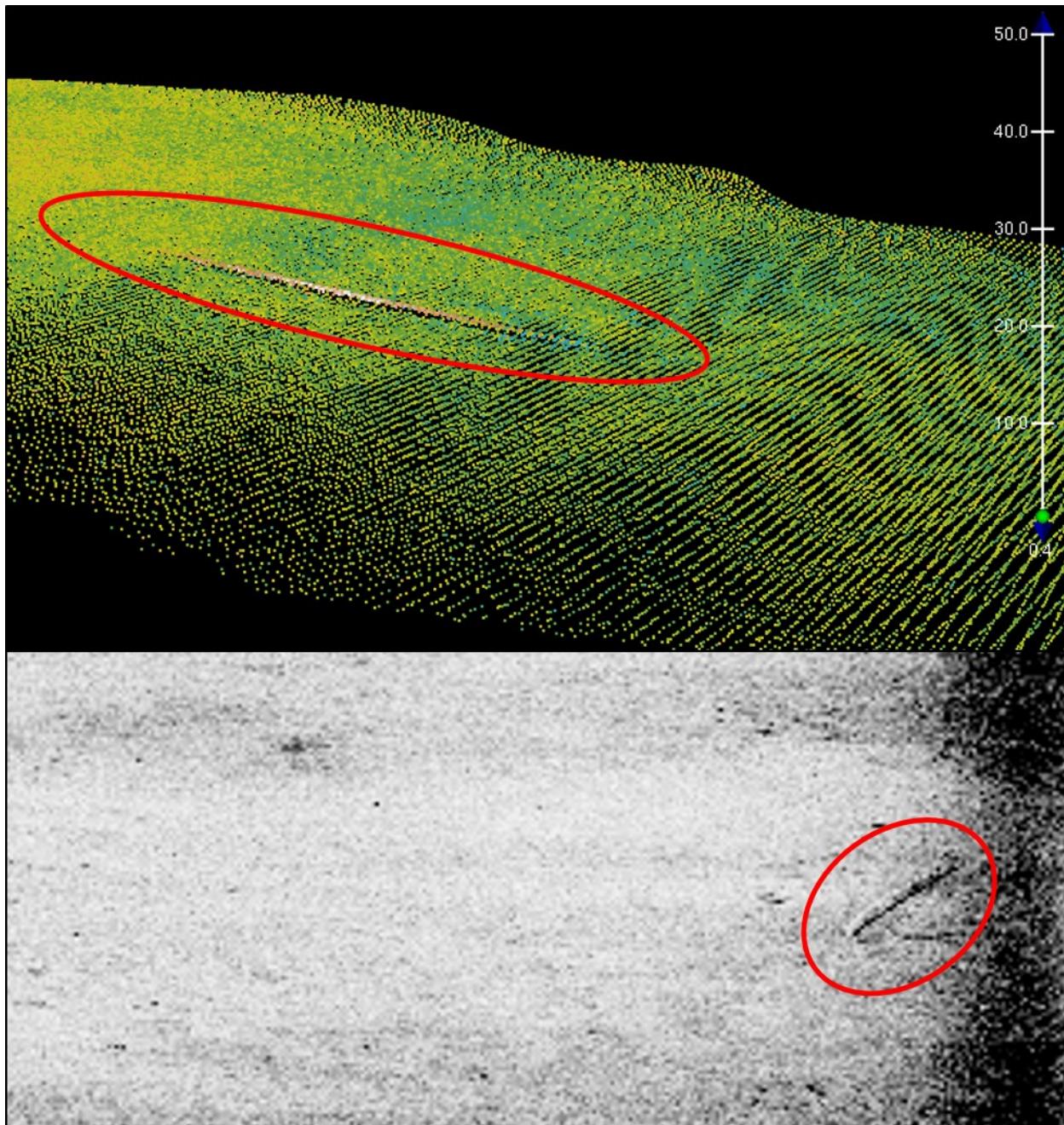
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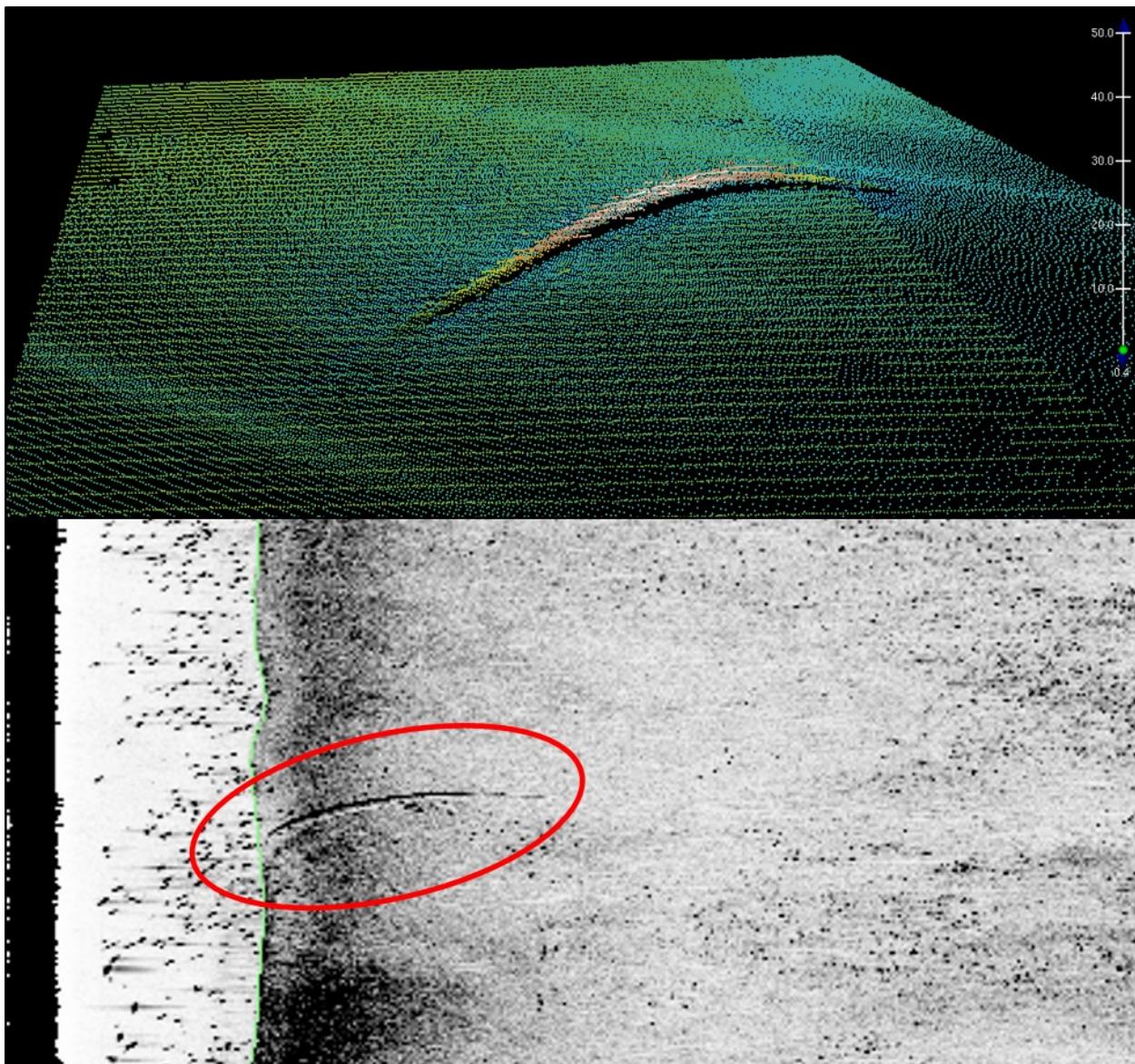
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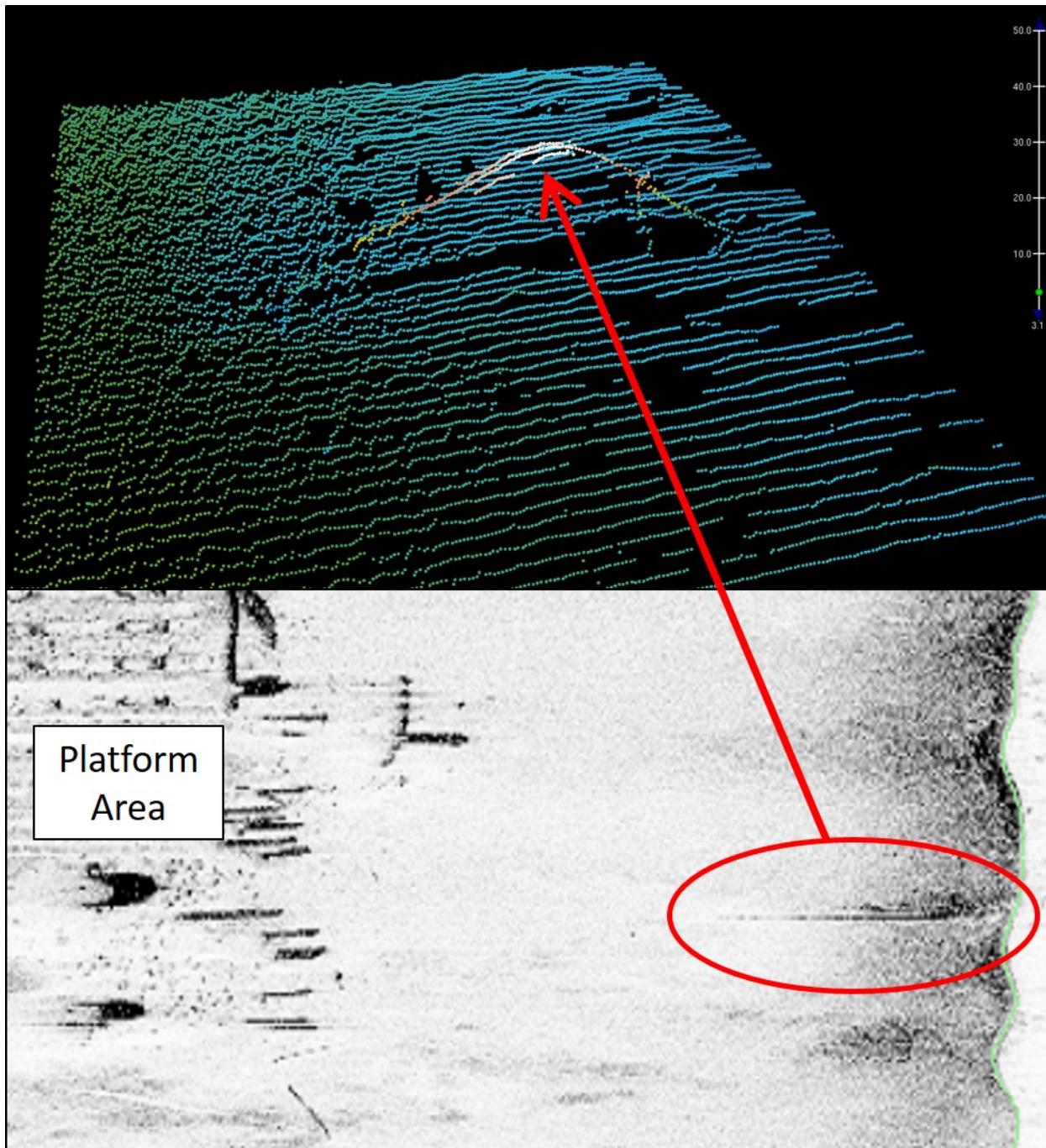
H13042 Non-DTON Seeps and Pipelines Report Image 5



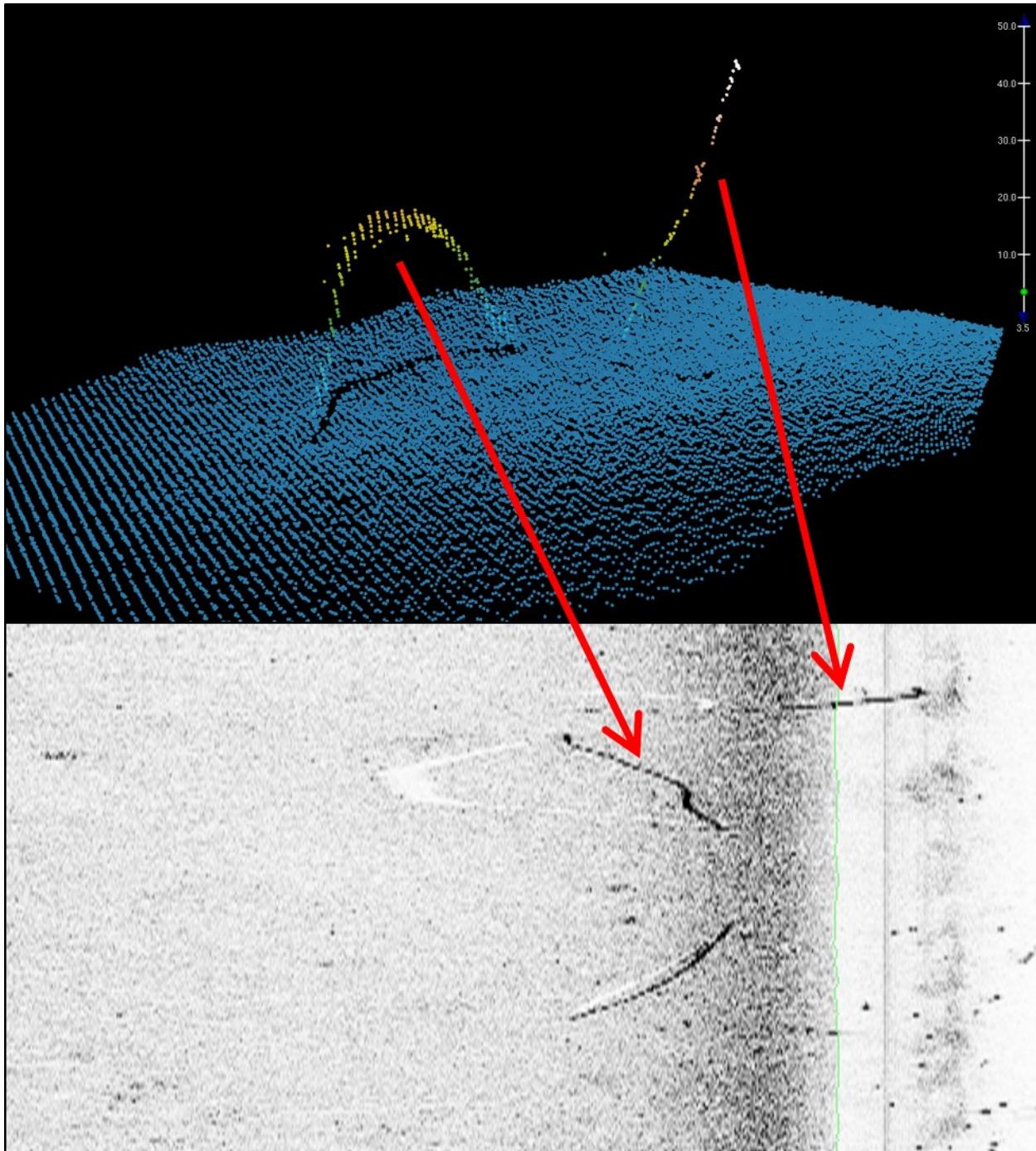
H13042 Non-DTON Seeps and Pipelines Report Image 6



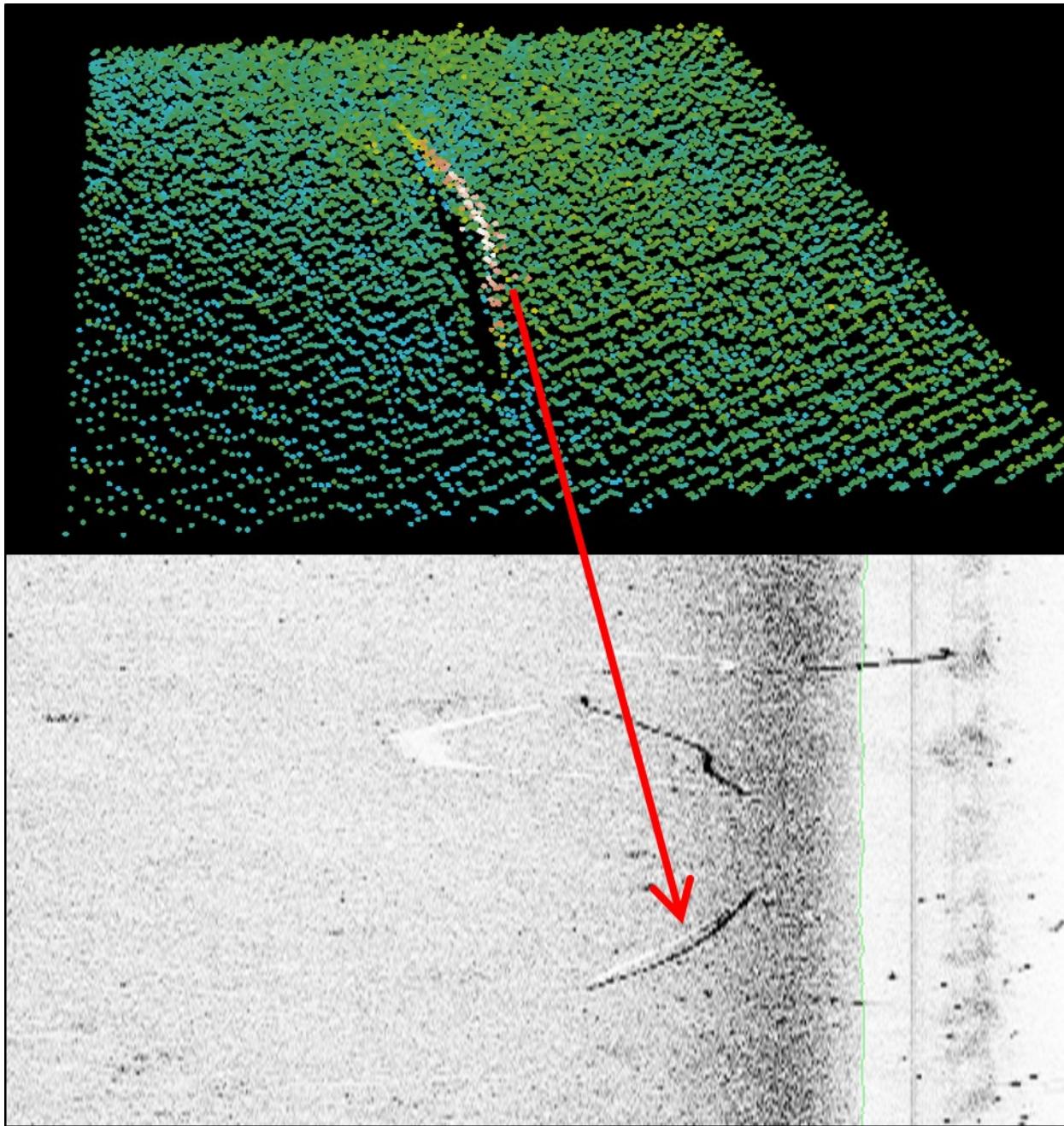
H13042 Non-DTON Seeps and Pipelines Report Image 7



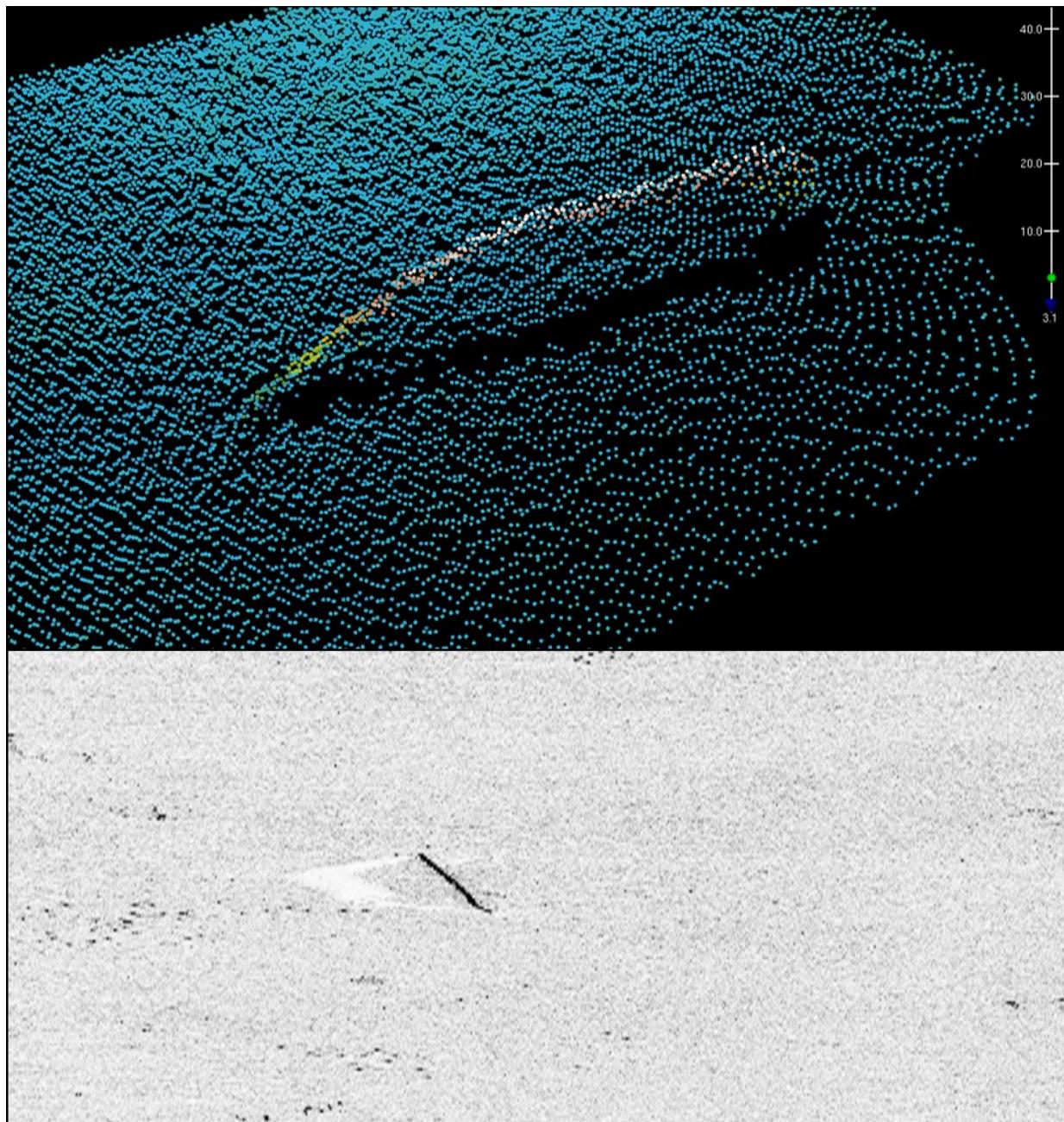
H13042 Non-DTON Seeps and Pipelines Report Image 8



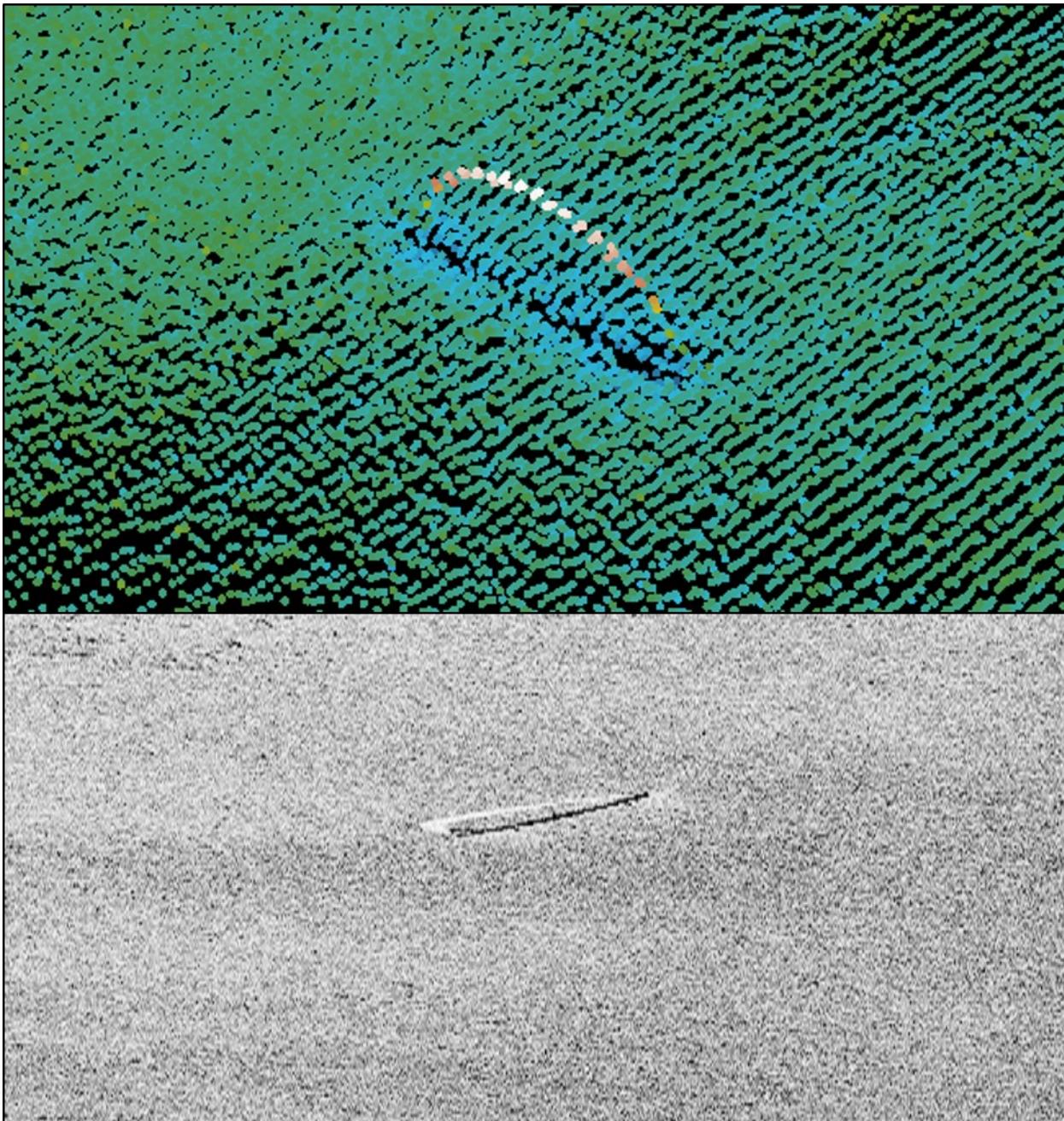
H13042 Non-DTON Seeps and Pipelines Report Image 9



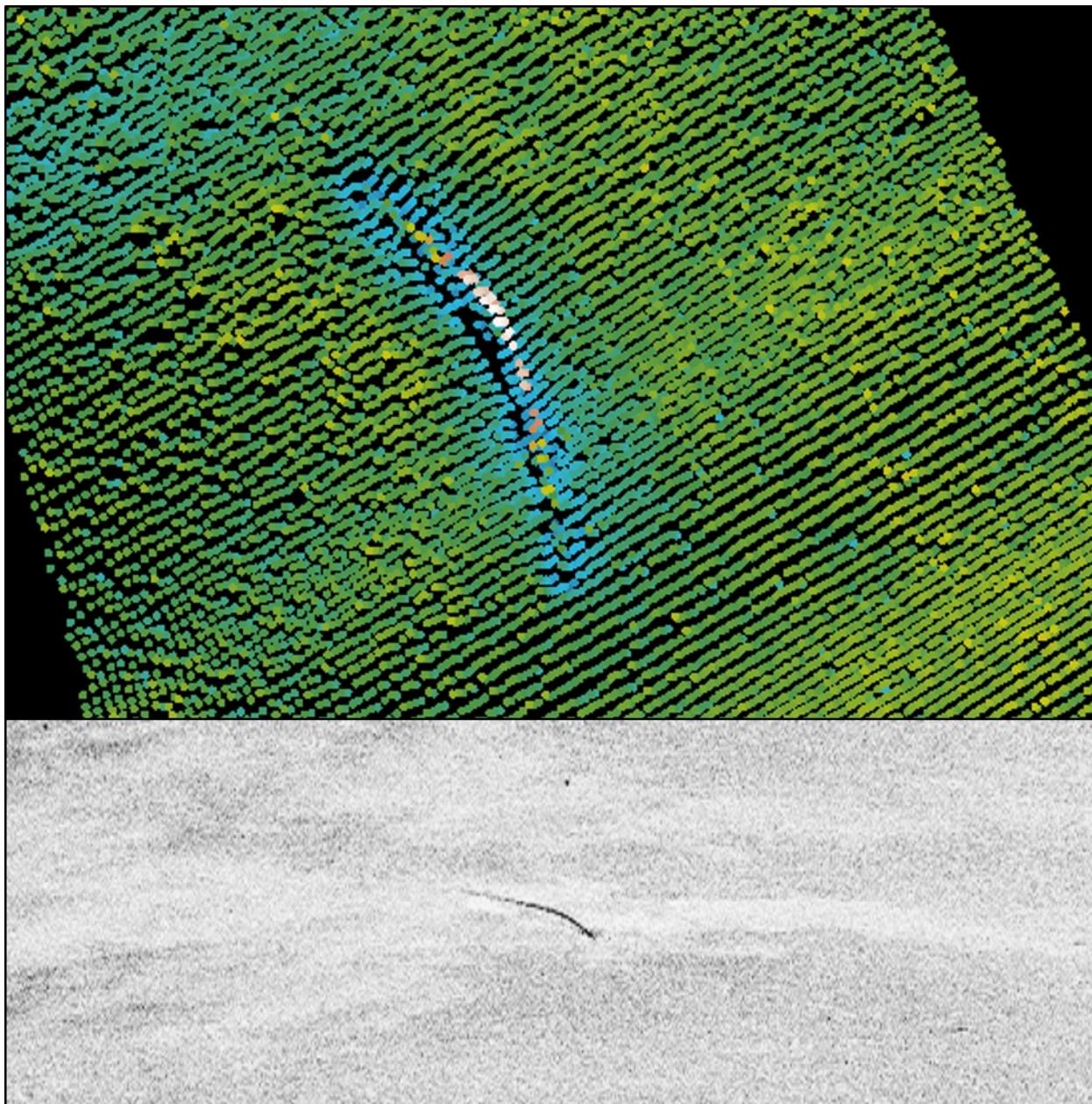
H13042 Non-DTON Seeps and Pipelines Report Image 10



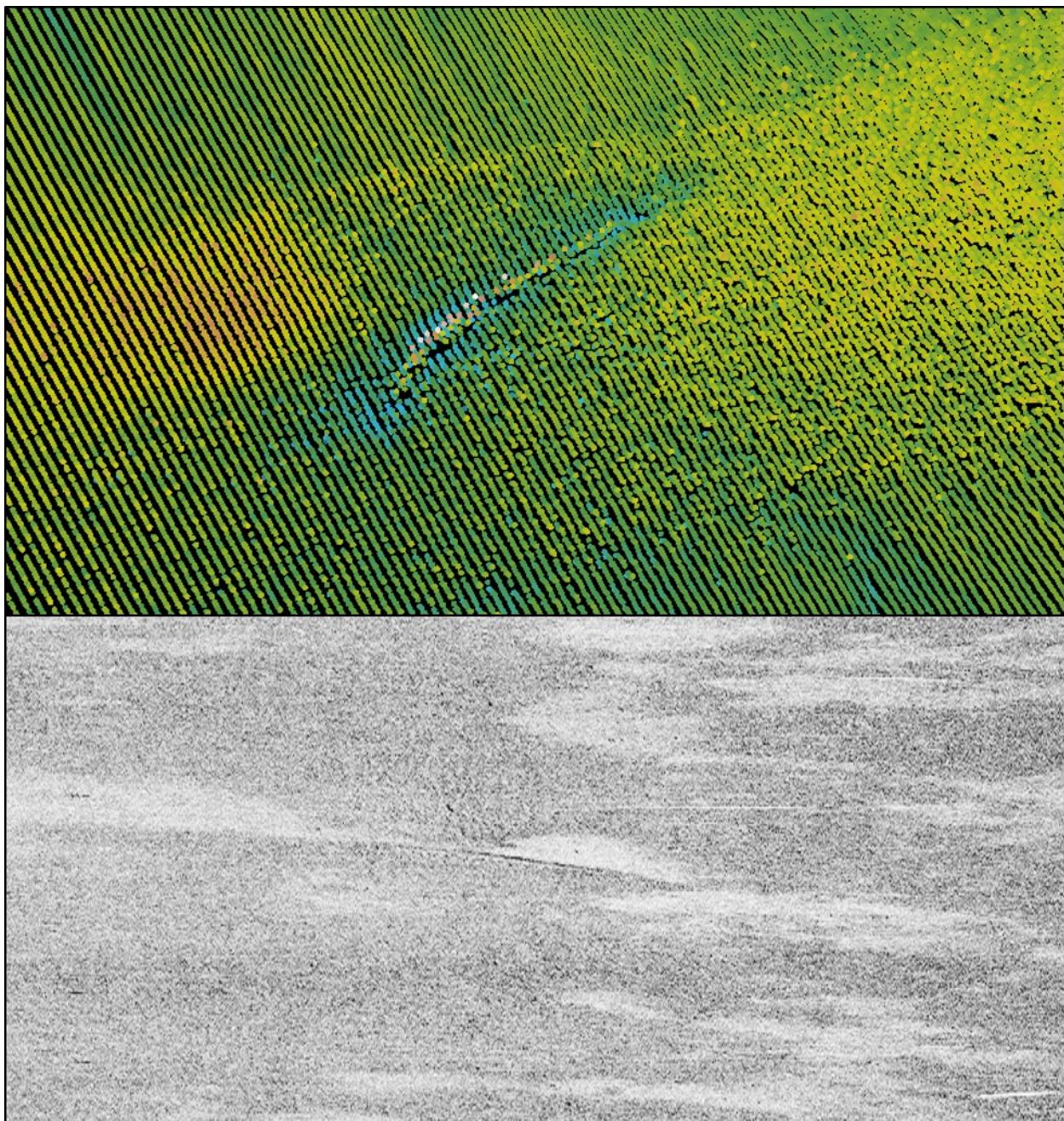
H13042 Non-DTON Seeps and Pipelines Report Image 11



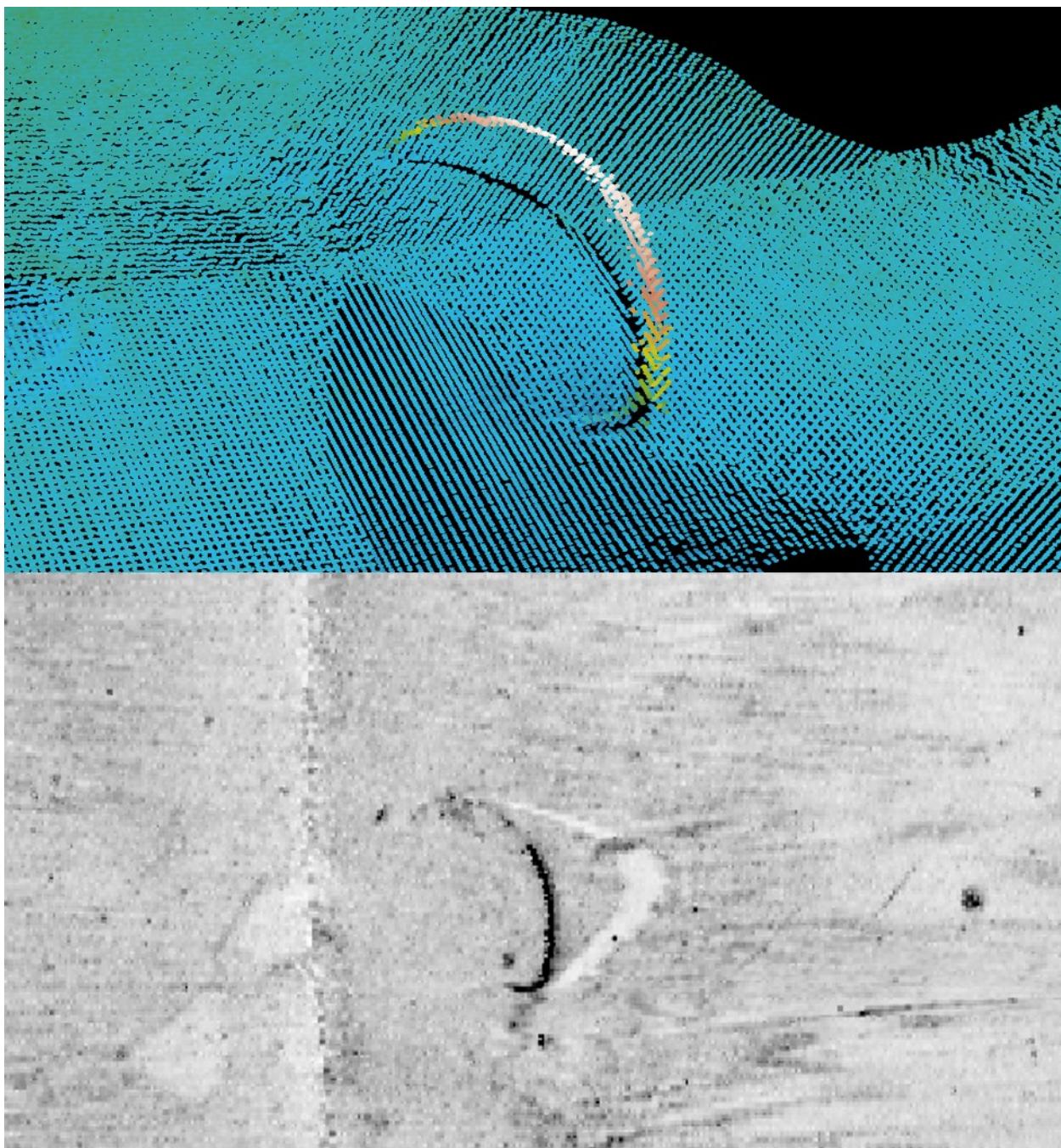
H13042 Non-DTON Seeps and Pipelines Report Image 12



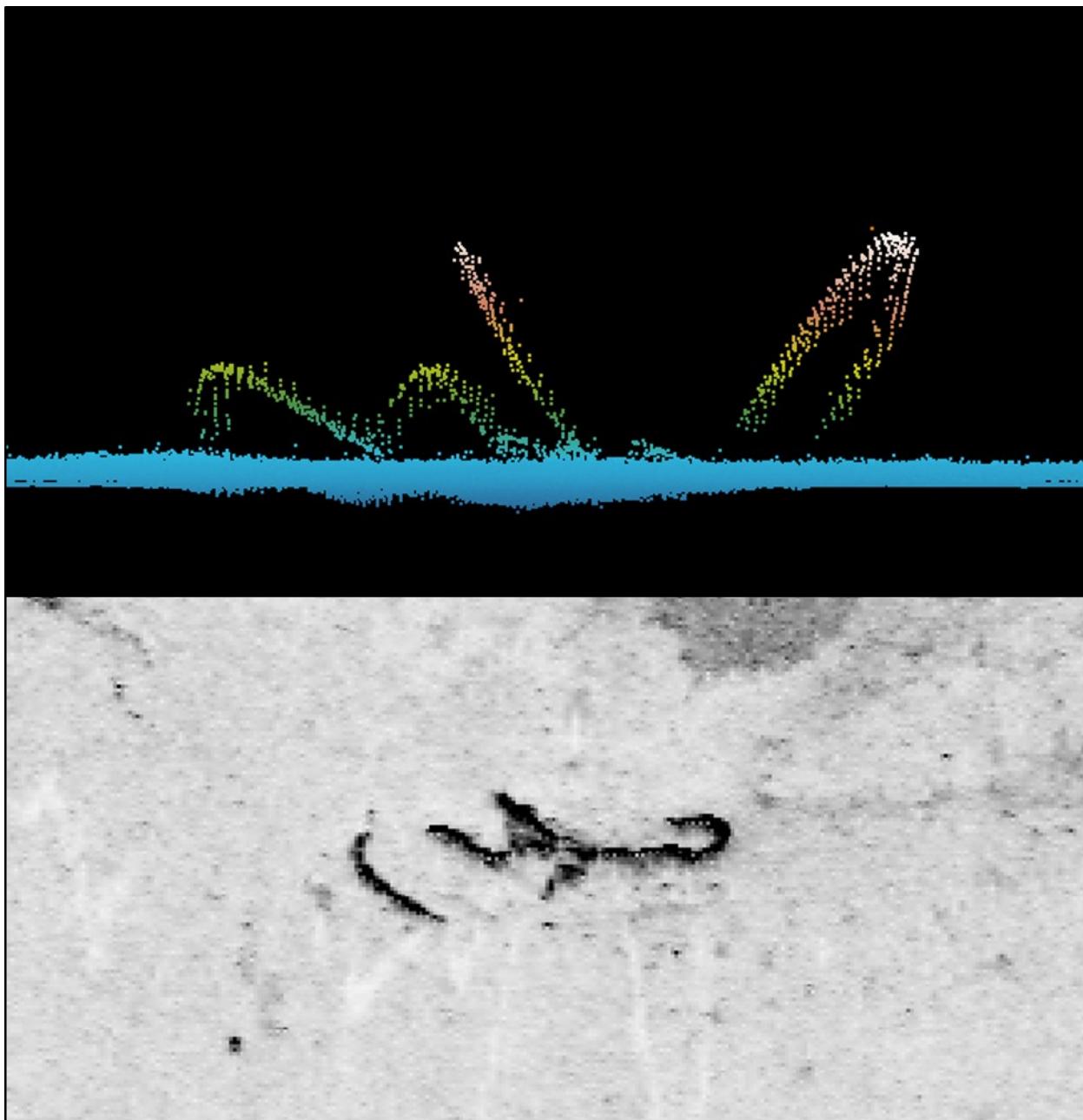
H13042 Non-DTON Seeps and Pipelines Report Image 13



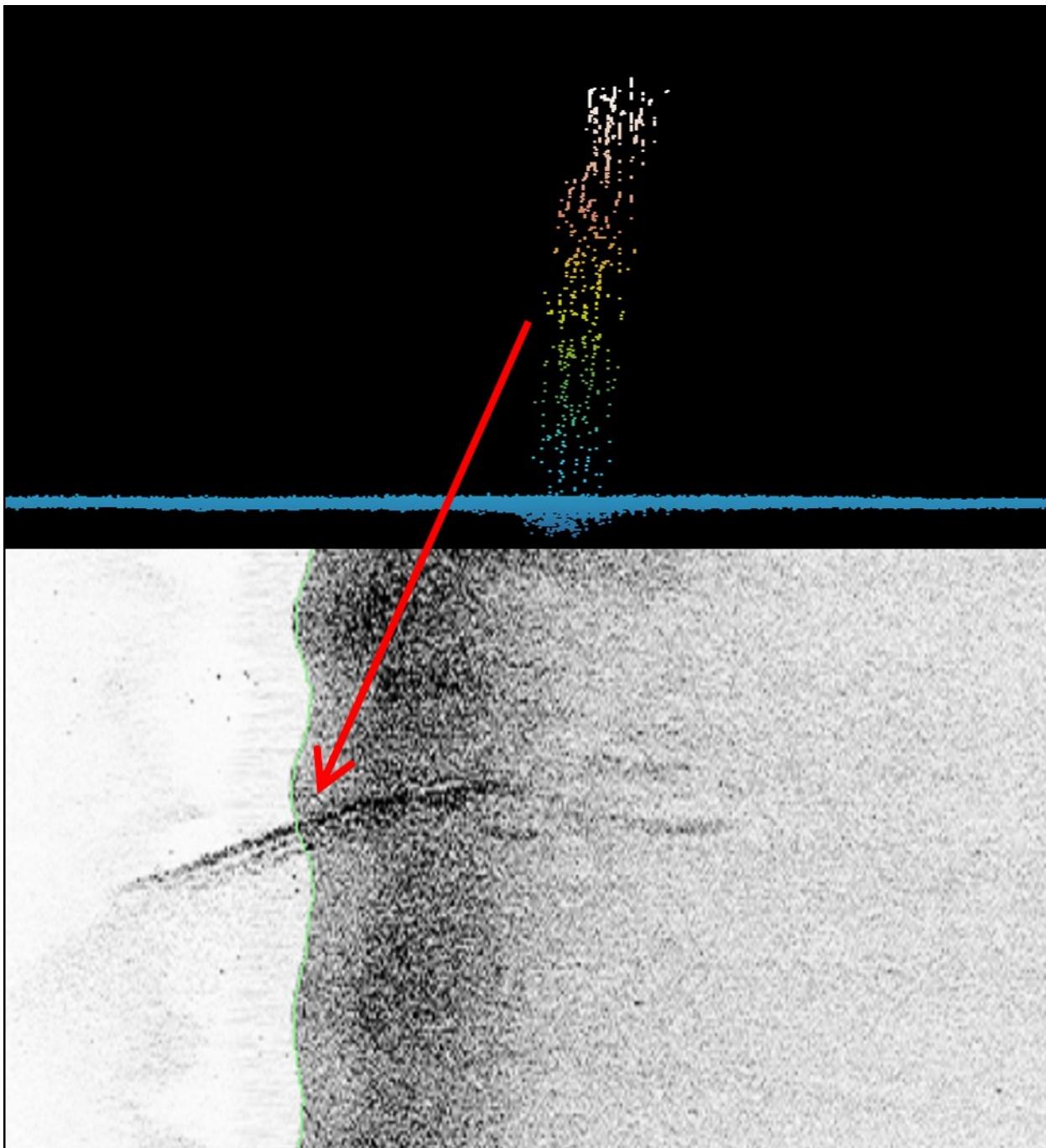
H13042 Non-DTON Seeps and Pipelines Report Image 14



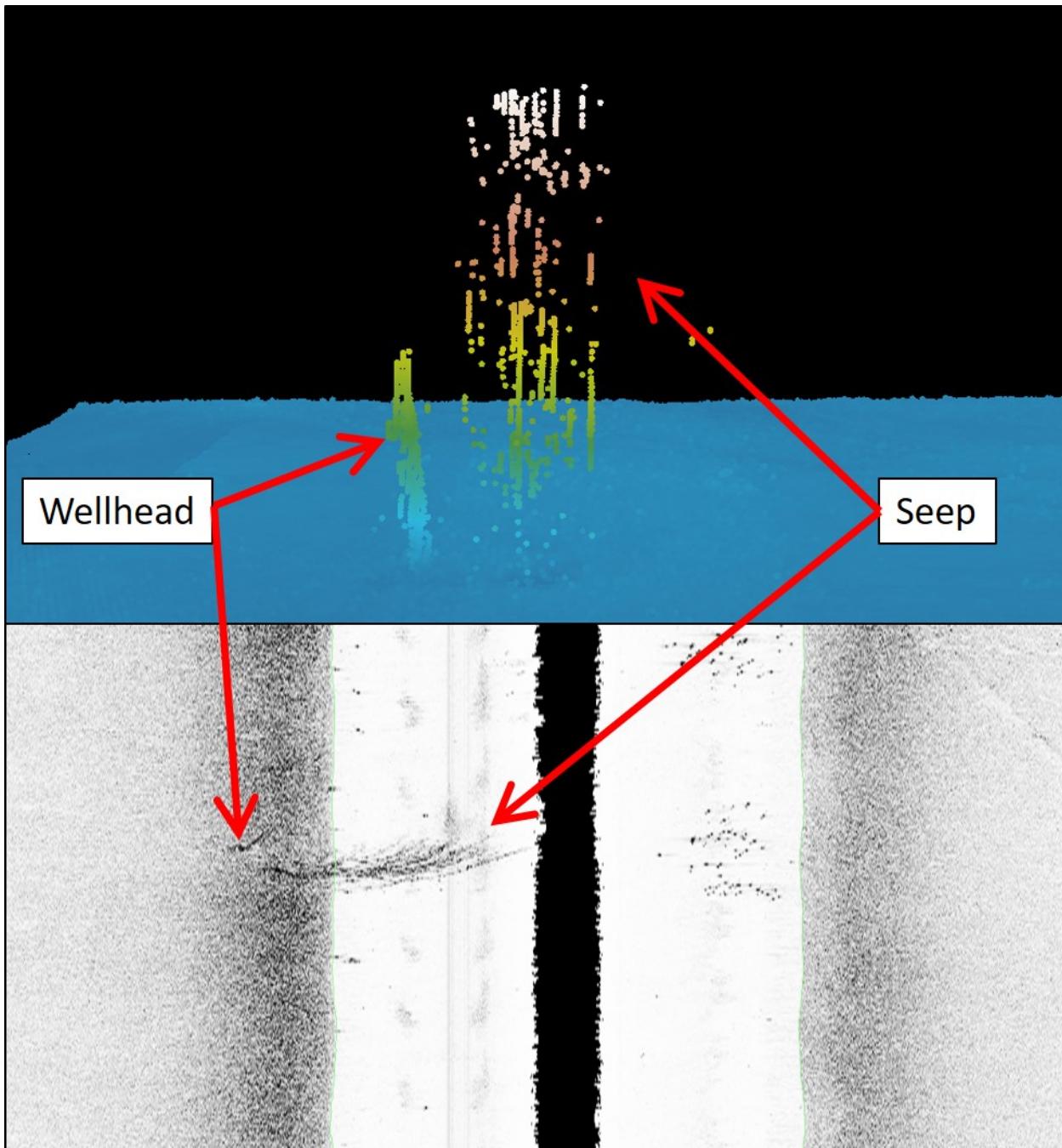
H13042 Non-DTON Seeps and Pipelines Report Image 15



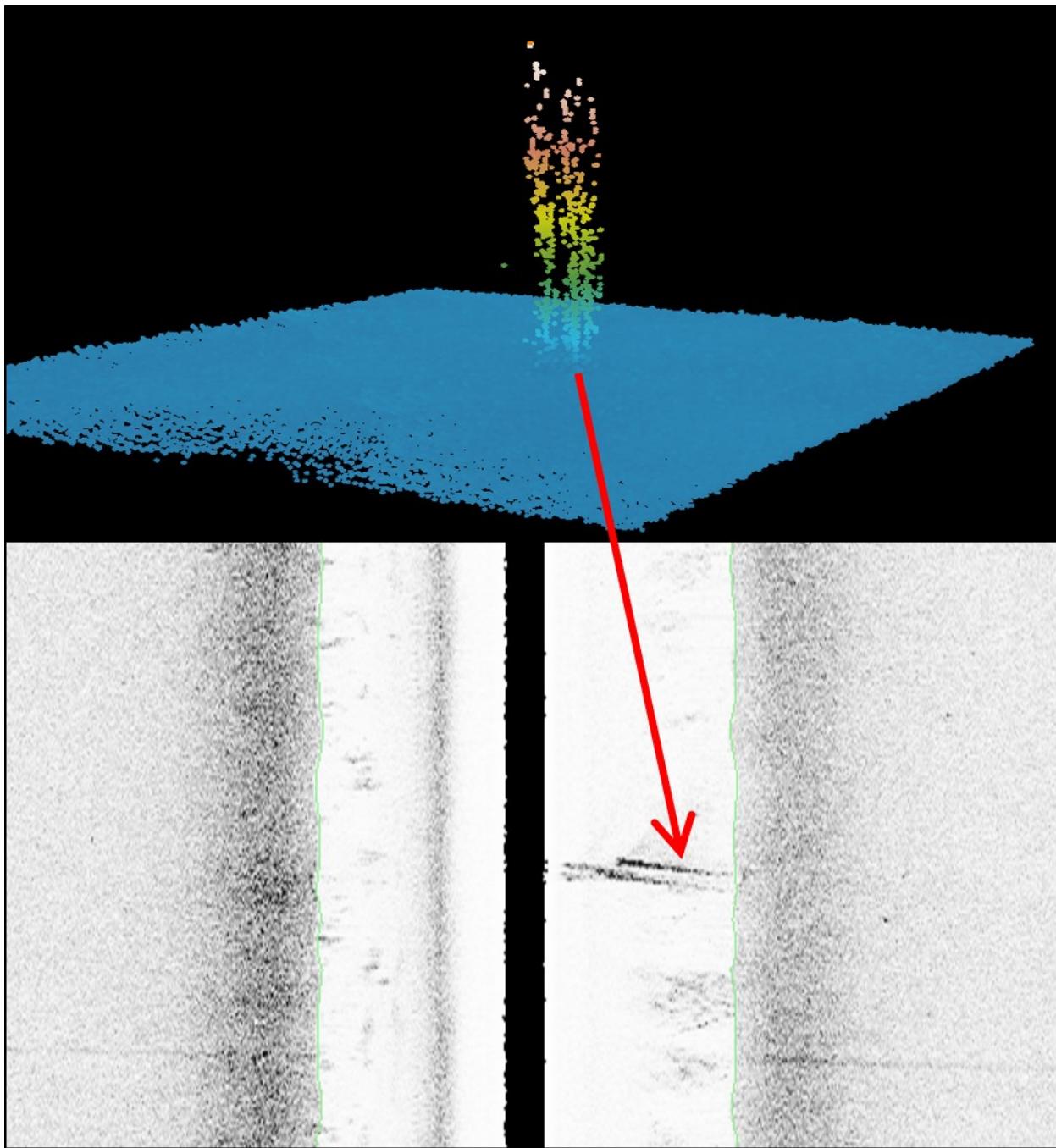
H13042 Non-DTON Seeps and Pipelines Report Image 16



H13042 Non-DTON Seeps and Pipelines Report Image 17



H13042 Non-DTON Seeps and Pipelines Report Image 18



APPROVAL PAGE

H13042

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
- Depth varied resolution BAG
- Processed survey data and records
- GeoPDF of survey products
- Collection of Backscatter mosaics

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

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

**Lieutenant Commander Ryan Wartick NOAA**  
Chief, Atlantic Hydrographic Branch