Final Report
Volume I
Acoustic Corer™ Survey – MC-20

For

Couvillion Group

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Revision History

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8	2022-11-23	SA/MM/CK/MK/RL/JYG	Minor edits – Resubmitted for use

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DOCUMENT REFERENCES

REF.	DOCUMENT NUMBER	DOCUMENT TITLE
(1)	N/A	Mississippi Canyon 20 Sub-bottom Acoustic Survey Statement of Work, Couvillion Group
(2)	Report No. 0201-6235	Geotechnical Investigation Excavation Project, OCS-G-04935 Block 20, Mississippi Canyon Area, Gulf of Mexico. Fugro document for Taylor Energy Company
(3)	https://www.nola.com/news/environment/article_669beed7-c134-592e-8971-290d7ba20031.html	Taylor Energy Site with Deepwater Horizon Accident Location, Nola.com
(4)	VES-Ocean-Evolution.20190607162033616	MSV Ocean Evolution Specifications Letter
(5)	N/A	Ocean Evolution_PanGeo Test Procedure (completed)

(6)	VE18202-SP-001	Suction Pile Drawings Rev D (23Aug2019)
(7)	N/A	Wellbore schematic and tree.pdf
(8)	N/A	Well-bay to Plume Check final.xlsx

Table 1 – External Document References.

REF.	DOCUMENT NUMBER	DOCUMENT TITLE
(9)	PAN-GRP-OPS-REQ-003	Acoustic Corer Vessel Requirements
(10)	PAN-P22-003O-LAR-001	MC-20 Launch and Recovery Procedure
(11)	PAN-P22-003O-PEP-001	Project Execution Plan
(12)	PAN-P22-003O-HIRA-001	MC-20 AC Survey Hazard Identification and Risk Assessment
(13)	PAN-P22-003O-HSEP-001	MC-20 Project HSE Plan
(14)	PAN-P22-003O-MOB-001	MC-20 Mobilisation-Demobilisation Plan
(15)	PAN-P22-003O-RPT-001	MC-20 Acoustic Corer™ Survey Draft Final Interpretive Report Volume II

Table 2 – Internal Document References.

ABBREVIATIONS

Abbreviation	Description
AC	Acoustic Corer™
Anomaly	Acoustically identified buried targets, suggestive of stratigraphic reflectors, debris/infrastructure, other than linear features
BML	Below Mud Line
DP	Dynamic Positioning
DBML	Depth Below Mudline
ft	feet
HF	High Frequency
HIRA	Hazard Identification and Risk Assessment
HSE	Health, Safety, and Environment
JYG(s)-Cross	Jacques Yves Guigné Cross
kPa	kilo Pascal
ksf	kilo pounds square ft
LARS	Launch and Recovery System
LF	Low Frequency
m	meter
MC-20	Mississippi Canyon Area, Block 20
MSL	Mean Sea Level
MSV	Marine Survey Vessel
OM	Offshore Manager

Abbreviation	Description
OpendTect	Visualization and interpretation software
PGSS	PanGeo Subsea
psf	pounds cubic ft
psi	Pounds per square inch
Ref.	Reference
ROV	Remotely Operated Vehicle
SAS	Synthetic Aperture Sonar
USBL	Ultra-Short Base Line
UTC	Universal Time Co-ordinate
UTM	Universal Transverse Mercator
Vrms	Root-Mean Square Velocity
ZoomSpace™	Advanced geophysical seismic processing software developed by Acoustic Zoom and owned by PanGeo Subsea.

Table 3 – Abbreviation Table.

EXECUTIVE SUMMARY

PanGeo Subsea carried out a sub-bottom/BML survey of the MC-20 site. Sixty-three (63) Acoustic Corer™ (AC) surveys for Couvillion Group were conducted to determine the extent, expanse, orientation and characteristics of the conductors and other well components from the platform's former well-bay location to the erosional pit adjacent to the downed jacket (Figure 1). After processing and interpretation of the acquired data, PanGeo was able to identify the full expanse of the well conductors and denote their location within the sub-seabed.

All equipment was mobilized onto the vessel *MSV Ocean Evolution* and managed by the PanGeo offshore supervisor. During mobilization, the vessel was equipped with the AC equipment along with a Launch and Recovery System (LARS) frame, one (1) 150HP W-ROV, and two USBL heads to be mounted on the AC booms.

Each of the sixty-three scans was conducted by deploying the Acoustic Core from Oceaneering's *Ocean Evolution* vessel onto a prepositioned suction pile located on the seabed. Each scan took approximately 14 hours and results were immediately sent to shore by GDS satellite transmission for further processing and data analysis.

The Acoustic Core device consists of a High-Frequency Chirp (HF), a Low- Frequency Chirp (LF), and a Parametric Source. These differing scan frequencies create a composite synthetic aperture to be formed with advanced processing algorithms. The data processing resulted in 3-D imagery, which exhibits and helps identify buried objects. High and Low Frequency (HF and LF) and Innomar/Parametric SAS surveys were acquired at sixty-three (63) Sites as shown in Figure 2 and Figure 5. In addition, JYG-Cross acoustic core data was acquired at seven (7) Sites: C04, A06, C09, A11, C14, A16, and AP12. The first six scans were completed at the beginning of the survey to build a baseline velocity model and the AP12 site was added as the need for additional scans along an AP row was identified.

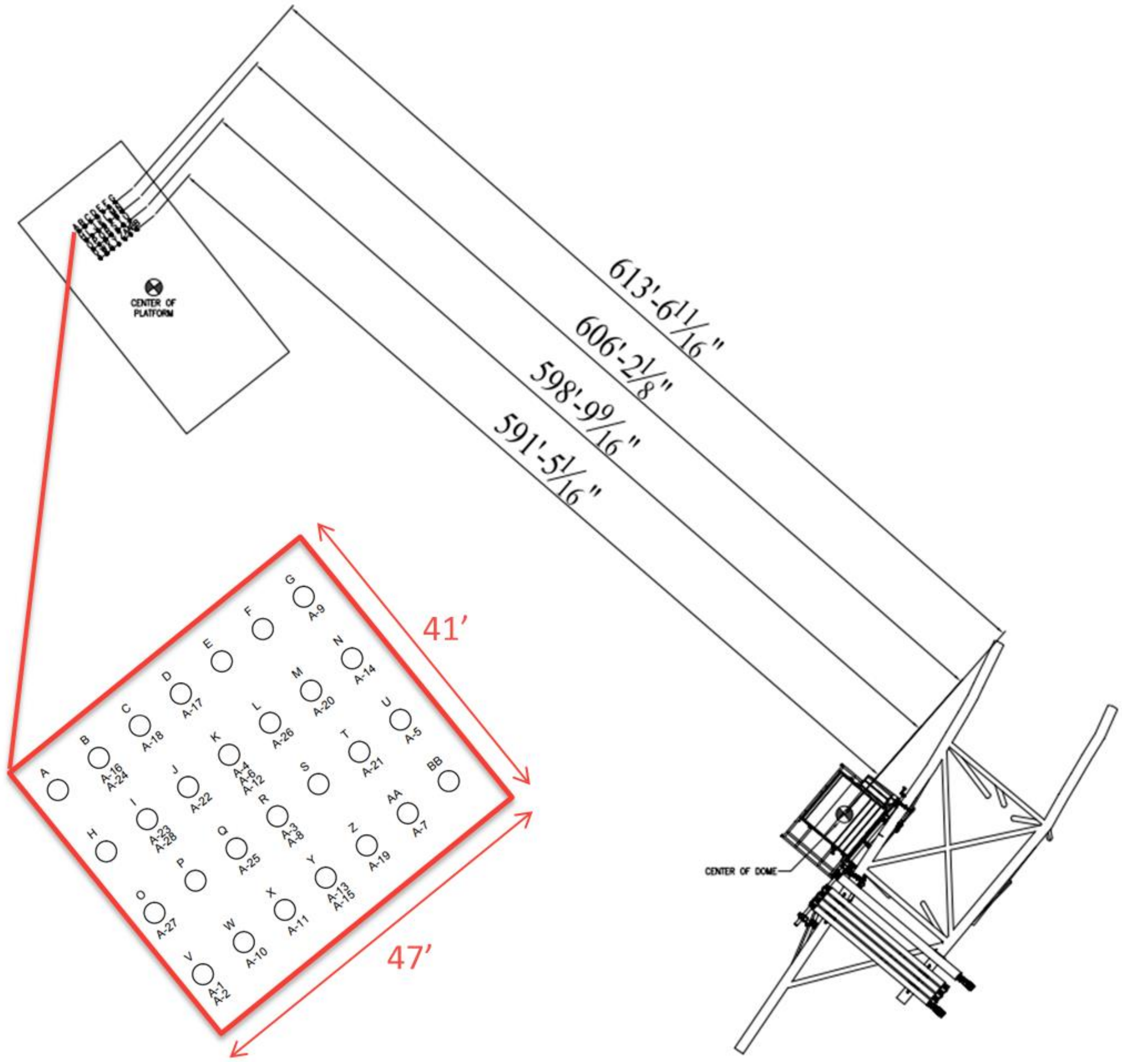


Figure 1 – Schematic of the well-bay area that shows how the conductors went originally into the ground. The well-bay area has the dimensions 47' x 41'. This layout also shows magnification lines running from the well-bay area to the centre of the dome.

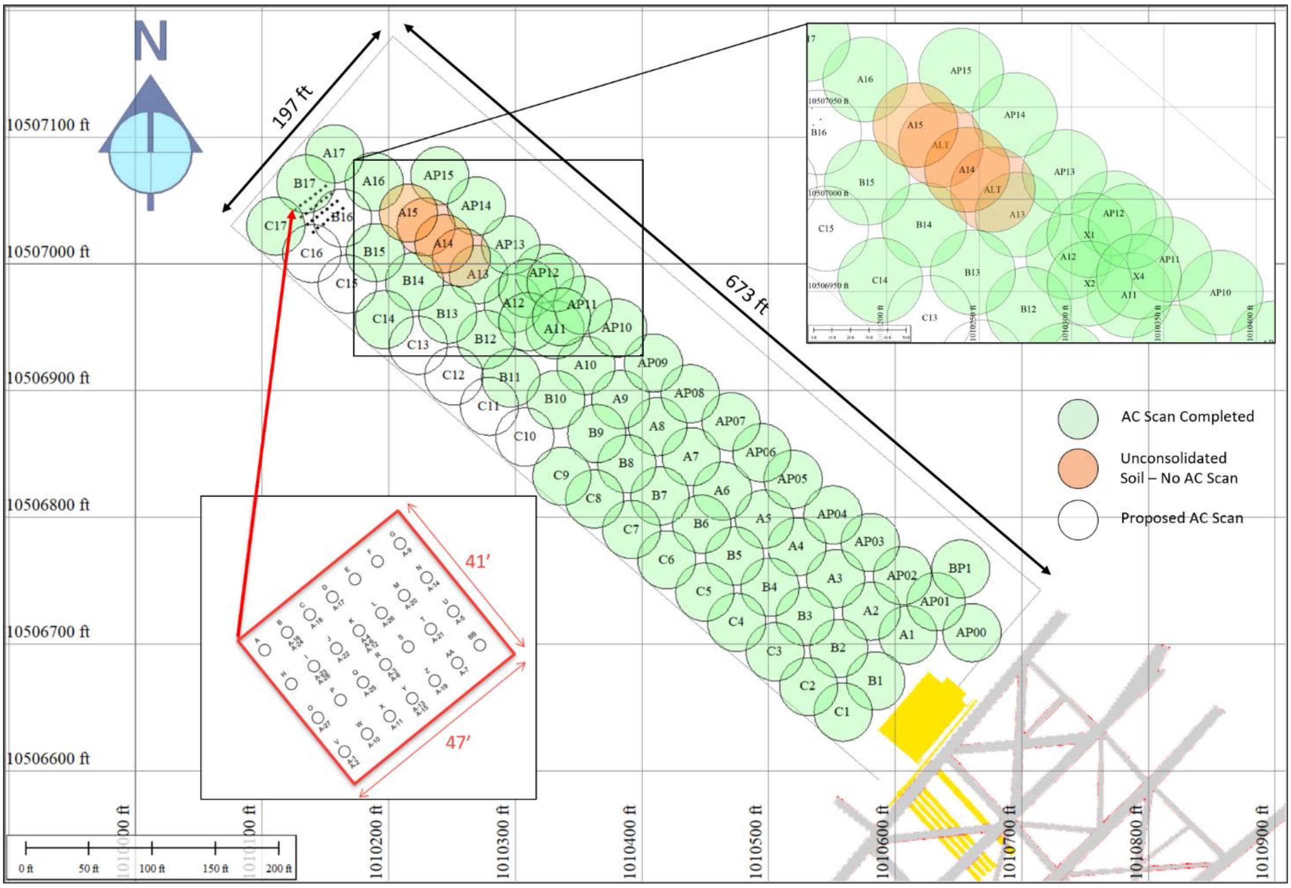


Figure 2 – MC-20 Site layout schematic.

Upon completion of each scan offshore, the collected data was transmitted via satellite by Oceaneering’s GDS sail system to PanGeo Headquarters. For each scan location PanGeo created a preliminary site report based on initial data processing to help steer upcoming scan locations. Next site decisions were based on the information collected from previous scans. Upon collection of all sixty-three scan locations further processing and refinement of data was performed. A 3-D model was then created which allowed for final analysis and interpretation.

The AC determines the vertical position of linear features and anomalies by converting acoustic reflection transmission-reception times to depth utilizing a velocity model representative of the survey site. The velocity model is determined via the semblance analysis of the JYG-Cross data. The acquired JYG-Cross multifold data, which employs low-frequency chirp acoustics, was used to determine the survey area’s compressional wave velocity profiles. Compressional wave velocities increased with increasing depth from 1460 m/s at the mudline to 1960 m/s at full penetration depth. These velocity profiles were used in subsequent data processing to create extended p-models for each survey site and interpolated Vrms profiles for post-processing depth conversions (Figure 15).

The acoustic core results provide a 40ft (12m) diameter volumetric image of the sub-bottom down to full penetration depth. The LF chirp acoustic data provided the deepest sub-bottom penetration (over 200ft). The HF and Innomar/Parametric data also attained depths of typically 0 - 200ft (0 - 60m) into the sub-seabed. Linear features and anomalies were identified using a combination of LF, HF, and Innomar/Parametric acoustic core volumetric images of the sub-seabed. The data volumes were analysed to identify linear features at depths of 0 - 165ft (0 – 50m) BML. A geological basement was identified in the depth range of 136ft to approximately 165ft depending on site location.

The data collection and processing program consisted of four consecutive phases:

Phase A: Collection of 63 singular Acoustic Corer datasets

- Velocity model generation for each corer, data processing, and production of preliminary results
- Initial understanding of the main target features, geological and man-made
- Delineation and reporting of linear features and sedimentary targets

Phase B: Assembling the 63 cores into a comprehensively compiled mosaic of the completed survey area

- Compilation of datasets into exact per core imagery assembled as distinct images
- Comprehensive interpretations and reporting

Phase C: Final migration into a unified dataset

- Topographic corrections of each individual core
- Generation of regional velocity model
- Volumetric migration to produce unified set of final renderings across all collected sites
- Detailed interpretation and reporting

Phase D: Visualization and digitization of conductor features

- Digitization of seabed surface, conductor features, and basement geology in Opend Tect software package
- Visualization in OpendTect and Navi Model software packages
- Release of Final Report

In summary, sixty-three Acoustic Corer scans were successfully acquired along four survey grid lines: AP, A, B, and C. Additional scans were conducted at BP1 and four X locations surrounding the A12 site. Each Acoustic Corer was then topographically corrected and processed as a singular large area seismic volume encompassing the whole regions of the four-survey grid lines; grid lines AP, A, B, and C. The unified migrated volume highlighted with clarity the presence of linear conductors in the A and AP scan lines from rows 0 through row 11 and minor indications of conductors in the B scan line.

The results first exhibited the presence of chaotic mud slide clay blocks interspersed within a depositional distribution of weak particle/particle unconsolidated bounded very fine sediments dispersed in the upper seabed region. A more densely consolidated geological dominant basement was revealed at approximately 136 to 165 ft. Of significance was the presence of smooth and continuous linear conductors reposing onto this basement geology. The continuity of the conductors indicated that the pipes were not in a state of fracture (apart from three through the wall conductor damage/leak locations). The conductors presented themselves as being continuous from the collector dome towards to the conductor bay.

The initial interpretation of the acoustic core data sets resulted in the identification of 307 linear features, defined as being discontinuous and continuous elongated features representative of conductor pipes, and 482 anomalies. Upon further analysis of the unified migrated volume, these linear features were interpreted to be 18 continuous conductor pipes from the collector dome towards the conductor bay. In addition to the conductors being continuous, there is evidence of potential collector wall leakage at a few locations. The three locations (AP08, AP01, and AP0) where gas anomalies are observed emanated from minor localized conductor wall damage. Typically, the acoustic responses from these three distinct targets reveal a vertical, highly contained flow. The flow is not noted to be volatile or holding a plume-spreading presence. AP0 is right at the collector dome region where the skirt of the containment resides. The AP0 gas/oil presence is propagating within the edges of the containment dome system, which further supports that the oil and gas being captured are propagating through the conductors. Based on the field survey conclusions and oil collection observations, it is likely that most of the oil and gas is contained within the conductors and a small percentage is seeping into the sub-seabed due to the conductor wall damage.

A noticeable characteristic of the conductors is how they manifest themselves directly across from the containment dome to the location of the original well-bay, following the basement slope closely. The Row 11 pipes' endings show an abrupt spread-out termination with an undulating humped, slightly down-looking character. This may be due to the pipes being kinked and going downward at a sharp angle so that we cannot pick up the conductors with the acoustics. It may be that the conductors are broken at Row 11 and 10" liners or smaller bore tubing feed oil and gas into the conductor and cannot be seen due to their smaller diameter size. In the region around Row 11, gas laden soil inhibited the acoustic ability to get a return and collect data. In contrast, the central zone, present the conductors as being intact, held together in a symmetrical bundle.

What was also noticed was the presence of gas in the sediments after Row 11; a masking effect is observed when viewing the upper sedimentary stratigraphy. In addition, at the mudline in the locations after Row 11 heading to Row 16, there exists a strong presence of entrapped embedded gas in the shallow mudline zone.

It is highly probable that the lack of acoustic imagery noted after Row 11 is being influenced or constrained by gas in the sediments. This is also potentially where the conductors are bending downwards. As the conductors rise towards the containment dome, the bundled pipes splay or spread apart, directly ending at the dome edge. However, it appears that the conductors continue under the dome region. The fact that the dome and conductors exactly coexist in position indicates their relationship with transporting the oil and gas to the dome capture area from the original well site.

The anomalies were a combination of discrete, sub-rounded to irregular and elongated features primarily related to the upper region of the sub-seabed geology and lesser debris. A breakdown of the number of linear features and anomalies that were identified and correlated in the HF, LF, and Innomar/Parametric acoustic cores for each site are provided in Table 4 and Table 5, respectively. Full details of identified linear features and anomalies are provided in Table 14 and Table 16 within the main body of the report (See Section 6.2). These details include X-Y-Z positions along the linear features along with size data and uncertainties and X-Y-Z coordinates of the top-centre of the anomaly together with size data and suggestive interpretation. Interpretive charts of each site are presented in Volume II of this report.

Linear Features Summary

Table 4 – Summary of the total number of linear features identified at each site. Included is a breakdown of which of the three (3) acoustic cores, HF, LF and Innomar/Parametric, each feature was identified in. The sites are presented in the following survey-line order: AP, A, B, C, BP, and X, whereby sites in which JYG-cross data was acquired in addition to SAS are marked with an Asterix (*).

Site	Total Number of Linear Features Identified	Number of Linear Features Identified in the HF Acoustic Core	Number of Linear Features Identified in the LF Acoustic Core	Number of Linear Features Identified in the Innomar/Parametric Acoustic Core
AP0	6	6/6	0/6	6/6
AP01	8	8/8	2/8	8/8
AP02	11	11/11	1/11	11/11
AP03	10	5/10	8/10	10/10
AP04	7	7/7	7/7	7/7
AP05	9	9/9	7/9	9/9
AP06	5	5/5	4/5	5/5
AP07	5	5/5	3/5	5/5
AP08	8	8/8	4/8	8/8
AP09	6	6/6	2/6	6/6

AP10	5	5/5	5/5	5/5
AP11	5	5/5	4/5	5/5
AP12*	0	0	0	0
AP13	0	0	0	0
AP14	0	0	0	0
AP15	0	0	0	0
A01	6	6/6	5/6	6/6
A02	5	5/5	5/5	5/5
A03	9	6/9	2/9	9/9
A04	5	5/5	2/5	5/5
A05	10	7/10	2/10	10/10
A06*	4	4/4	1/4	4/4
A07	12	12/12	8/12	12/12
A08	20	20/20	7/20	20/20
A09	10	10/10	8/10	10/10
A10	10	10/10	0/10	10/10
A11*	6	6/6	2/6	6/6
A12	0	0	0	0
A13	0	0	0	0
A16*	0	0	0	0
A17	0	0	0	0
B01	1	1/1	0/1	1/1
B02	4	4/4	2/4	4/4
B03	4	4/4	0/4	4/4
B04	7	7/7	2/7	7/7
B05	5	5/5	0/5	5/5
B06	2	2/2	2/2	2/2
B07	8	8/8	2/8	8/8
B08	2	2/2	0/2	2/2
B09	9	9/9	0/9	9/9
B10	2	2/2	2/2	2/2
B11	4	4/4	3/4	4/4
B12	0	0	0	0
B13	0	0	0	0
B14	0	0	0	0

B15	0	0	0	0
B17	0	0	0	0
C01	7	7/7	4/7	7/7
C02	9	9/9	0/9	9/9
C03	10	10/10	1/10	10/10
C04*	4	4/4	0/4	4/4
C05	5	5/5	0/5	5/5
C06	6	6/6	3/6	6/6
C07	6	6/6	4/6	6/6
C08	7	7/7	1/7	7/7
C09*	2	2/2	0/2	2/2
C14*	0	0	0	0
C17	0	0	0	0
BP01	4	4/4	4/4	4/4
X01	0	0	0	0
X02	0	0	0	0
X03	4	3/4	2/4	4/4
X04	13	13/13	12/13	13/13

Anomaly Summary

Table 5 – Summary of the total number of anomalies identified at each site. Included is a breakdown of which of the three (3) acoustic cores, HF, LF and Innomar/Parametric, each anomaly was identified in. The sites are presented in the following survey-line order: AP, A, B, C, BP, and X, whereby sites in which JYG-cross data was acquired in addition to SAS are marked with an Asterix (*).

Site	Total Number of Anomalies Identified	Number of Anomalies Identified in the HF Acoustic Core	Number of Anomalies Identified in the LF Acoustic Core	Number of Anomalies Identified in the Innomar/Parametric Acoustic Core
AP0	7	7/7	1/7	7/7
AP01	25	25/25	3/25	25/25
AP02	3	3/3	1/3	3/3
AP03	0	0	0	0
AP04	2	2/2	0/2	2/2
AP05	21	21/21	4/21	21/21
AP06	20	20/20	6/20	20/20
AP07	0	0	0	0
AP08	26	26/26	8/26	26/26
AP09	12	12/12	1/12	12/12

AP10	6	6/6	0/6	6/6
AP11	9	9/9	3/9	9/9
AP12*	1	1/1	0/1	1/1
AP13	1	0/1	0/1	1/1
AP14	1	1/1	0/1	1/1
AP15	1	1/1	0/1	1/1
A01	23	23/23	11/23	23/23
A02	12	12/12	1/12	12/12
A03	10	10/10	0/10	10/10
A04	1	1/1	0/1	1/1
A05	3	2/3	0/3	3/3
A06*	8	8/8	0/8	8/8
A07	10	10/10	2/10	10/10
A08	1	1/1	0/1	1/1
A09	0	0	0	0
A10	1	1/1	0/1	1/1
A11*	7	7/7	0/7	7/7
A12	0	0	0	0
A13	0	0	0	0
A16*	0	0	0	0
A17	0	0	0	0
B01	2	2/2	0/2	2/2
B02	3	3/3	1/3	3/3
B03	9	9/9	0/9	9/9
B04	40	40/40	2/40	40/40
B05	19	19/19	0/19	19/19
B06	2	2/2	1/2	2/2
B07	25	25/25	0/25	25/25
B08	5	5/5	0/5	5/5
B09	6	6/6	1/6	6/6
B10	2	2/2	0/2	2/2
B11	1	1/1	0/1	1/1
B12	1	1/1	0/1	1/1
B13	1	1/1	0/1	1/1
B14	0	0	0	0

B15	1	1/1	0/1	1/1
B17	1	1/1	0/1	1/1
C01	17	17/17	8/17	17/17
C02	33	33/33	7/33	33/33
C03	3	3/3	1/3	3/3
C04*	2	2/2	0/2	2/2
C05	9	9/9	0/9	9/9
C06	30	30/30	0/30	30/30
C07	27	27/27	0/27	27/27
C08	4	4/4	0/4	4/4
C09*	6	6/6	0/6	6/6
C14*	0	0	0	0
C17	5	5/5	1/5	5/5
BP01	6	6/6	0/6	6/6
X01	1	1/1	0/1	1/1
X02	0	0	0	0
X03	3	1/3	0/3	3/3
X04	6	6/6	1/6	6/6

In conclusion, the results of the re-processing and re-examination as one unified dataset led to the following key interpretations:

- The composition of the upper sub-seabed region (first 60ft) is unconsolidated and chaotic and is associated with mudslide flow.
- A total of 307 linear features and 482 anomalies were identified at the MC-20 site.
- Post-processing and analysis of these features showed a conductor bundle primarily in Lines AP and A running from beneath the RRS collection dome that appear to abruptly terminate in Row 11 of the survey field which is 202.72ft (61.79m) from the original conductor bay of the platform.
- These conductors are found between approximately 91 - 158ft depth, with the greatest concentration appearing between 130ft to 155ft depth. The shallowest conductor appears at 91ft depth trending downwards from the collection dome.
- There is a consolidated basement floor on which the conductors are resting; the conductors closely follow the slope of this basement.
- A cross-sectional analysis of the conductor bundle was able to positively identify eighteen (18) of the twenty-eight (28) conductors. The remaining ten (10) conductors may be encased within the conductor bundle but are not detectable due to the shielding effect of the compactness of the conductors blocking the imaging signals.
- The presence of gas/oil was identified at sites AP0, AP01, and AP08 moving vertically upwards from the conductor bundle. This is indicative of through wall damage in the conductors.
- The apparent termination of the conductor bundle at Row 11 is due to one of three possible scenarios:

  - The conductor bundle has fractured at Row 11 and smaller diameter tubing, or liner is providing a conduit for the flow of hydrocarbons through the conductors from Row 11 to the RRS dome and cannot be detected by the Acoustic Corer.
  - The conductor bundle has been bent downwards at a steep angle and cannot be detected by the Acoustic Corer.
  - The gas entrained soil identified in Rows 11-17 has inhibited the Acoustic Corer from identifying the conductor bundle in these rows.
- Within the survey area, 88 of the 482 anomalies have been identified as manmade debris. The remainder were identified as geological composition.

1 INTRODUCTION

1.1 Project Description

PanGeo Subsea carried out a sub-bottom/BML survey of the MC-20 site. Sixty-three (63) Acoustic Corer™ (AC) surveys for Couvillion Group were conducted to determine the extent, expanse, orientation and characteristics of the conductors and other well components from the platform's former well-bay location to the erosional pit adjacent to the downed jacket. The survey area has the size of 673 x 197 ft. The original well-bay area has the size of 47 x 41 ft. The main body of the collector dome has the size of 40 x 40 ft, and its extension to the right has the size of 20 x 10 ft. The acoustic core results provide a 40ft (12m) diameter volumetric image of the sub-bottom down to full penetration depth of approximately 200ft.

Data acquisition was completed in the following Site order (Figure 5): B09, C04, A06, C09, A11, C14, A16, B08, B10, A03, A04, A05, A09, A10, A12, A07, A08, A17, B17, C17, C08, C07, B07, B06, B05, C06, C05, B04, B03, C03, AP10, AP09, AP08, AP06, AP07, C02, B02, A02, C01, B01, A01, AP01, AP02, AP03, AP04, AP05, AP11, AP12, B12, B11, AP13, AP14, B14, A13, X01, X02, X03, X04, BP01, B13, AP0, B15, and AP15. However, the site locations and data information (linear features and anomalies) tables (Table 4, Table 5, Table 7, Table 14, and Table 16) are presented in the following survey-line order: AP, A, B, C, BP, and X.

1.2 Project Objective

PanGeo Subsea carried out the following Acoustic Corer™ imaging services:

- A review of existing geotechnical data to assess the stability of the soil regime.
- A sub-bottom/below mudline (BML) Acoustic Corer™ survey to identify and accurately map any linear features suggestive of conductors and geological strata within the cylindrical Acoustic Core.
- Reporting of any additional anomalies interpreted to be stratigraphic reflectors, debris, or infrastructure located in each of the cores.

The sequence of events and deliverables provided can be seen in Table 6 below.

Table 6 – Timeline of tasks and deliverables.

Stage	Deliverable
Prior to Mobilization	• Study of existing geotechnical data. • Acoustic Corer & Sub-Bottom Imager Data Acquisition Plan developed between PanGeo, Oceaneering, and Couvillion Group and accepted by all parties.
In Field	• Acceptance Report confirming spread is operational. • Daily Progress Reports (DPRs) during the work. • Preliminary and QA/QC reports delivered within 24 hours after surveying a core containing recommendations for potential modifications of the Data Acquisition Plan based on the AC results to date.

Stage	Deliverable
On Shore	• Site Report provided 24 hours after processing of data begins onshore or offshore. Report will include: JYG-Cross and SAS data interpretation, linear feature and anomaly locations in tabular format, alongside figures showing position within the core. • Draft Final Interpretive Report delivered after all data acquisition and Preliminary Reports have been completed. This report includes survey methodology, tables, and positional maps of identified linear features and anomalies, including positional data and Draft Final interpretation. • Draft Final Report to be delivered 8 weeks after acquisition is completed. • Final Report is due for submission ahead of final presentation hosted by Couvillion group in Washington DC on December 6,2022.

1.3 Site Investigation Locations

Figure 3 and Figure 4 below show the location of the survey area and positional data associated with the scan locations (Figure 5 and Table 7) and the locations of the planned Acoustic Corer™ surveys.

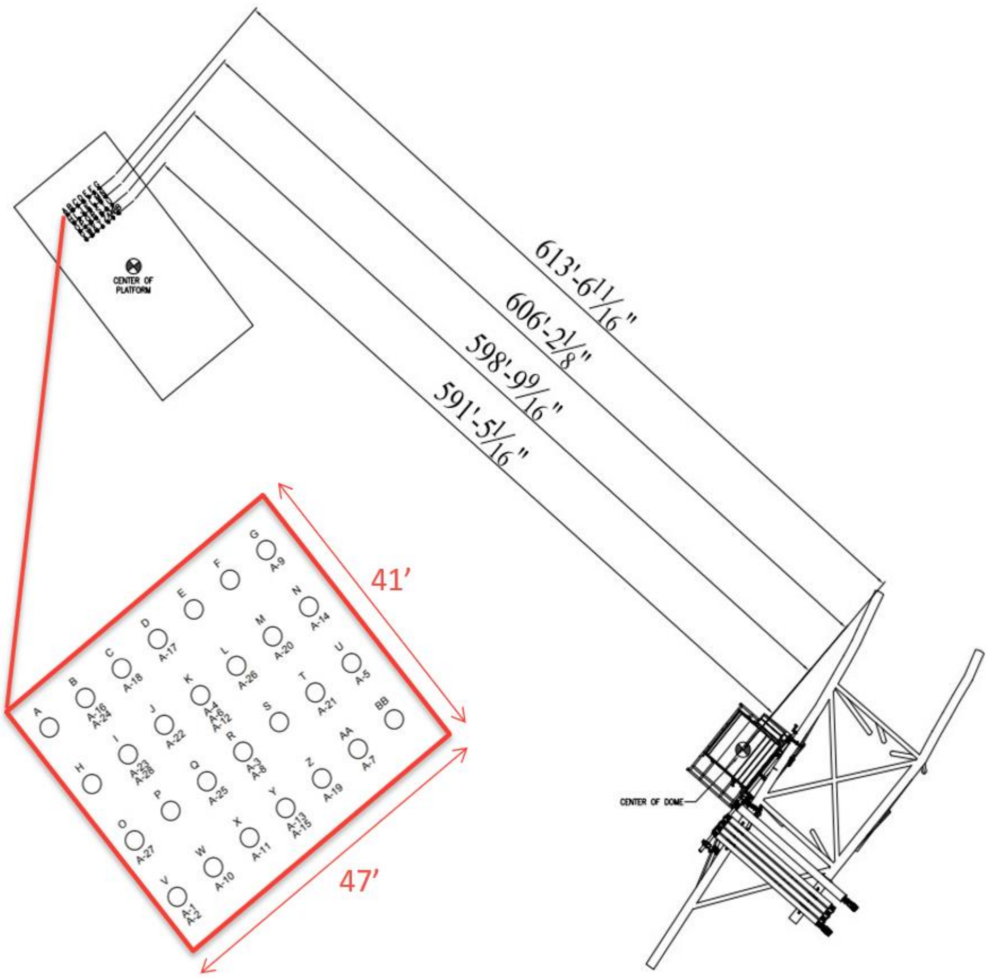


Figure 3 – Mississippi Canyon Area, Block 20 schematic of the well-bay area that shows how the conductors went originally into the ground. The well-bay area has the dimensions 47' x 41'. This layout also shows magnification lines running from the well-bay area to the centre of the dome.

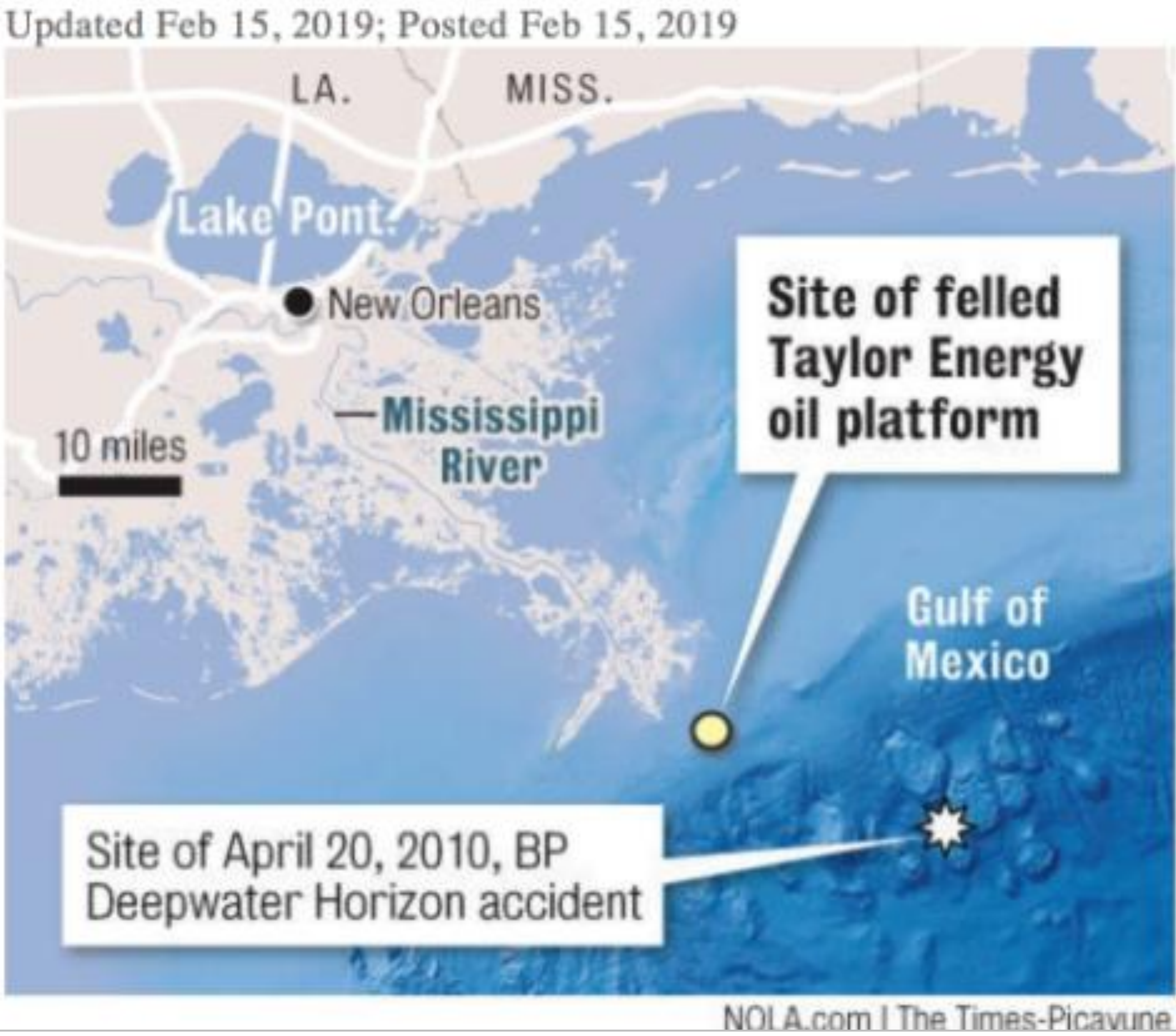


Figure 4 – Site location in relation to nearest land and Deepwater Horizon accident.

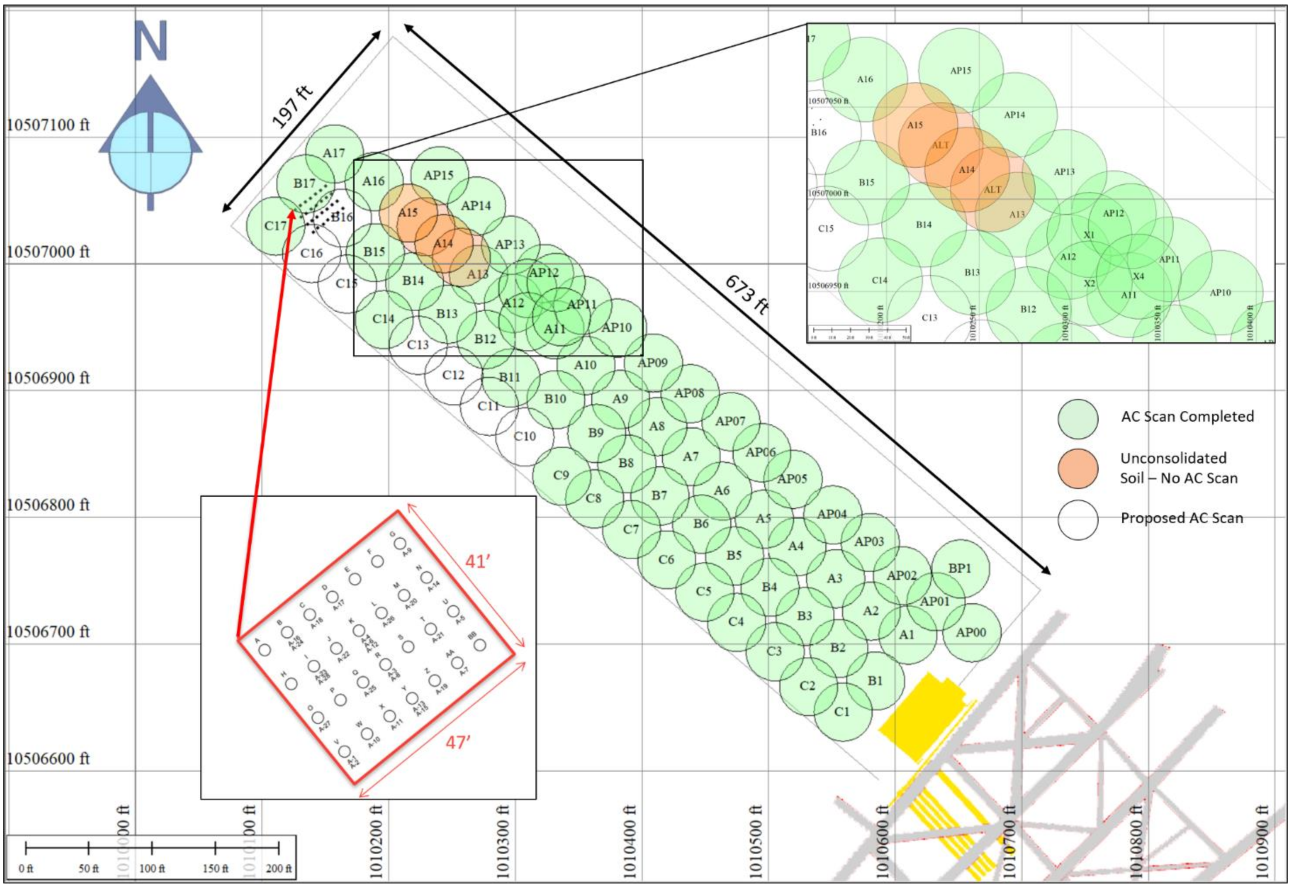


Figure 5 – MC-20 Site layout schematic

Table 7 – Project Site locations. Coordinates are in NAD27 UTM 16N, with units in usft (EPSG 32066). The sites are presented in the following survey-line order: AP, A, B, C, BP, and X, whereby sites in which JYG-cross data was acquired in addition to SAS are marked with an Asterix (*).

Site Name	Proposed Site Easting (usft)	Proposed Site Northing (usft)	As Landed Easting (usft)	As Landed Northing (usft)	Easting Difference (usft)	Northing Difference (usft)	Actual Distance (usft)
AP0	1010660.45	10506706.38	1010660.68	10506708.97	0.23	2.59	2.60
AP01	1010632.40	10506730.50	1010632.23	10506733.48	0.16	2.99	2.99
AP02	1010604.35	10506754.61	1010605.69	10506753.99	1.35	0.62	1.48
AP03	1010576.30	10506778.76	1010580.23	10506780.23	3.94	1.48	4.20
AP04	1010548.24	10506802.87	1010550.77	10506801.95	2.53	0.92	2.69
AP05	1010520.19	10506827.02	1010519.34	10506830.07	0.85	3.05	3.17
AP06	1010492.14	10506851.13	1010494.64	10506851.03	2.49	0.10	2.50
AP07	1010464.09	10506875.25	1010470.29	10506875.54	6.20	0.30	6.21
AP08	1010436.04	10506899.39	1010438.14	10506897.62	2.10	1.77	2.75
AP09	1010407.99	10506923.51	1010409.04	10506921.80	1.05	1.71	2.00
AP10	1010379.94	10506947.62	1010380.76	10506949.43	0.82	1.80	1.98
AP11	1010351.89	10506971.77	1010353.23	10506967.50	1.35	4.27	4.47

Site Name	Proposed Site Easting (usft)	Proposed Site Northing (usft)	As Landed Easting (usft)	As Landed Northing (usft)	Easting Difference (usft)	Northing Difference (usft)	Actual Distance (usft)
AP12*	1010323.84	10506995.88	1010322.98	10506992.47	0.85	3.41	3.52
AP13	1010295.78	10507020.03	1010296.38	10507014.85	0.59	5.18	5.22
AP14	1010267.73	10507044.14	1010269.41	10507045.72	1.67	1.57	2.30
AP15	1010239.68	10507068.26	1010240.27	10507069.70	0.59	1.44	1.56
A01	1010608.25	10506702.44	1010610.06	10506707.17	1.80	4.72	5.06
A02	1010580.20	10506726.56	1010581.18	10506726.03	0.98	0.52	1.12
A03	1010552.15	10506750.71	1010552.94	10506751.62	0.79	0.92	1.21
A04	1010524.10	10506774.82	1010522.52	10506776.82	1.57	2.00	2.55
A05	1010496.05	10506798.93	1010496.70	10506798.64	0.66	0.30	0.72
A06*	1010468.00	10506823.08	1010463.63	10506820.75	4.36	2.33	4.95
A07	1010439.94	10506847.19	1010438.93	10506847.88	1.02	0.69	1.23
A08	1010411.89	10506871.34	1010412.45	10506871.70	0.56	0.36	0.66
A09	1010383.84	10506895.46	1010383.19	10506893.09	0.66	2.36	2.45
A10	1010355.79	10506919.57	1010355.76	10506919.93	0.03	0.36	0.36
A11*	1010327.74	10506943.72	1010331.41	10506948.11	3.67	4.40	5.73
A12	1010299.69	10506967.83	1010298.38	10506968.88	1.31	1.05	1.68
A13	1010271.64	10506991.98	1010270.92	10506991.72	0.72	0.26	0.77
A14	1010243.59	10507016.09	N/A	N/A	N/A	N/A	N/A
A15	1010215.54	10507040.24	N/A	N/A	N/A	N/A	N/A
A16*	1010187.48	10507064.35	1010188.44	10507064.98	0.95	0.62	1.14
A17	1010159.43	10507088.47	1010157.20	10507086.93	2.23	1.54	2.71
B01	1010584.14	10506674.39	1010584.56	10506670.88	0.43	3.51	3.54
B02	1010556.09	10506698.51	1010555.43	10506696.60	0.66	1.90	2.01
B03	1010528.03	10506722.65	1010528.82	10506721.77	0.79	0.89	1.19
B04	1010499.98	10506746.77	1010501.10	10506744.90	1.12	1.87	2.18
B05	1010471.93	10506770.88	1010473.15	10506769.54	1.21	1.35	1.81
B06	1010443.88	10506795.03	1010447.16	10506794.64	3.28	0.39	3.30
B07	1010415.83	10506819.14	1010414.22	10506816.88	1.61	2.26	2.78
B08	1010387.78	10506843.29	1010388.04	10506842.24	0.26	1.05	1.08
B09	1010359.73	10506867.40	1010364.26	10506866.22	4.53	1.18	4.68
B10	1010331.68	10506891.52	1010332.00	10506892.86	0.33	1.35	1.38
B11	1010303.63	10506915.67	1010296.38	10506910.02	7.25	5.64	9.19

Site Name	Proposed Site Easting (usft)	Proposed Site Northing (usft)	As Landed Easting (usft)	As Landed Northing (usft)	Easting Difference (usft)	Northing Difference (usft)	Actual Distance (usft)
B12	1010275.57	10506939.78	1010276.82	10506940.40	1.25	0.62	1.39
B13	1010247.52	10506963.93	1010246.64	10506960.38	0.89	3.54	3.65
B14	1010219.47	10506988.04	1010220.36	10506986.20	0.89	1.84	2.04
B15	1010191.42	10507012.19	1010189.39	10507009.01	2.03	3.18	3.78
B16	1010163.37	10507036.30	N/A	N/A	N/A	N/A	N/A
B17	1010135.32	10507060.42	1010134.40	10507063.20	0.92	2.79	2.94
C01	1010559.99	10506646.34	1010558.84	10506646.34	1.15	0.00	1.15
C02	1010531.94	10506670.46	1010531.58	10506666.45	0.36	4.00	4.02
C03	1010503.89	10506701.17	1010505.13	10506693.95	1.25	7.22	7.32
C04*	1010475.84	10506718.72	1010474.79	10506717.14	1.05	1.57	1.89
C05	1010447.79	10506742.83	1010449.56	10506741.09	1.77	1.74	2.48
C06	1010419.73	10506766.98	1010419.54	10506766.52	0.20	0.46	0.50
C07	1010391.68	10506791.09	1010391.78	10506790.44	0.10	0.66	0.66
C08	1010363.63	10506815.24	1010362.55	10506814.55	1.08	0.69	1.28
C09*	1010335.58	10506839.35	1010336.73	10506832.60	1.15	6.76	6.86
C10	1010307.53	10506863.47	N/A	N/A	N/A	N/A	N/A
C11	1010279.48	10506887.61	N/A	N/A	N/A	N/A	N/A
C12	1010251.43	10506911.73	N/A	N/A	N/A	N/A	N/A
C13	1010223.38	10506935.88	N/A	N/A	N/A	N/A	N/A
C14*	1010195.33	10506959.99	1010196.44	10506956.12	1.12	3.87	4.03
C15	1010167.27	10506984.14	N/A	N/A	N/A	N/A	N/A
C16	1010139.22	10507008.25	N/A	N/A	N/A	N/A	N/A
BP01	1010656.51	10506758.55	1010651.75	10506759.33	4.76	0.79	4.82
C17	1010111.17	10507032.37	1010110.78	10507029.90	0.39	2.46	2.49
X01	1010311.80	10506981.87	1010309.73	10506980.72	2.07	1.15	2.36
X02	1010313.73	10506955.76	1010309.86	10506954.45	3.87	1.31	4.09
X03	1010337.84	10506983.84	1010332.14	10506985.48	5.71	1.64	5.94
X04	1010339.81	10506957.73	1010336.47	10506958.25	3.35	0.52	3.39

Note: N/A for Sites A14 and A15: scans were not conducted at these sites due to soil stability issues with the suction piles. N/A for Sites B16, C10, C11, C12, C13, C15, and C16: scans were not conducted at these sites based on an agreement with the client due to what was found in previous scans.

2 SURVEY EQUIPMENT

2.1 Vessel

PanGeo personnel and equipment were mobilized aboard the *MSV Ocean Evolution* (Figure 6). The vessel specifications are shown in Table 8.

Figure 6 – Oceaneering's *MSV Ocean Evolution*.

Table 8 – Vessel specifications.

General	Details
Name	MSV Ocean Evolution
Flag	USA
Port Registry	US FOC
Call Sign	WDJ5527
IMO Number	1273940
Classification	ABS, A1, OSV Unrestricted Service, Supply-HNLS, AMS, ACCU, E, DPS (2), Special Purpose Ship, Heavy Deck Cargo, BWT+, ENVIRO, HAB+(WB), GP (Green Passport), POT, HELIDK, MLCACCOM, CRC

General	Details
Vessel Type	Offshore Supply Vessel

Navigation and Dynamic Positioning	Details
DP System	Kongsberg^{SM} KPos DP-22 system
Type	Kongsberg^{SM} KPos DP-21 system
Reference 1	GPS 232
Reference 2	GPS123
Reference 3	GPS 3055
Reference 4	HiPAP 501
Primary Heading/motion/INS	Kongsberg MRU 5 and Gyrosphere 5000
Secondary Heading/motion/INS	Kongsberg MRU 5 and Gyrosphere 5000
Subsea Positioning	Kongsberg^{SM} HAIN INS, APOS 5.9.5.236, Sonandyne Ranger 2, HiPAP 501 acoustic positioning reference

Deck Equipment and Cranes	Details
Main Crane	275.5t with 13,000ft / 250MT with 4000m working capacity
Winch Capacity	N/A
Deck Crane	40MT with 200m working capacity.
Stern A Frame	N/A
Max Launching Dims Offshore Capacity	250 crane / 200MT 10m x 10m x 22m
Winch Capacity Tuggers	9 tons
Capstans	N/A
Deck Service Air Supply	125psi Two 750 cfm compressors and one 100gal tank.
Deck Power Supply	480V @ 200A Service 220V @ 150A Service 110V @ 100A Service

2.2 Acoustic Corer™ Subsea Equipment

The Acoustic Corer™ (standard deployment shown in Figure 7) 3-D sub-bottom imaging technology uses multi-aspect acoustic imaging to delineate sub-seabed stratigraphy and buried geohazards such as boulders, hard layers, shallow gas, and abandoned seabed infrastructure.

The Acoustic Corer™ unit consists of two sonar heads attached to each arm of a 40ft (12m) boom. A tight grid of acoustic data is acquired as the boom rotates 180°, thereby creating a 360° acoustic core.

Figure 7 – Acoustic Corer™ deployed with the standard configuration.

The AC was modified to deploy on a suction pile to allow for survey over a soft, low load bearing sediment (Figure 8). The AC equipment spread is comprised of subsea and topside equipment, as described in the following sections.

The AC is a highly integrated semi-autonomous electromechanical machine comprised of the following main components and assemblies:

- 1 x Upper weldment and central hub assembly with integrated electric servomotor
- 1 x Folding tripod leg assembly (attached below central hub assembly)
- 2 x 6m long folding boom (attached above central hub assembly)
- 2 x Acoustics Carriage (installed on each boom)
- 2 x Electric servomotor (installed on each boom to move acoustics carriages)
- 5 x AC subsea electronics bottle (chirp TX / RX, power, sensors, motor control)
- 2 x High Frequency Chirp Projector (installed on each acoustics carriage)
- 2 x Low Frequency Chirp Projector (installed on each acoustics carriage)
- 5 x Hydraulic cylinders, HPU, and associated distribution equipment and hoses
- 1 x Optical gyro (installed on upper weldment)
- 1 x Depth Sensor (installed on upper weldment)
- 1 x Velocimeter (installed on upper weldment)
- 3 x Altimeter (installed on upper weldment and each acoustics carriage)
- 2 x Tilt Sensor (installed on each acoustics carriage)
- 2 x Pan/Tilt Colour Camera
- 2 x Underwater lights
- Associated subsea interconnect cabling

2.3 AC Configuration – MC-20 Survey

Figure 8 and Figure 9 show the Acoustic Corer™ equipped with a stabbing guide used to connect the equipment to the suction piles installed at each site location.

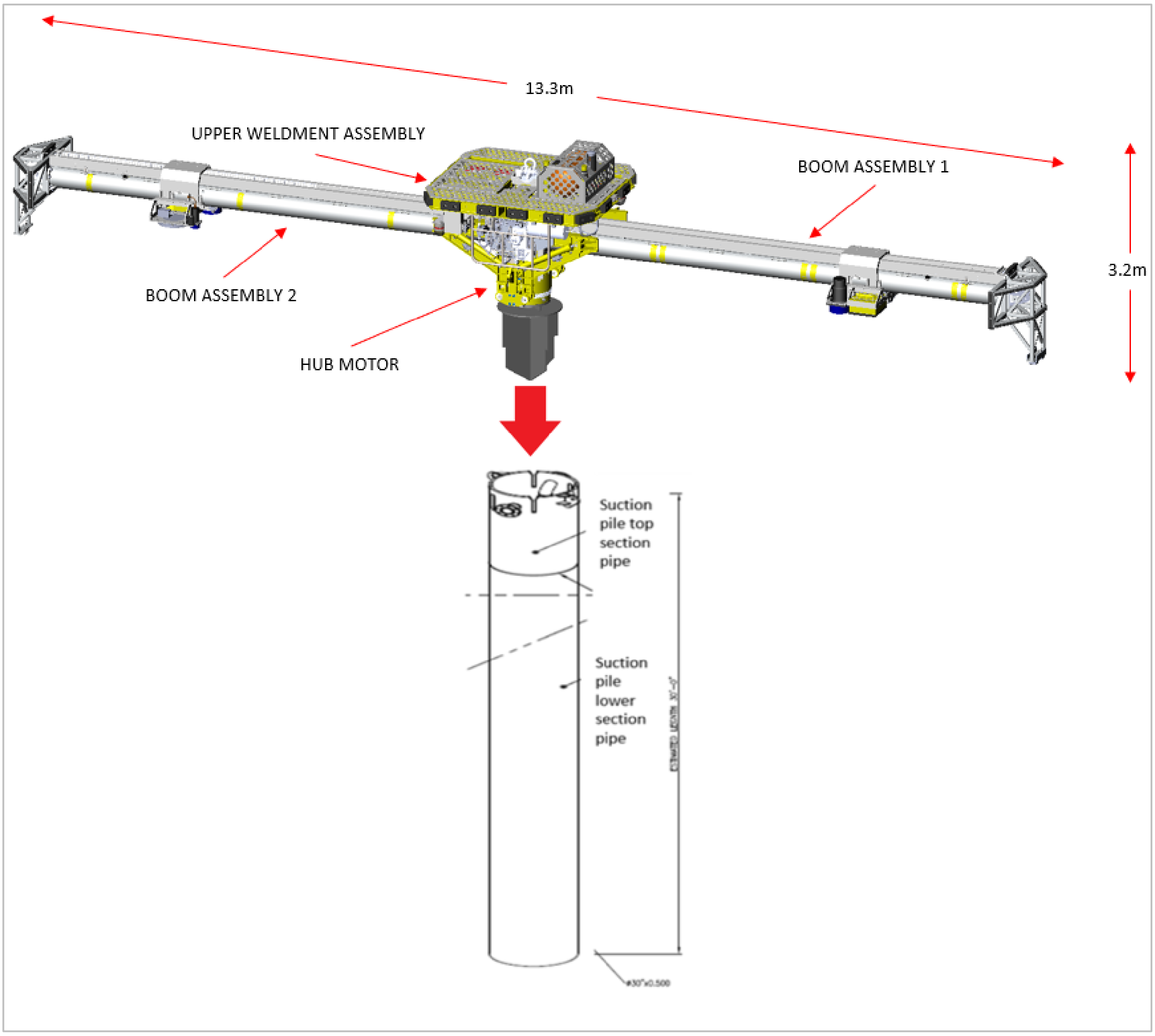


Figure 8 – AC in unfolded survey configuration with attached stab guide. Dimensions (L/H) are 43.6ft/10.5ft (13.3m/3.2m). Dimensions are of AC only, not including pile length.

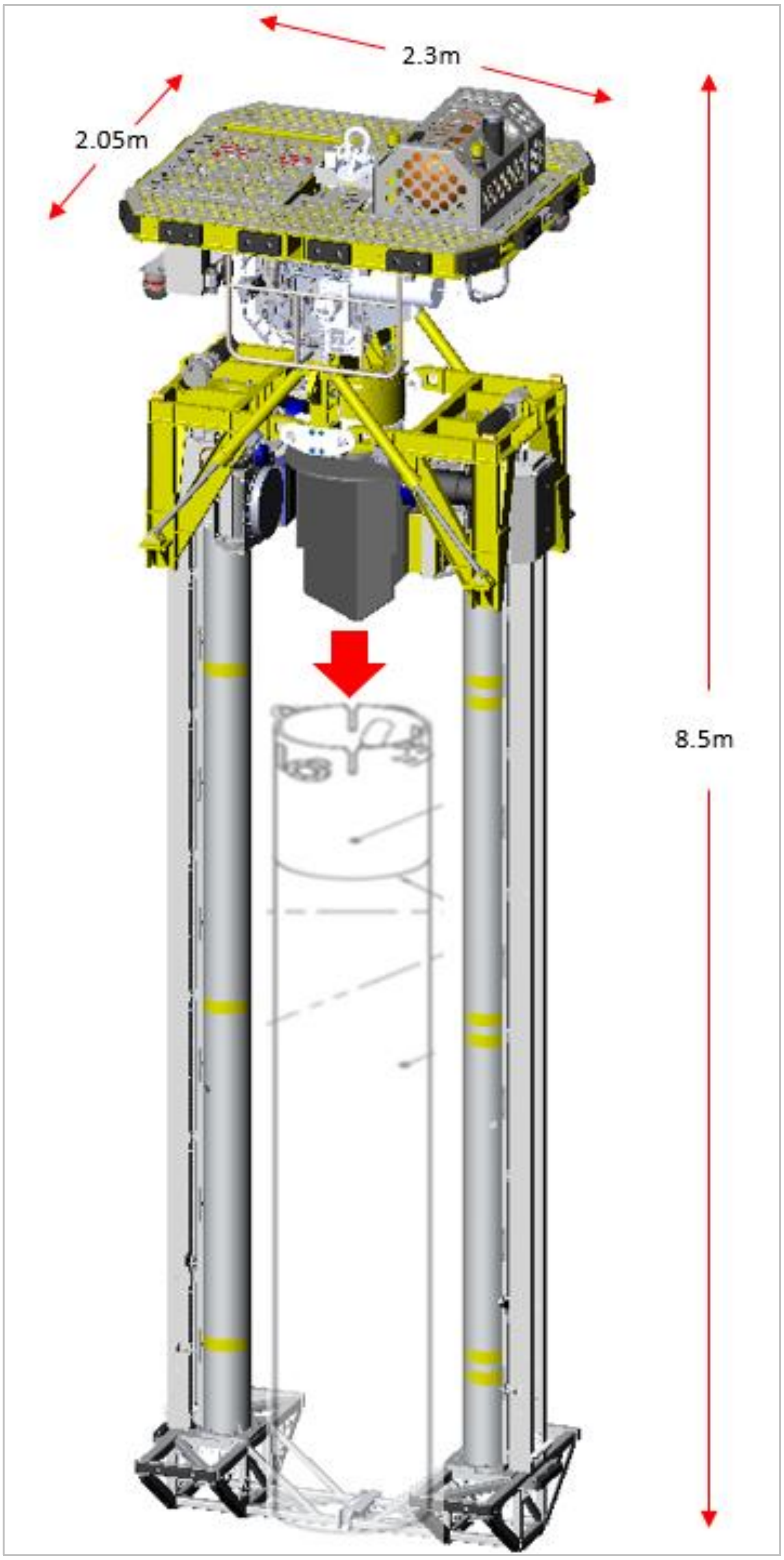


Figure 9 – AC in folded position with attached stab guide. Dimensions (H/L/W) are 27.9ft/7.5ft/6.7ft (8.5m/2.3m/2.05m). Dimensions are of AC only, not including pile length.

2.3.1 AC Control Van and Spares

The AC topside survey equipment is self-contained in the 20ft (6.1m) ISO container known as the AC Control Van. High-powered processing computers in a 19in (0.5m) rack form factor is used for data acquisition, viewing, and processing. Additional PCs are used for post-processing, visualization tools, and report generation.

2.3.2 AC Umbilical Winch

The AC umbilical winch, shown in Figure 10, has 1970ft (600m) of non-load-bearing fibre and copper umbilical on its drum. The umbilical winch has a 5.2ft x 4.6ft (1.6m x 1.4m) footprint, weighs 5512lb (2500kg), and is normally operated from a wired remote control. The winch has speed control and an automatic level-wind system.

An over-boarding sheave and mount is used to manage the AC umbilical as it leaves the vessel.

Figure 10 – AC umbilical winch.

2.3.3 AC System Power Requirements

The Acoustic Corer system runs off a single 440V 3-phase 63A power supply. The AC winch and control van are all powered from the single supply power distribution, and protection equipment – circuit breakers and GFI units – are housed in the control van.

2.3.4 AC Lifting Equipment

All lifting equipment will be certified. The control and spares vans have dedicated 4-point bridles as does the umbilical winch. The AC itself has a dedicated 3-point bridle for lifting the unit horizontally and the main lift point, located on top of the AC, for vertical lifts during operations.

2.4 AC Auxiliary Sensors – Depth Measurement

The AC measures the mudline *z* coordinate using a combination of two instruments – a depth sensor and an altimeter. These are aligned on the frame of the AC to have co-incident sensor *z*-axis measurement offset positions.

The depth sensor is a Valeport iPS unit with a 3281ft (1000m) range and accuracy of +/-0.01% of F.S. (+/-0.1m).

The altimeter is a Tritech PA200 unit with a resolution of +/-5mm.

3 BACKGROUND MATERIAL

3.1 Surficial Geology and Geotechnical Data

Since the AC is a bottom located survey instrument, knowledge of the seafloor soil properties is critically important. PanGeo obtained information from the Client and carried out background research of their own. The geotechnical investigation carried out at the MC-20 area by Fugro in June 2007 was found to be the most useful information, some of which is reproduced here.

The following information on the soil conditions at the MC-20 site was provided by Mr. Ed Clukey, President, GeoMax, via e-mail communication dated July 20, 2019. The e-mail read as follows. (Note that the conversion of units to the metric system, shown in brackets, were inserted by PanGeo).

“The soil at the MC-20 site is a clay. The top 60ft to 70ft (18.29m to 21.34m) appears to be mass flow deposits from upslope. As a result, this material is highly variable, with undrained shear strengths near zero near the mudline, increasing from 250psf to 550psf (12.0kPa to 26.3kPa) at about 60ft to 75ft (18.29m to 22.86m) below the mudline. However harder material could be encountered at shallower depths depending on if blocky more intact material exist within the mass transport deposits. Below about 75ft (22.86m) the soil is less variable but is under-consolidated (has not fully consolidated under its own weight). The undrained shear strengths for this material are about 250psf to 300psf (12.0kPa to 14.4kPa) at about 80ft (24.38m) depth increasing from 600psf to 700psf (28.7kPa to 33.5kPa) at 200ft (61m) depth. These under consolidated soils have shear strengths about 3 times lower than those typically encountered in other regions of the Gulf of Mexico. Submerged unit weights are about 20pcf at the mudline, increasing to about 35pcf at 80ft (24.4m) depth and 46pcf at 200ft (61m) depth”.

The site investigation consisted of drilling, sampling, side-scan sonar (Figure 12), and occasionally performing in situ piezo probe and remote vane shear tests (Figure 11) at ten (10) soil boring locations to a penetration depth that ranged from 132ft to 712ft (40.2m to 217.0m) BML. In addition, in situ seabed Halibut vane tests were performed in the area simultaneously to drilling operations. The latter measurements yield “Shear Strength” data for the uppermost seabed (i.e., 2ft to 24ft (0.61m to 7.3m) below mudline). The remote vane (Figure 11) did not record shear strength values above 50ft (15.2m) below mudline. At this depth, the remote vane recorded shear strengths of between 292psf to 501psf (14kPa and 24kPa).

Table 9 – Undrained shear strength scale for cohesive soils (after Fugro).

Term	Undrained shear strength	
	[kPa]	[ksf] (2)
Very soft	Less than 12.5	Less than 0.25
Soft	12.5 to 25	0.25 to 0.50
Firm	25 to 50	0.50 to 1.0
Stiff	50 to 100	1.0 to 2.0
Very stiff	100 to 200	2.0 to 4.0
Hard	200 to 400	4.0 to 8.0
Very hard (3)	Greater than 400	Greater than 8.0

From the data provided we can see that the uppermost seabed (24ft (7.3m) below mudline) is described as very soft (Table 9) with values of undrained shear strength <209psf (<10 kPa). The results of a recent 1/3rd scale model test indicated that the AC would not be stable if deployed on tripod legs equipped with a 226ft^2 (21m^2) mud mat. It was therefore decided to carry out the AC survey by deploying the AC on a suction pile, which is considered to offer a stable foundation from which to carry out the survey. The suction pile should be installed as such to remove risk of settlement and toppling, and it should be installed at 0-degree inclination.

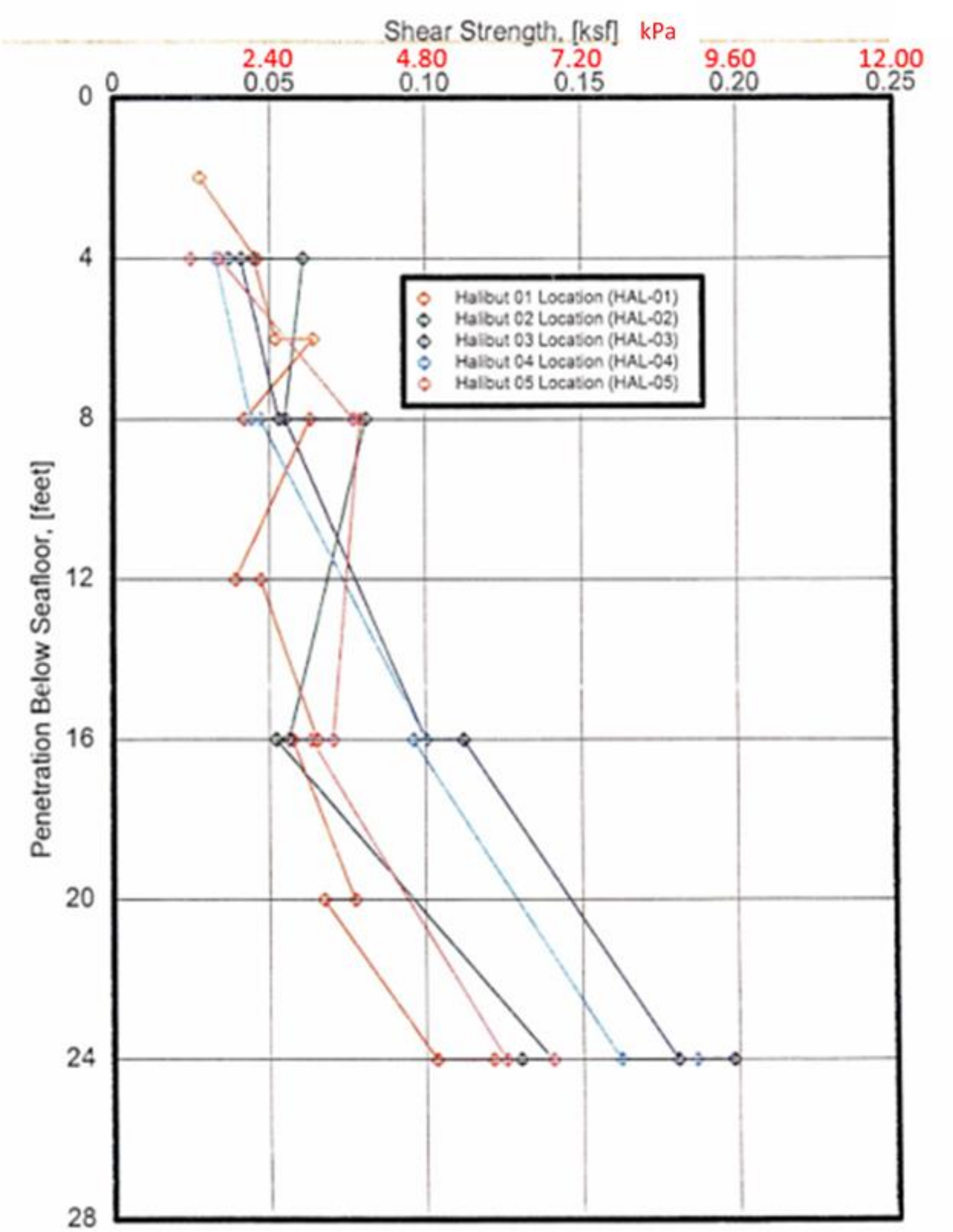


Figure 11 – Halibut vane test results at MC-20.

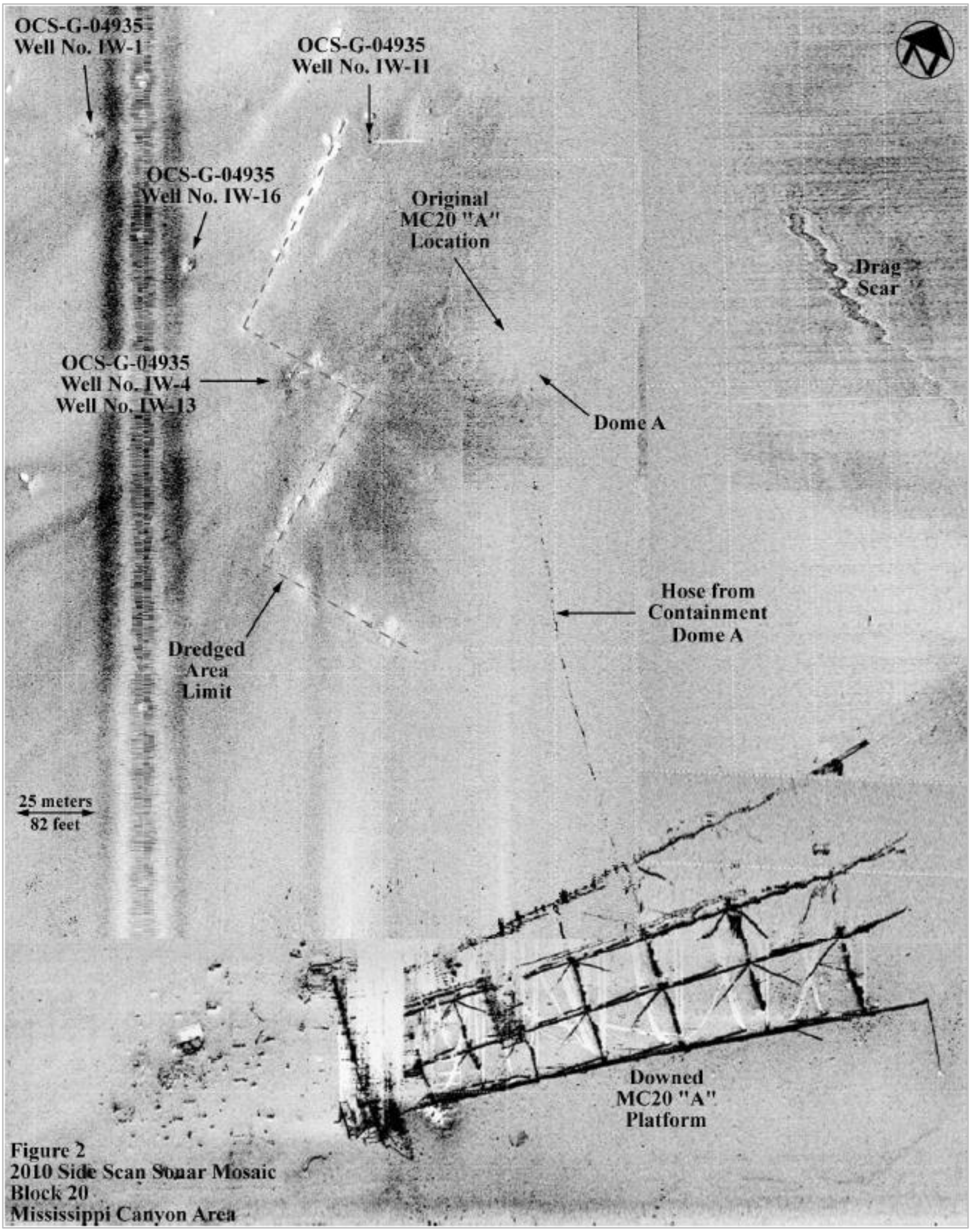


Figure 12 – 2010 side scan mosaic of the MC-20 Area.

3.2 Conductor Wellbore Schematic and Tree

Figure 13 and Figure 14 show the wellbore and tree configurations, which were provided by Couvillion in July 2022.

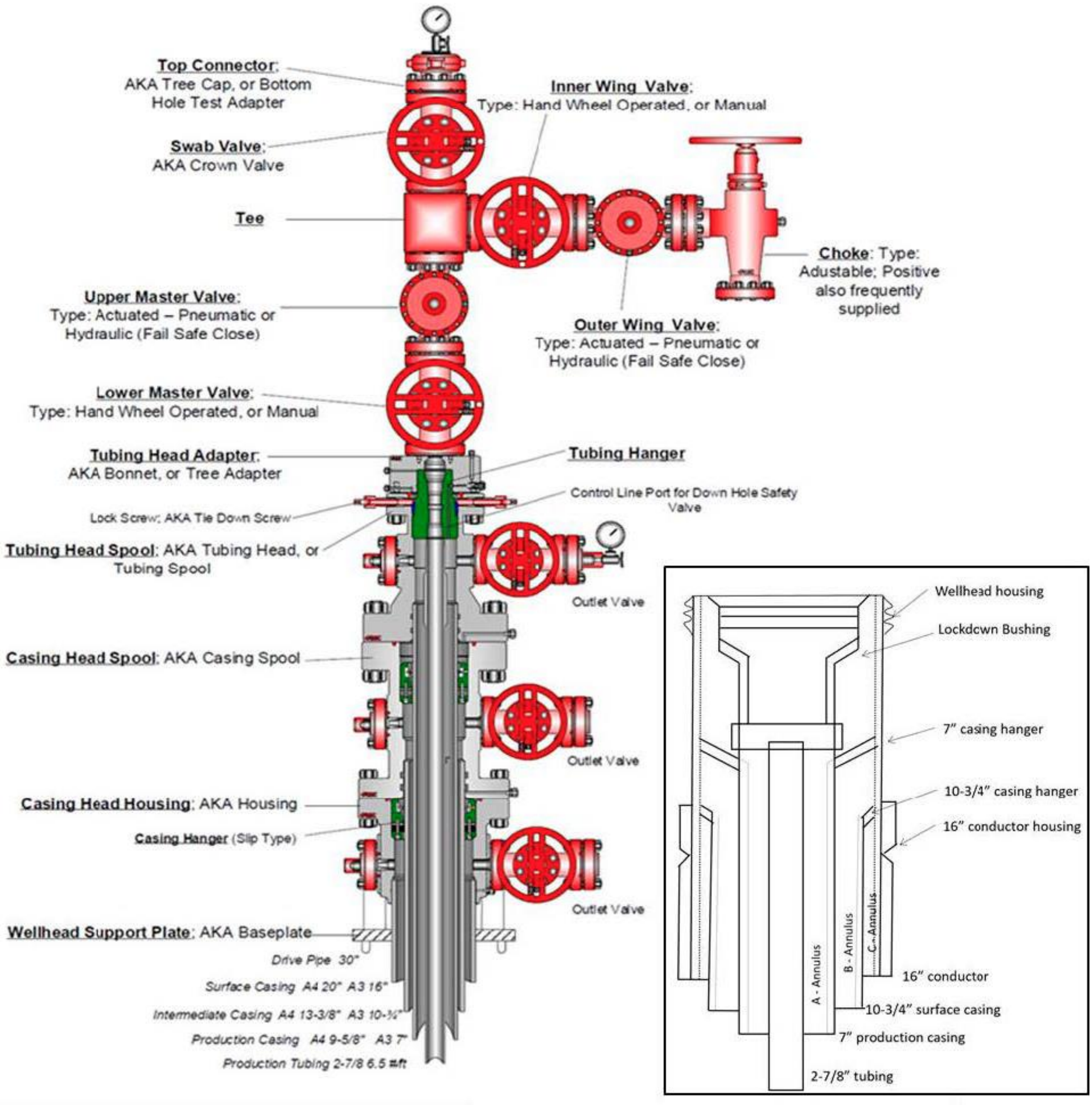


Figure 13 – Tree schematic.

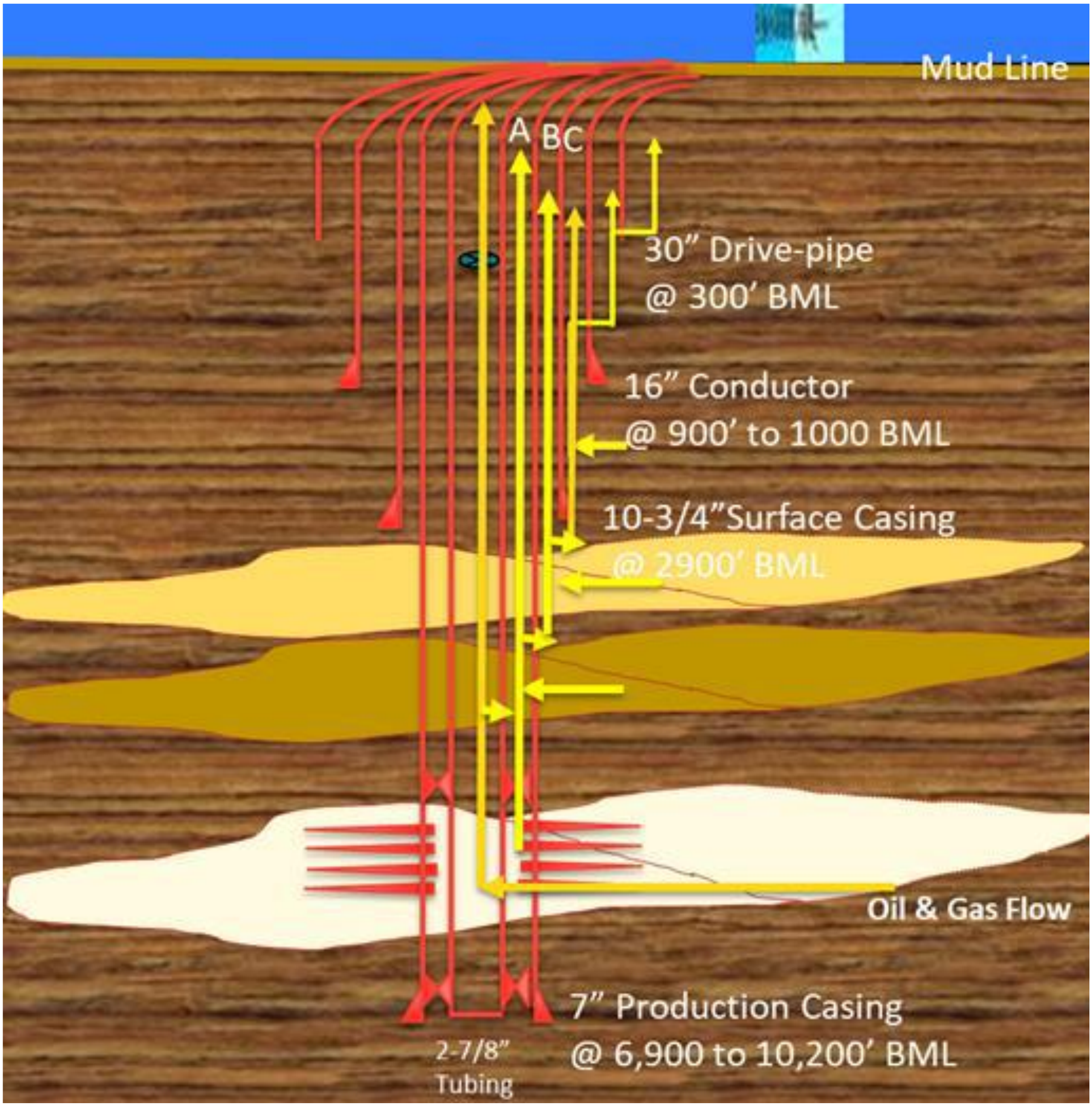


Figure 14 – Wellbore schematic.

4 SURVEY METHODOLOGIES

4.1 Acoustic Corer™ Survey Methodology

A 52ft (15.8m) long suction pile was installed at each location to a depth of ~42ft (12.8m) using the vessel's crane. Before the pile was landed, positioning fixes were taken via the beacon located on the crane block. Once the pile was landed, the ROV mounted suction pump suctioned the pile to depth. Each suction pile was equipped with a "bullseye" level bubble to approximate pitch/roll and line markings to indicate the depth of penetration. The ROV was then positioned above the pile location and multiple positioning fixes were taken to record accurate positional data. This process was conducted in intervals of five, as this was the quantity of suction piles fabricated for this campaign. Once all five piles were installed, the AC was deployed onto the pile via the AC attached stab guide which keyed into the pile.

After the AC was landed on the suction pile, a series of stability tests were conducted. Immediately after landing and transferring the weight of the AC to the pile, the AC's depth, altitude, pitch, and roll was recorded. Having determined that the system was stable in static mode, the AC was rotated, and acoustic payloads moved out the booms to their home positions. This was conducted while monitoring pitch, roll, and altitude via the onboard sensors located on the main frame and acoustic payloads. Once satisfied that the AC was stable the ROV moved into the AC to disconnect the crane hook. The ROV would monitor touchdown of the AC umbilical to the seafloor and as the vessel stood off 690ft (210m) from the AC. A clump weight was laid on the AC umbilical at approximately 330ft (100m) from the AC to help secure the umbilical on the seabed.

Acoustic Corer™ (AC) survey operations were completed at each target location according to the following general steps:

1. Move vessel to target location and prepare for equipment launch
2. Conduct ROV launch toolbox talk
3. Deploy ROV to 100ft (30m)
4. Confirm target landing area is clear for AC landing using ROV cameras
5. Conduct suction pile deployment toolbox talk.
6. Oceaneering deploy suction piles.
7. Oceaneering set suction piles at required survey site locations.
8. Oceaneering Survey provide pile landed positions to PanGeo.
9. If AC already deployed go to (12) otherwise go to (10)
10. Conduct AC launch toolbox talk.
11. AC launched with booms folded and acoustic packages in parked configuration in the site safe over boarding zone.
12. Lower AC to a height of approximately 100ft (30m) off bottom.
13. Vessel to move into position putting the AC above the suction pile.
14. Activate extend mode via AC software until booms are fully deployed. Maximum pressure will be reached (~2400 – 2600psi) when the booms are fully deployed. ROV can confirm with cameras.
15. Set AC on suction pile.
16. With slack crane wire connected, PanGeo monitor AC altimeters and tilt sensors to determine if the AC settlement and tilt is within accepted tolerance. Anticipate static load, short term (elastic) settlement and monitor accordingly. Crane operator will be on stand-by to recover AC if there is evidence of settlement and tilt exceeding accepted tolerance to lift pile/AC from seabed and go to (30). If AC is stable, that is no evidence of settlement or tilt, then proceed to (17).

17. Crane wire still attached and slack, PanGeo to carry out several cycles of rotating the AC booms back-and-forth through 180 degrees and moving the acoustic packages along the booms. Monitor settlement and tilt during this process. Crane operator will be on stand-by to recover AC if there is evidence of settlement and tilt exceeding accepted tolerance to lift pile/AC off seabed and go to (31) otherwise proceed to (18).
18. If and only if, having completed these test manoeuvres, the altimeters and tilt sensors indicate that the AC is in a fully stable condition the PanGeo OM will pronounce the AC stable on the seabed and give the go ahead for the crane hook to be disconnected from AC using ROV.
19. Recover ROV hook to vessel.
20. Position AC umbilical using ROV prior to vessel standoff. Install clump weights on umbilical as required.
21. While the AC monitors noise levels, the vessel will be moved to a suitable standoff position (in this case 690ft (210m) lateral distance from the AC); pay-out AC umbilical (monitor touchdown using ROV). Commence soft-start routine.
22. Vessel at standoff position.
23. Recover ROV to deck.
24. Commence AC data acquisition.
25. AC Survey complete.
26. Conduct ROV launch toolbox talk. Deploy ROV to seabed.
27. Move vessel to AC landed position; rewind AC umbilical (monitor umbilical recovery using ROV), recover the clump weight.
28. Deploy ROV hook to AC connection point using ROV to guide.
29. Connect ROV hook to AC using ROV.
30. If next pile is set ready to receive the AC then retrieve AC from pile, move, set on next pile and go to 12 otherwise go to 31.
31. Conduct AC recovery toolbox talk and recover AC to vessel.
32. Retrieve suction piles.
33. If AC survey complete, then end. Go to 35 otherwise 34.
34. Move vessel to next site and go to 7.
35. Conduct suction pile recovery toolbox talk.
36. Recover suction piles to deck.
37. Conduct ROV recovery toolbox talk. Recover ROV to deck.
38. Transit to demob port.

4.2 Survey Data Acquisition Settings

For Sites C04, A06, C09, A11, C14, A16 and AP12, the AC data acquisition comprised of both JYG-Cross scans and HF, LF and Innomar/Parametric acoustic core (SAS) scans.

For Sites B09, B08, B10, A03, A04, A05, A09, A10, A12, A07, A08, A17, B17, C17, C08, C07, B07, B06, B05, C06, C05, B04, B03, C03, AP10, AP09, AP08, AP06, AP07, C02, B02, A02, C01, B01, A01, AP01, AP02, AP03, AP04, AP05, AP11, B12, B11, AP13, AP14, B14, A13, X01, X02, X03, X04, BP01, B13, AP0, B15 and AP15, the AC data acquisition comprised just the HF, LF and Innomar/Parametric acoustic core (SAS) scans.

The JYG-Cross data from Sites C04, A06, C09, A11, C14, A16 was used to make the extended velocity model for the remaining fifty-six (56) SAS-only sites, as well as Site AP12, where JYG-cross data was collected for the purpose of locating incidences of gas.

4.2.1 JYG-Cross Data Acquisition

Two approximately orthogonal lines of high resolution, multifold data were acquired using the LF chirp at an interval spacing of 4 inches (10cm) at six (6) Sites: C04, A06, C09, A11, C14, and A16. A total of 2600 data traces were acquired on each line. The acquisition parameters are outlined in the following Table 10. These data sets were interpreted to provide a velocity profile at each of the six (6) Sites.

After completion of the extended velocity model for the entire survey area, JYG-cross data was acquired at a seventh Site, AP12, in an effort to locate incidences of gas. This site was used as a standalone velocity analysis.

Table 10 – JYG-Cross acquisition parameters.

Setting	Value
Number of Lines	2
Grid Spacing Sampling Rate	50kHz
Target Depth	50m
Samples Per Trace	5450
Ambient Noise Recording	ON

The JYG-Cross data acquisition plan was carried out as outlined below:

1. A JYG-Cross survey was carried out at Sites C04, A06, C09, A11, C14, A16 using the LF chirp and parameters provided in Table 10 – JYG-Cross acquisition parameters.
2. Two lines of data were acquired. Each line took approximately 2 hours to acquire, for a total of 4 hours.
3. During JYG-Cross data acquisition, Ops monitored for any signs of AC settlement and tilt and were prepared to authorize a halt to data acquisition and call for the recovery of the AC should settlement and tilt exceed accepted tolerance. AC recovery was not necessary.
4. JYG-Cross data QA/QC was carried out onboard.
5. JYG-Cross data was processed onshore using ZoomSpace™ software.
6. The data processing flow used onshore is described in Section 6.1; Figure 20.
7. On completion of the JYG-Cross data acquisition and data QA/QC, Ops returned the booms to the start position and initiated the acquisition of the acoustic core (SAS) data.

4.2.1.1 Extended P-model Generation

Velocity models, or p-models, are 3-D volumes that are generated at each site to provide the co-ordinates of the imaging points that will be imaged. Typically, the X-Y-Z grid is used with interval spacing of 5cm by 5cm for the X-Y plane and 0.02ms for the Z-interval. Velocity analysis (See Section 6.2) was completed at each JYG-Cross sites to create a velocity profile, with the end goal of generating extended p-models for each of the survey sites beyond those where JYG-Cross data was acquired. Software created by PanGeo, was required for the generation of extended p-models which involved a gridded interpolate over 3-D space using the velocity profiles that were created at each JYG-Cross site.

Figure 15 shows the proposed landed AC positions for the MC-20 campaign. The black rectangle represents the extent of the p-model regional 820ft x 410ft (250m x 125m) grid, which was used as an input for each extended p-model. In addition, eight interpolated Vrms profiles (Figure 15; green circles) were generated using the six JYG-Cross velocity profiles (Figure 15; blue circles), for a total of 14 Vrms profiles as an additional input into the p-model builder. The additional eight interpolated Vrms profiles (Figure 15; green circles) were needed to aid in the gridded interpolation method due to the addition of Lines AP, 01, and 02. Utilizing these inputs, along with the AC landed positions for each site, allowed for the generation of an extended p-model at each of the sixty-three (63) MC-20 scan locations. A Vrms profile was generated from each extended p-model and used for the post-processing depth conversion.

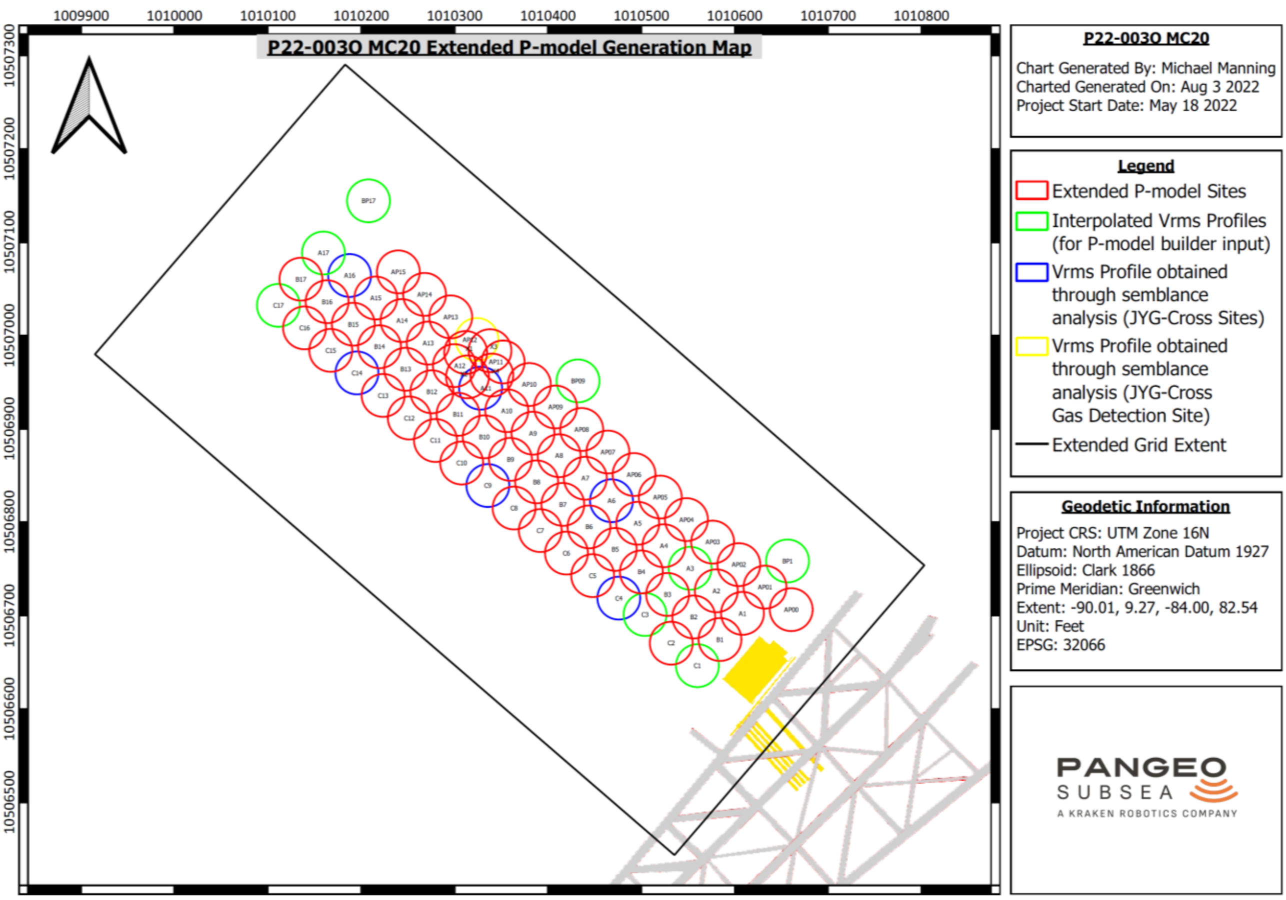


Figure 15 – P-model builder methodology using 14 velocity profiles (blue and green circles) as inputs based on the six JYG-Cross profiles (blue sites).

4.2.2 Acoustic Core (SAS) Data Acquisition

The Acoustic Corer is designed to deliver a 40ft (12m) diameter data volume down to penetration depth. HF, LF and Innomar/Parametric acoustic core data sets were acquired at the sixty-three (63) survey sites. The acoustic core scanning process involved the acoustic packages moving over a pre-programmed sampling grid using the acquisition parameters listed in Table 11 – HF chirp SAS acquisition parameters., Table 12 – LF chirp SAS acquisition parameters and Table 13 – Innomar/Parametric SAS acquisition parameters. A full 360-degree coverage is achieved, equating to an average approximation of 40,000 data traces for the combined HF, LF and Innomar/Parametric acoustic cores.

HF, LF and Innomar/Parametric acoustic (SAS) core data were typically acquired to a depth of 200ft (50m) below mudline using the following acquisition parameters:

1) For each payload grid position, the data collection script will execute the following:
   i. Payload moves into place.
   ii. Collect HF, LF chirp and Innomar/Parametric data (as per Table 11 and Table 12)
   iii. Collect ambient noise (samples/trace = 1000)

Table 11 – HF chirp SAS acquisition parameters.

Setting	Value
Sampling Rate	50kHz
Samples Per Trace	5450
Target Depth	165ft (50m)
Pulse Frequency Range	4.5 – 12.5kHz
Pulse Segment (Chirp) Duration	15ms
Pulse Taper Type (Waveform)	Rectangular
Pulse Type	Linear
Match Filter Type	Hann
Ambient Noise Recording	ON

Table 12 – LF chirp SAS acquisition parameters.

Setting	Value
Sampling Rate	50kHz
Samples Per Trace	5450
Target Depth	165ft (50m)
Pulse Frequency Range	1.5 – 6.5kHz
Pulse Segment (Chirp) Duration	15ms
Pulse Taper Type (Waveform)	Rectangular
Pulse Type	Linear
Match Filter Type	Hann
Ambient Noise Recording	ON

Table 13 – Innomar/Parametric SAS acquisition parameters.

Setting	Value
Frequency	8kHz

2) The first acoustic core data was acquired at Site B09, which involved acquiring data with both HF and LF chirps and the Innomar/Parametric acoustics.
3) The procedure involved acquiring approximately 40,000 data traces within a 40ft (12m) diameter area using the acquisition parameters listed in Table 11 – HF chirp SAS acquisition parameters., Table 12 – LF chirp SAS acquisition parameters and Table 13 – Innomar/Parametric SAS acquisition parameters.
4) Acoustic Corer performance statistics from MC20:
    - Average scan time (JYG + SAS) = 14.42 hours
    - Average scan time (SAS only) = 10.62 hours
    - Average move time = 3.31 hours
    - Total time submerged = 952.3 hours
    - Total scanning time = 693.98 hours
    - Total dives = 14
5) Data acquisition must take place in a continuous fashion. That is, the AC subsea unit cannot be moved during a scan otherwise the scan should be re-started from the beginning. The scan can be interrupted and re-started if the AC is not moved.
6) On completion of the HF, LF and Innomar/Parametric acoustic core data acquisition and data QA/QC, Ops notified the vessel that AC recovery procedure could be initiated.
7) The AC was moved to the next Site to be surveyed.
8) HF, LF and Innomar/Parametric acoustic core data processing was shared between offshore and onshore teams, using ZoomSpace™ software.
9) The data processing flow carried out offshore and onshore, is described in Section 6.1; Figure 21.
10) A Preliminary Site Report (See Volume II of this report) was produced for the interpreted site and provided to the Client.
11) The above steps 1 – 9 were repeated for the subsequent survey sites.
12) All data was backed up at the St. John's office after demobilization by the Data Manager.

4.3 PanGeo Subsea Project Team

PanGeo worked on a 24/7 basis both offshore and onshore for the duration of the project. The project team was as follows:

4.3.1 Project Management

- Project Manager/Client Interface – Prash Poosappadi
- Senior Geophysicist/Interpreter – Dr. Jacques Y. Guigné

4.3.2 PanGeo Operations

- Offshore Supervisor – Adam Young/Chris Hicks
- Geoscientist 1 – Joey Pittman
- Geoscientist 2 – Mark Winsor/Tom McGarry

- Geoscientist 3 – Chris Williams/Jessica Martin
- Geoscientist 4 – Kolby Pedrie/Zach Anderson
- Technician 1 – Jeffrey Au/Richard Butler
- Technician 2 – Joel Soper

4.4 PanGeo Data Processing Onshore

- Chief Scientist – Dr. Jacques Yves Guigné
- Lead Geophysicist – Ryan Laidley
- Geoscientists Team 1 – Stephanie Abbott and Michael Manning
- Geoscientists Team 2 – Dr. Maria Kotsi and Cevdet A. Kilic
- Data Manager – Michael Manning
- IT Manager – Ken Smith

4.5 Geodetic System and Datums

The project data is delivered in UTM coordinate system Zone 16N referenced to project datum, North American Datum (NAD) 1927, units in feet (EPSG: 32066). Sub-seabed stratigraphy and anomaly depths are provided relative to mudline (see definition below) with units in feet. All times will be referenced to UTC.

5 SAFETY

During the campaign, safety was of paramount importance to the crew due to the unusual setting of working in an area where UXOs were present. Oceaneering and Couvillion gave all PGSS crew a vessel induction immediately after boarding to ensure all parties were on the same page.

Before the start of each of the survey deployments, moves or recoveries, a toolbox talk was held between all parties and personnel involved in the operation.

Oceaneering also provided permits for work for general back deck work, working at heights, hot work and for crane OPS during mobilization. Oceaneering and Couvillion were extremely cooperative to work with and aided, input and guidance throughout the campaign to ensure a safe and efficient operation.

PanGeo's Hazard Identification and Risk Assessment (HIRA) and Health, Safety and Environment (HSE) plans were followed throughout the duration of the offshore campaign.

6 RESULTS AND INTERPRETATION OF ACOUSTIC CORER DATA

6.1 Data Acquisition and Processing Overview

As earlier stated, (Section 2.2), the Acoustic Corer™ consists of two sonar heads attached to each arm of a 40ft (12m) boom held and rotating off a suction pile implanted at a pre-determined site location. This boom turns 180°, creating a 360° acoustic core product 40ft (12m) in diameter up to a depth of 200ft (61m). The sonar heads contain three collocated acoustic sensors: an HF chirp (operating across 4.5kHz to 12.5 kHz (Table 11), an LF chirp (operating at 1.5kHz to 6.5kHz (Table 12)), and a Parametric Source (using a secondary frequency of 8kHz (Table 13)). The Parametric Source had a narrower acoustic propagation pattern generated differently from the HF chirp. This provided more detailed, crisper imagery of the features, thus helping to interpret them. Together with the HF chirp, collocated confidence was derived, and critical imagery elements were confirmed for the target picking. The Innomar/Parametric acquired data was instrumental in studying and confirming the sedimentary features in the upper sub-seabed associated with the chaotic scattered presence of mud-slide-related clay deposits.

The Acoustic Corer™ captures an extensive synthetic aperture volumetric data acquisition involving data captured over a fine (Cartesian and annulus-shaped) grid, resulting in the acquisition of over 40,000 acoustic traces, each coherently positioned within the volume in inches level of accuracies. In the MC-20 survey, the resulting data was processed to create a volumetric image of the sub-seabed and the features detected, revealing linear targets at depth with very high positional accuracies and character definitions. In addition, the resulting images exhibit acoustic characteristics that support the identification of sub-seabed linear features consistent with manufactured pipe objects stretching over a solid basement appearing from 136 ft by the container dome to 165ft approaching the Row 11.

Detailed processing flows for JYG-Cross and Acoustic (SAS) Core data, using ZoomSpace™, are shown in Figure 20 and Figure 21, respectively. AC data comprises specular (stratigraphy) and non-specular (diffractors e.g., pipes) returns. AC SAS acquisition is biased towards non-specular imaging. Further enhancement of results was achieved using ZoomSpace™ specular/non-specular filters which were used to enhance and isolate the acoustic responses. Volumetric SAS data, consisting of HF, and LF chirp and Innomar/Parametric sonar data sets, was incorporated to identify the buried linear features and anomalies suggestive of buried geohazards, particularly debris and infrastructure from the downed platform. The HF chirp is optimized for high resolution imaging of anomalies in the uppermost seabed and the LF chirp is optimized for resolving anomalies from the seafloor to maximum penetration depth. Increased confidence in the data interpretation is achieved when correlation is observed between the HF, Innomar/Parametric and LF data sets for a given anomaly or feature. The resulting data cubes were analysed using 3-D imaging software, OpendTect. Data processing, interpretation and reporting was carried out from the PanGeo (Canada) office as well as offshore.

To bring all individual Acoustic Corer™ cubes together into one regional cube, they must first be corrected for topography. Topographic static corrections are performed by defining a flat datum and shifting the traces toward that datum by an amount, Δt, or an equivalent number of samples. This is executed as a two-phase process and is performed on all HF, LF, and Innomar datasets. During the first phase, each cube is corrected for pitch. The pitch, or in other words, the angle in which the AC is landed, is measured during acquisition. Each trace of the cube is then shifted to a flat datum defined by the TOGS reading based on the amount, Δt, derived from that angle. This process is performed individually on all 63 HF, LF, and Innomar Acoustic Corer™ datasets.

During the second phase of the topographic static corrections, all 63 cubes are aligned based on a processing datum. For the MC-20 survey area, the shallowest site, A06 was used as the processing Site and therefore, all other sites were shifted relative to that. Hence, Site A06 will have no elevation statics. Site A06 was chosen due to its elevation and all Sites would be below it. The processing datum was taken to be the top of A06 or time zero. Therefore, all data sets would be shifted down since all Sites have elevations below the processing datum. The processing datum chosen is an arbitrary datum and can be a horizontal or floating datum within the survey area. For simplicity, it was chosen to be A06. This process begins by extracting Row 06 (Figure 16) and manually calculating the bulk shift by taking a section across the row and determining the onset of the seabed for all cubes with respect to A06 and calculating the number of samples to shift by. This process is then repeated on Line A, followed by remaining Lines AP, B, and C, as shown in Figure 16. An example of before and after completion of the topographic static corrections for Row 09, Innomar, and HF data is shown in Figure 17 and Figure 18, respectively.

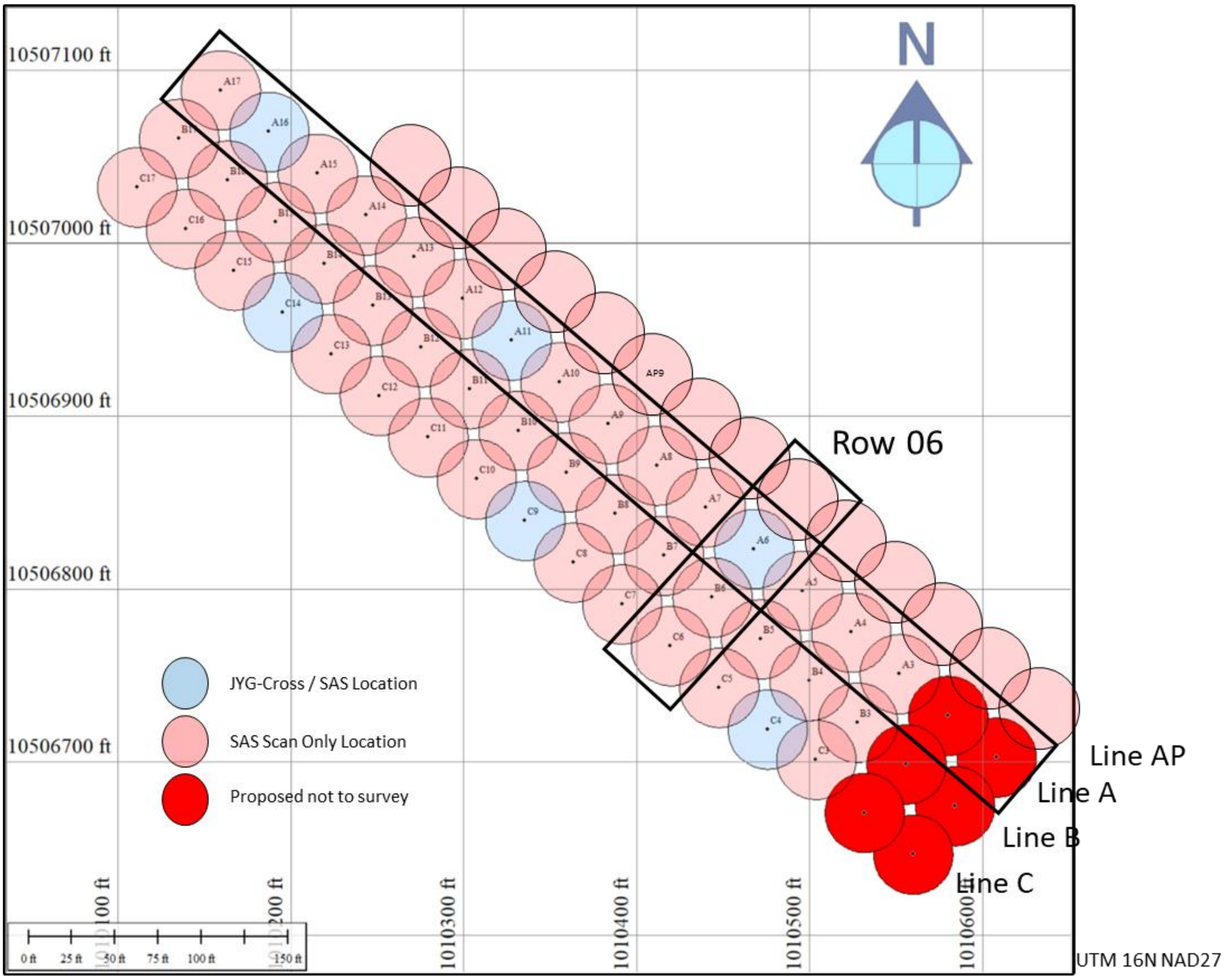


Figure 16 – Acquisition survey schematic with Row 06 and Line A highlighted.

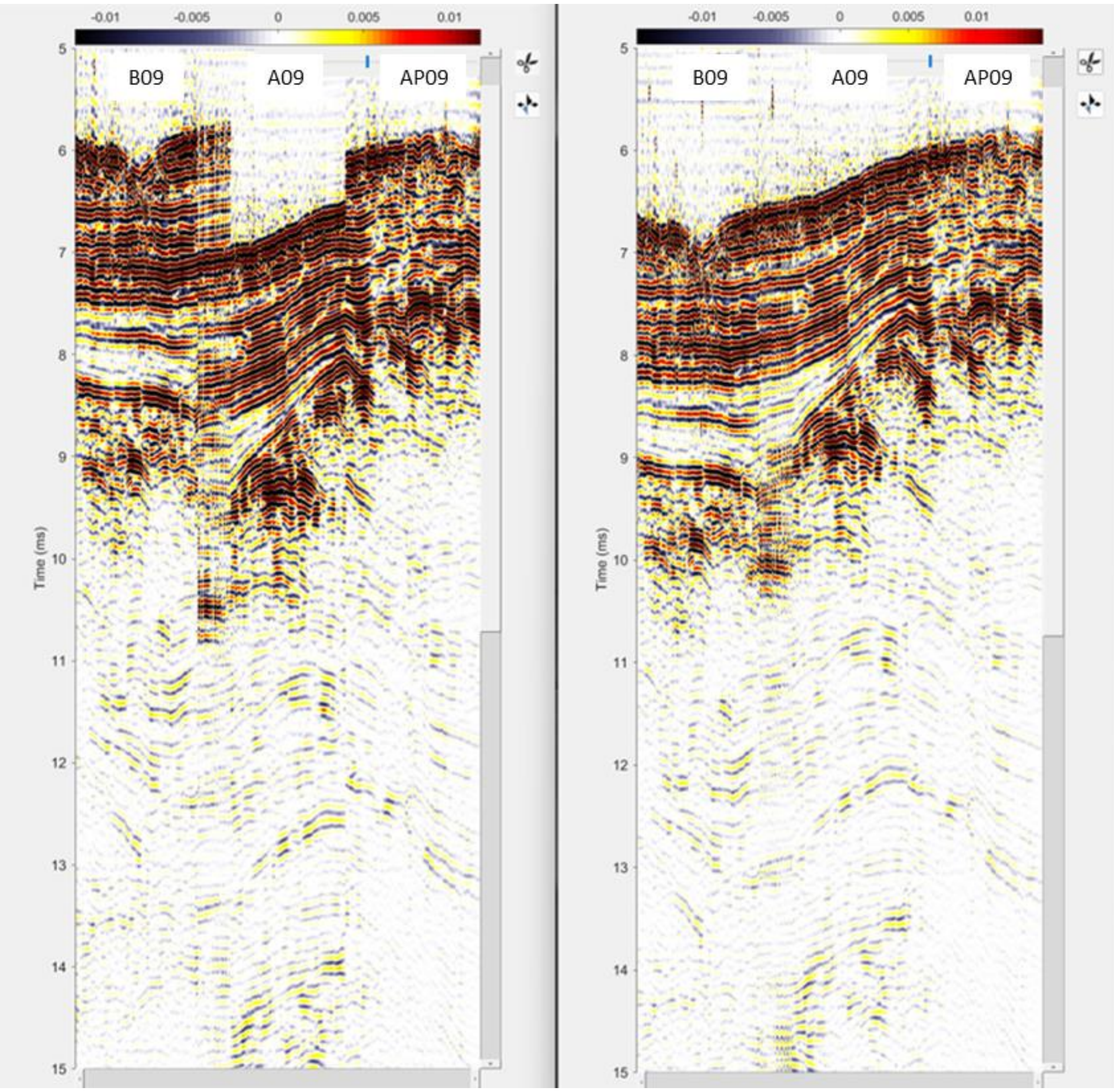


Figure 17 – Example of before (left) and after (right) topographic static corrections using the Innomar data from B09 – A09 – AP09.

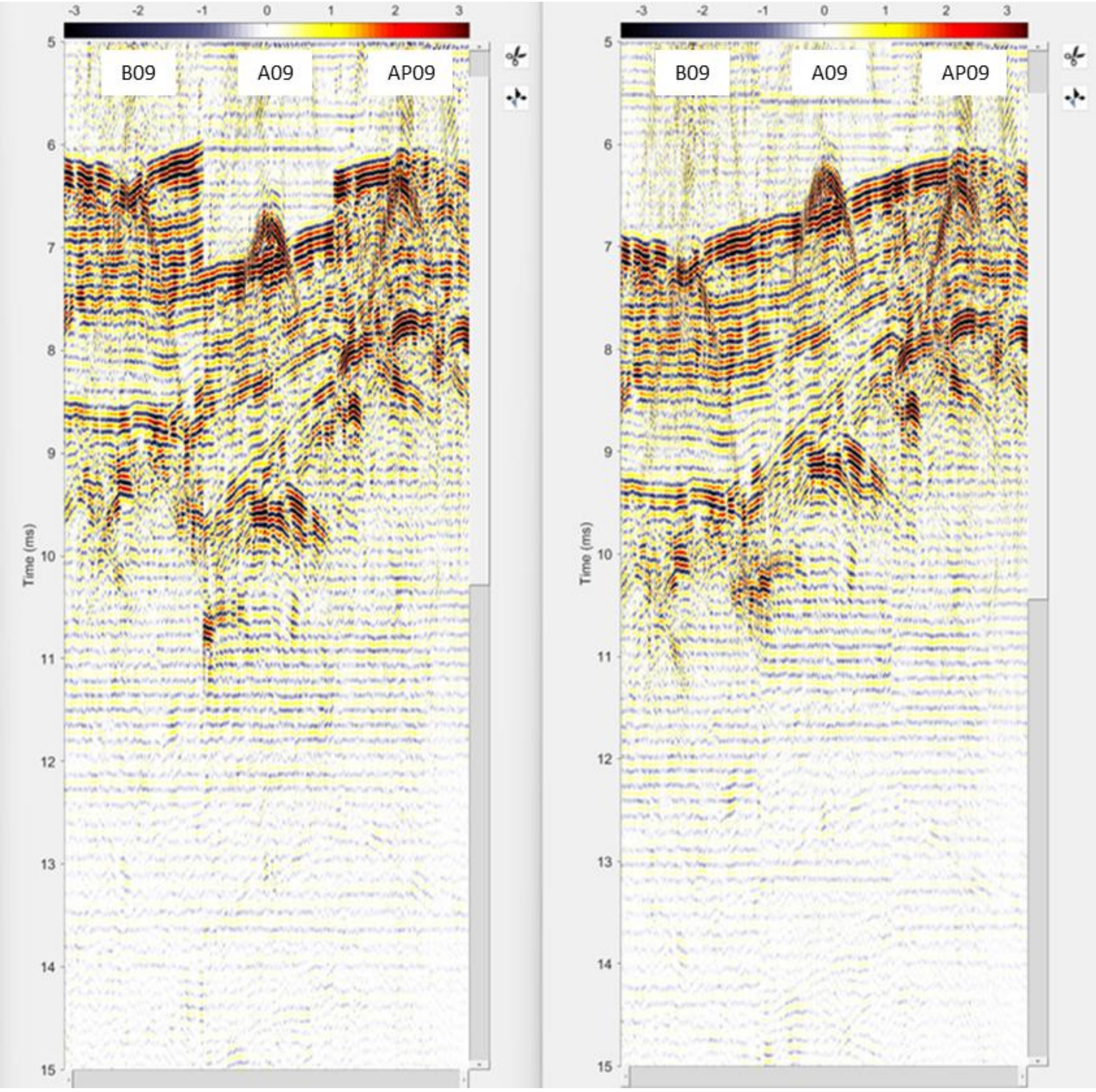


Figure 18 – Example of before (left) and after (right) topographic static corrections using the HF data from B09 – A09 – AP09.

All raw data acquired offshore was subject to continuous QA/QC checks by the offshore team to ensure data quality. QA/QC reports were generated offshore following each AC scan showing the co-ordinates of the required vs. landed AC position atop the piles. Data coverage statistical plots for JYG-Cross and SAS scans were also presented to confirm all positions had been met. A sample shot-gather for the JYG Cross scan and a sample echogram of the SAS scan was provided in these reports as well and presented to the client onboard the vessel.

All acquired data was transmitted via a satellite connection to the PanGeo (Canada) office utilizing Oceaneering's OII Database. See Figure 19 for an overview of this method. The data was then uploaded for secure archiving onto the PanGeo data archive server prior to data processing. For each survey site, the average time to upload a data set to the OII Database, download the data set, and sync it onto the PanGeo server was approximately one and a half hours (1.5 hours). Following this, Site reports were started and were submitted to the Client office with the goal of being within 24 hours of beginning the processing and interpretation for report generation.

Refinement of data processing techniques occurred onshore at the PanGeo (Canada) office following the field campaign. As a result, the interpretation provided herein takes precedence over the results presented in the Preliminary Site Reports.

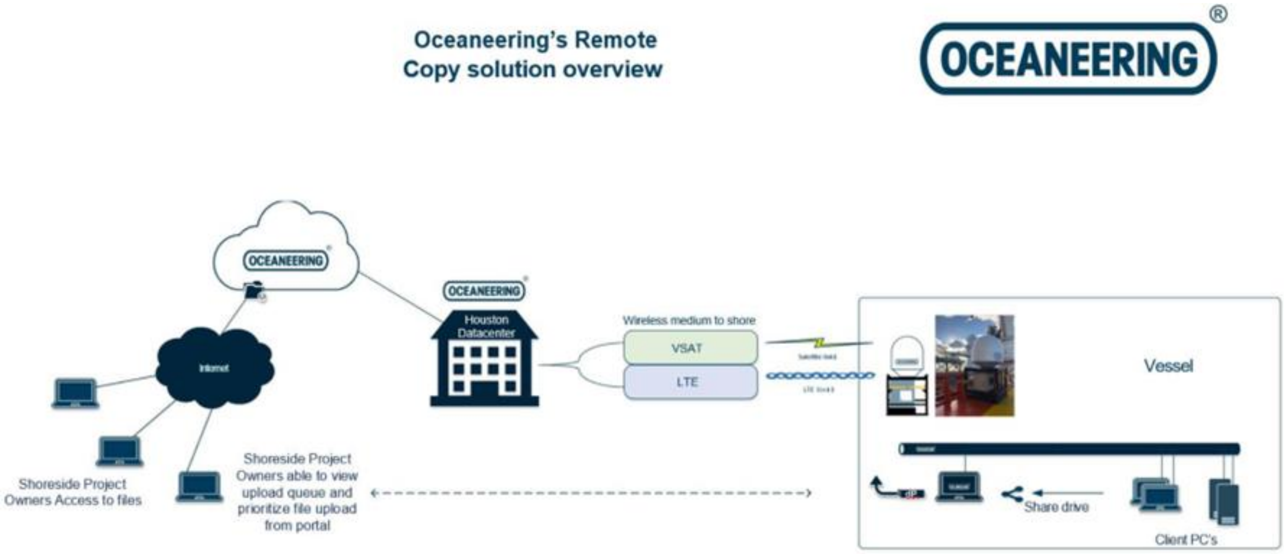


Figure 19 – Oceaneering's remote copy solution from offshore to onshore to Client. ref. 5

JYG-Cross

Process
--- BEGINNING OF PHASE ---
Read GSF file(s) from disk
Calculate and Set "CMPX" and "CMPY" Headers
Calculate Offset and Set "SrcRecDisp" headers.
Perform User-Defined Operations
Bulk Shift
Pass-band (frequency) Filter
Vertical Stack
Match Filter Pulse Compression
Save to SEGY Rev1 File
--- END OF PHASE ---
--- BEGINNING OF PHASE ---
Read SEG-Y Rev1 file(s) from disk
Isotropic (medium) Normal Move-Out Correction with Stack
Apply Envelope
Automatic Gain Control
Convert Data to dB Scale
Depth Conversion
Populate Src X/Y and Rec X/Y with AC Landed Position
Save to SEGY Rev1 File
--- END OF PHASE ---

Phase 1: Pre-Processing

Phase 2: Migration and Post-Processing

Figure 20 – Processing flow for JYG-Cross (2D) data using ZoomSpace™.

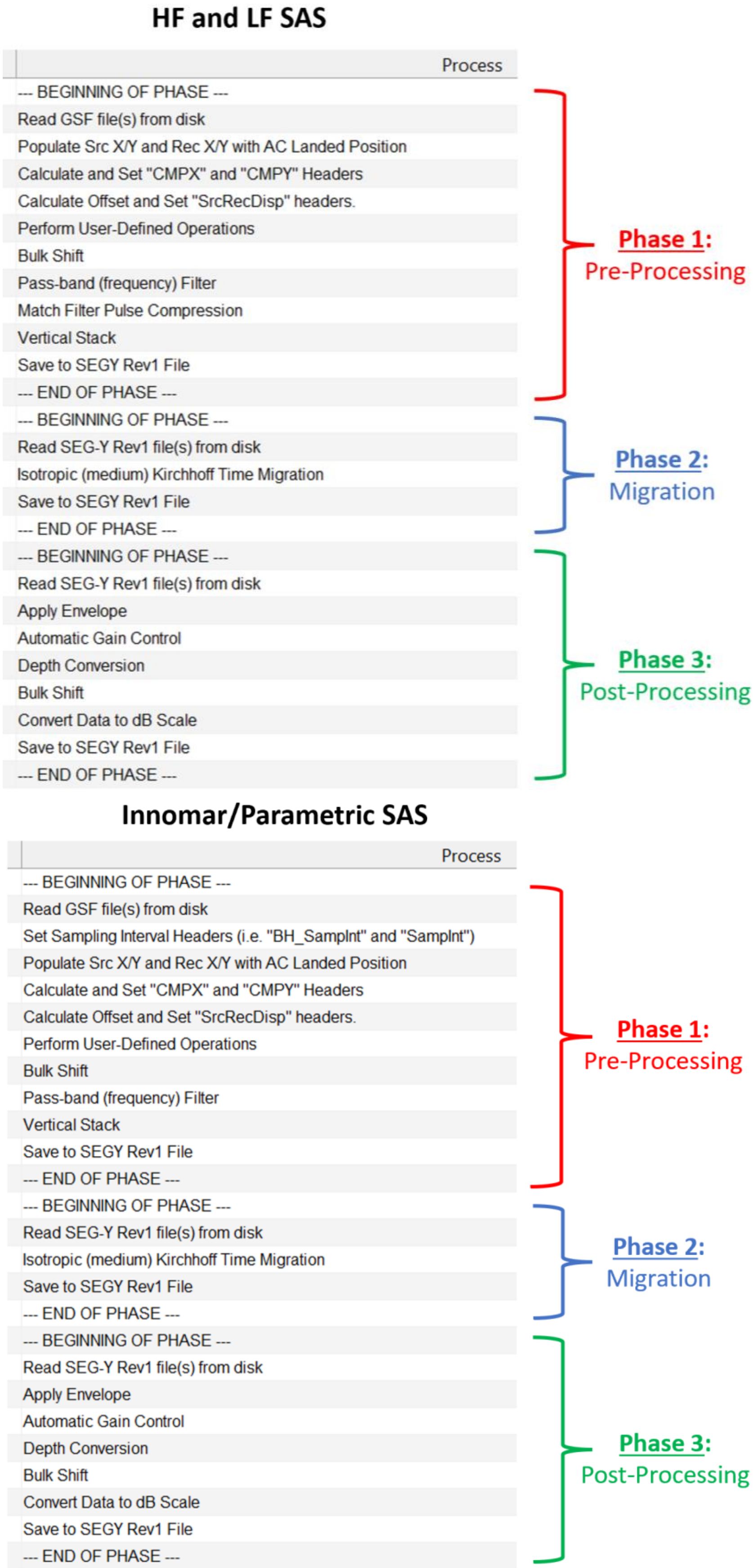


Figure 21 – Processing flow for HF, LF (top) and Innomar/Parametric (bottom) Acoustic (SAS) Core data using ZoomSpace™.

6.2 JYG- Cross Interpretation

The JYG-Cross is a technique that resembles a high-precision seismic line that folds the data to accentuate the geo-strata present in the seabed. It collects approximately five thousand data points along two pseudo-orthogonal lines. This approach enhances coherent reflections (the specular contribution) from stratigraphic layers by emphasizing the diversity of data through stacking and migration (focusing) to enhance events and cancel out incoherent noise and data outliers. This technique provided accurate velocities through the substrate, which were then used to create a velocity model that allows for imaging and depth conversion of the processed acoustic data. Furthermore, it performed a semblance analysis observing the moveout seen in the echo returns across the receivers.

A JYG-Cross semblance analysis was carried out on seven MC-20 scan locations throughout the entirety of the campaign. Six of the Sites, C04, A06, C09, A11, C14 and A16, were scanned at the start of the survey and used to construct extended velocity models of the entire survey area. The seventh site, AP12, was completed near the end of the campaign, to locate incidences of gas.

This section provides an insight into the semblance analysis that was conducted, which led to the generation of the extended velocity models. Semblance analysis is a critical step for imaging Acoustic Corer SAS data. It establishes the proper velocity model to focus the acoustic returns by interpreting the energetic peaks (bullseye's) in the semblance panel. Geoscientists pick the profile that best focuses the Acoustic Corer data. Figure 22 is an example of simple velocity model using semblance analysis. The semblance panel to the left has a velocity profile using five picks. The first two picks are equal to the speed of sound in water. For the MC-20 campaign, the typical speed of sound in water was up to 1522m/s. The next two picks occur at roughly 56ms and 58ms, respectively. These picks correspond with diffractions associated with the conductors. It's important to select the correct velocity at this point to focus on the conductors. Figure 23 demonstrates the sensitivity of the imaging process. Selecting the proper velocity of 1565m/s focuses the energy (bullseye at 1565m/s at 56ms in the semblance panel) such that the conductors are sharp and distinguishable from one another. Using the velocity of 1840m/s, to the right of the bullseye in the semblance panel, smears the Acoustic Corer™ image, causing misinterpretations. The fifth, and last pick in the profile, is picked to the bottom of the desired length of the velocity model using a velocity that is slightly greater than the preceding picks, since p-wave velocity generally increases with depth. Figure 24 to Figure 29 are the results of the velocity analysis using semblance analysis at each JYG-Cross Sites, C04, A06, C09, A11, C14 and A16, respectively. The profiles in these images represent a slice through the centre of the volume. Further details on the velocity model building methodology are provided in Subsection 4.2.1.1. Figure 30 shows the stacked JYG-Cross image at the AP12 site location, where no incidences of gas were observed.

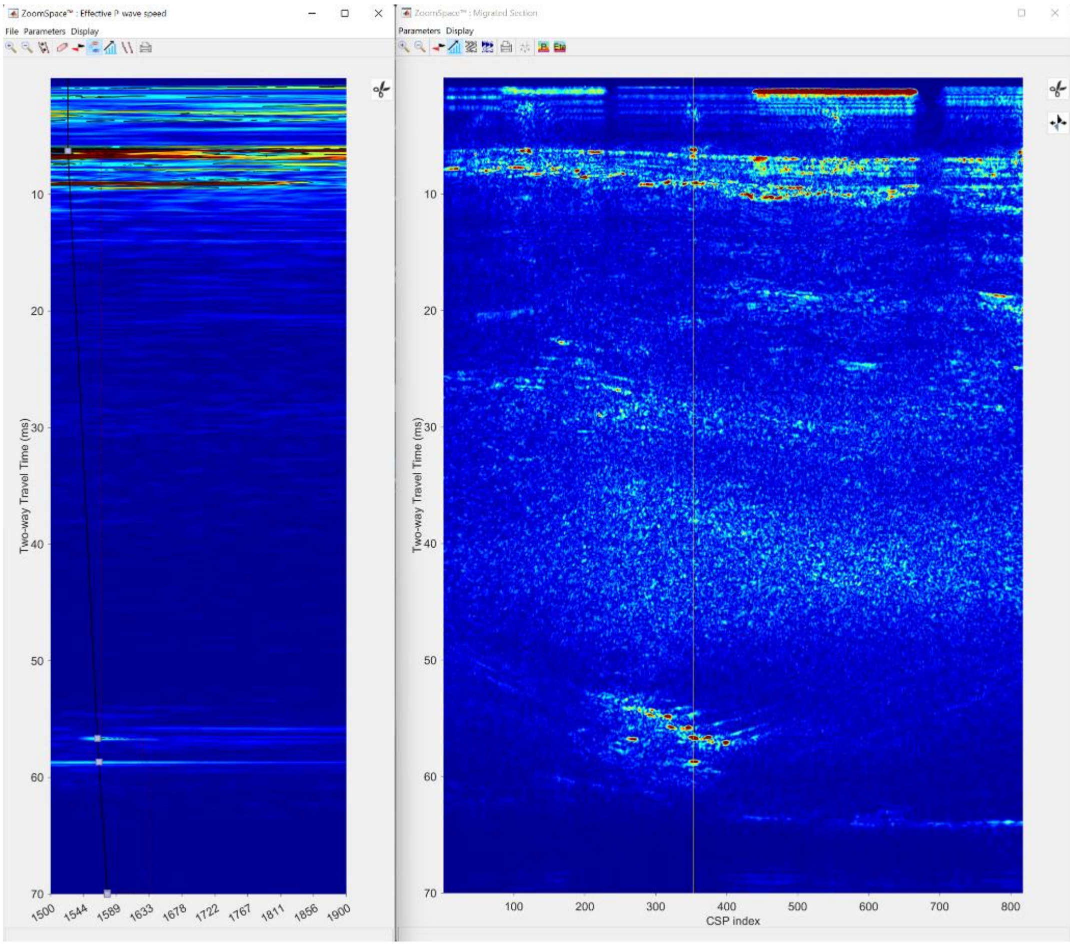


Figure 22 – Row 9 velocity modelling using semblance analysis. The semblance panel on the left has a velocity profile using five picks. The first two picks are equal to the speed of sound in water. The next two picks occur at roughly 56ms and 58ms, respectively. These picks correspond with diffractions associated with the conductors with migrated section across AC volumes on the right.

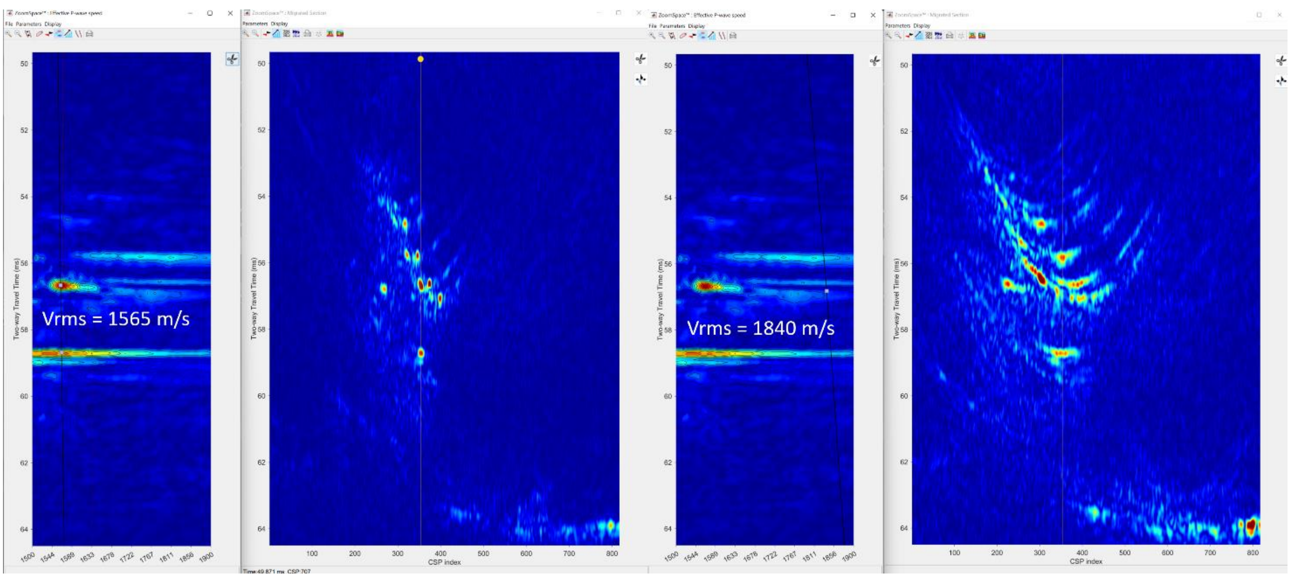
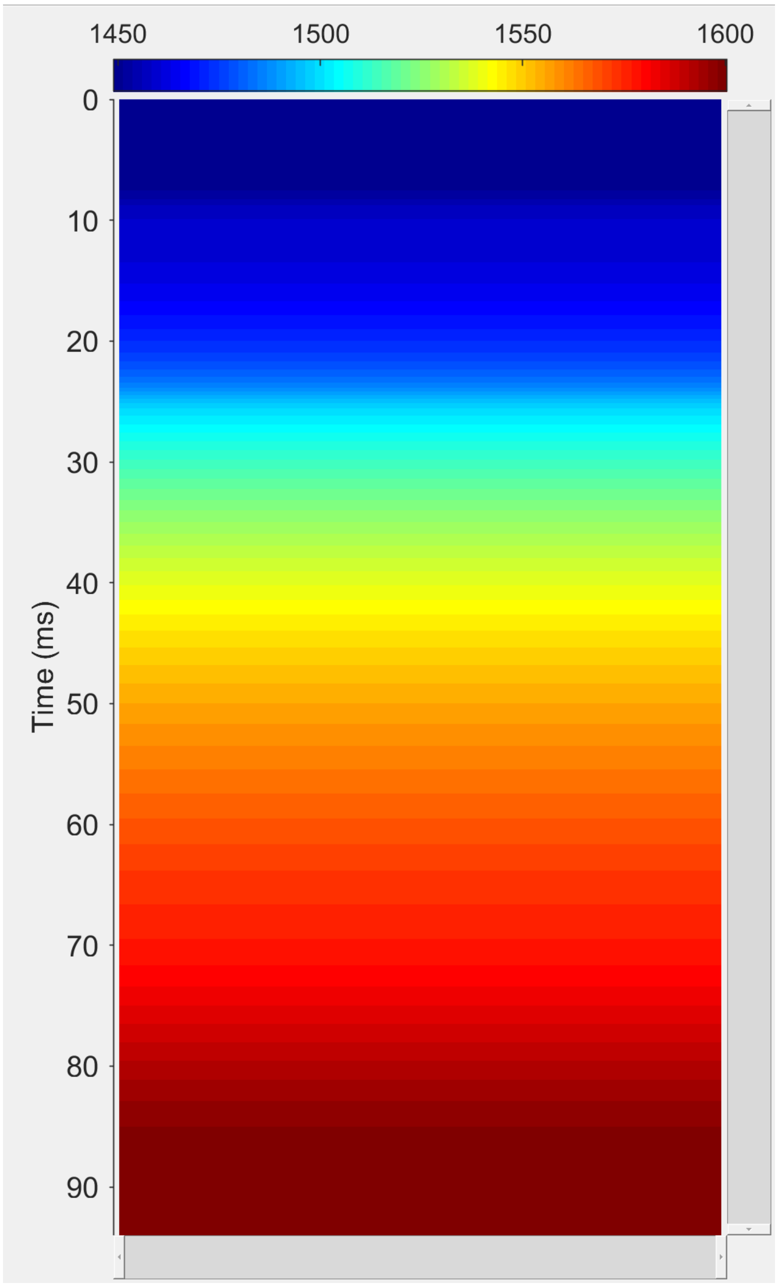
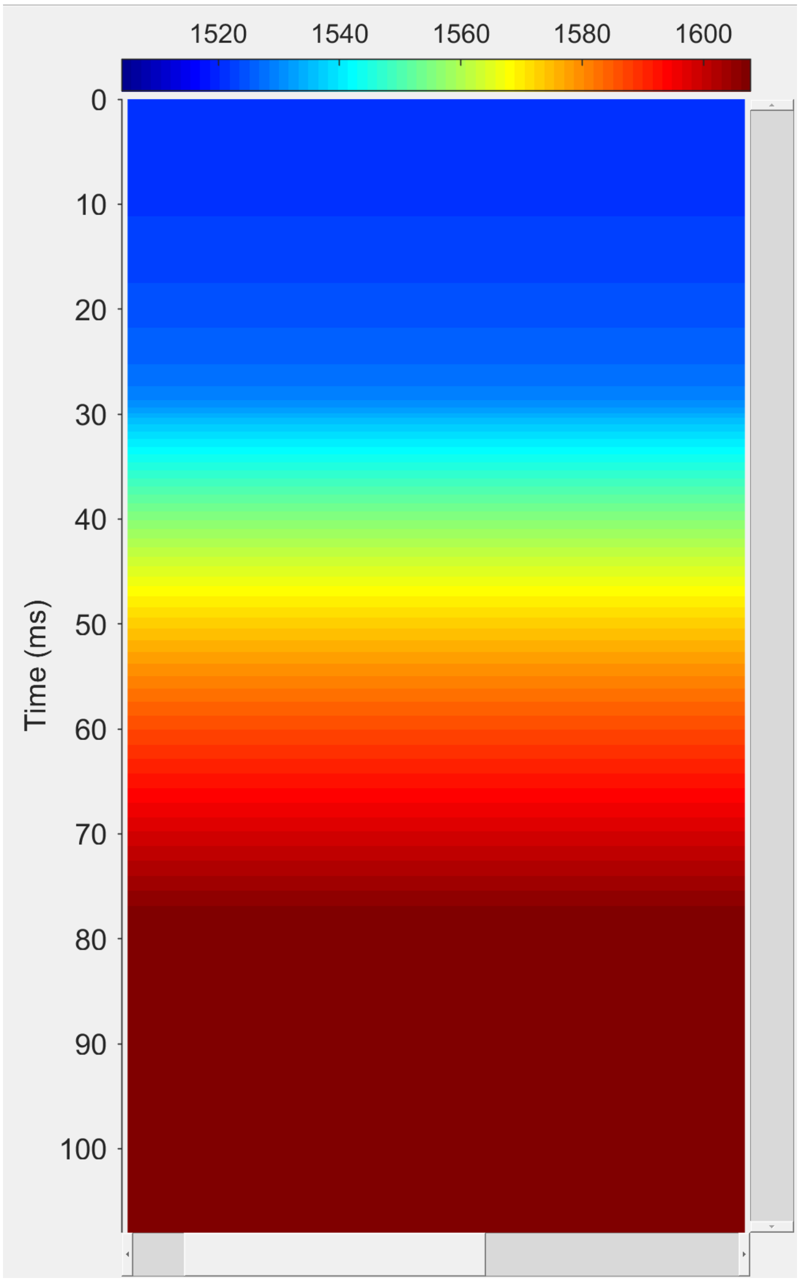


Figure 23 – An example of demonstrating the importance of using a proper velocity in the imaging process. On the left, the image shows that the targets are sharp and distinguishable when the correct velocity is used (Vrms = 1565 m/s). On the right, the targets appear smeared when the wrong velocity is used (Vrms = 1840 m/s).



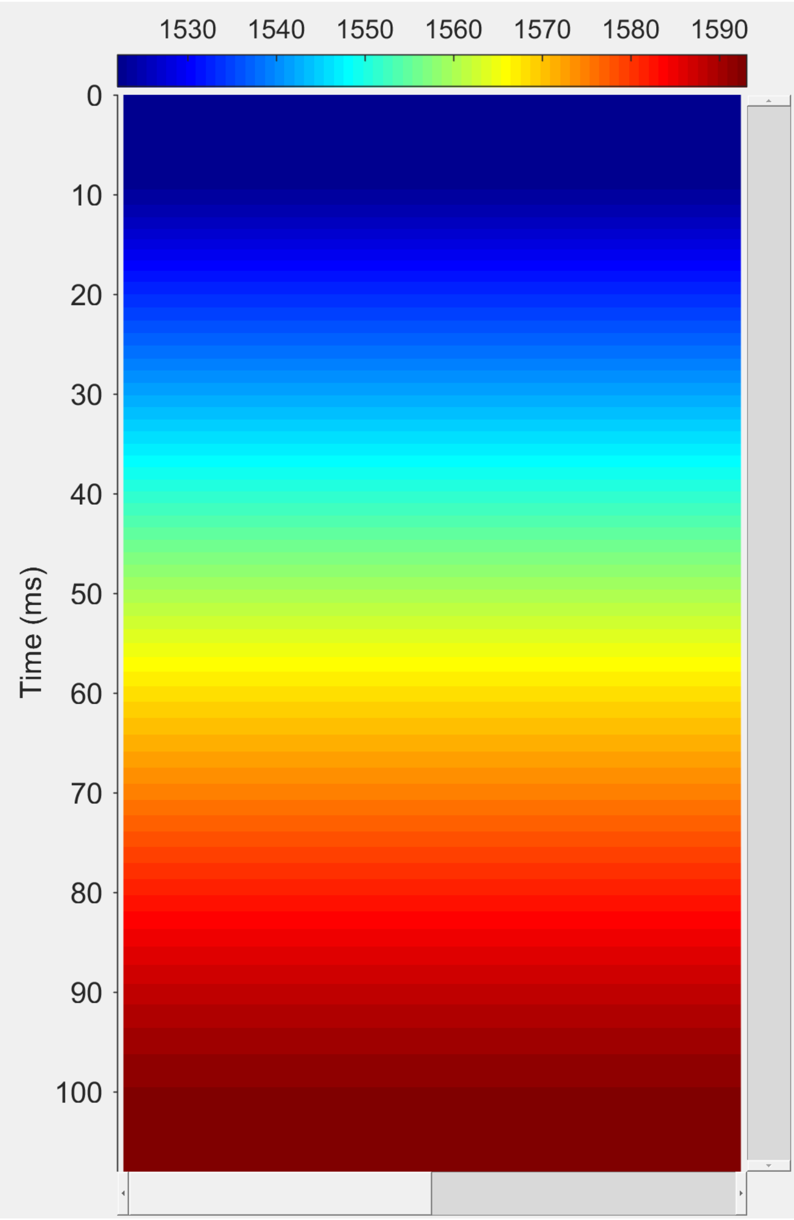
Time (ms)	Velocity (m/s)
6.05	1488
7.92	1452
9.20	1457
12.42	1459
20.29	1473
23.20	1484
25.50	1499
63.00	1571
69.60	1577
90.00	1599

Figure 24 – Resulting velocity model (left) and Vrms profile (right) for Site C04 using semblance analysis. The profile in this image represents a slice through the center of the volume. This velocity model and Vrms profile are used for subsequent data processing and depth conversion respectively.



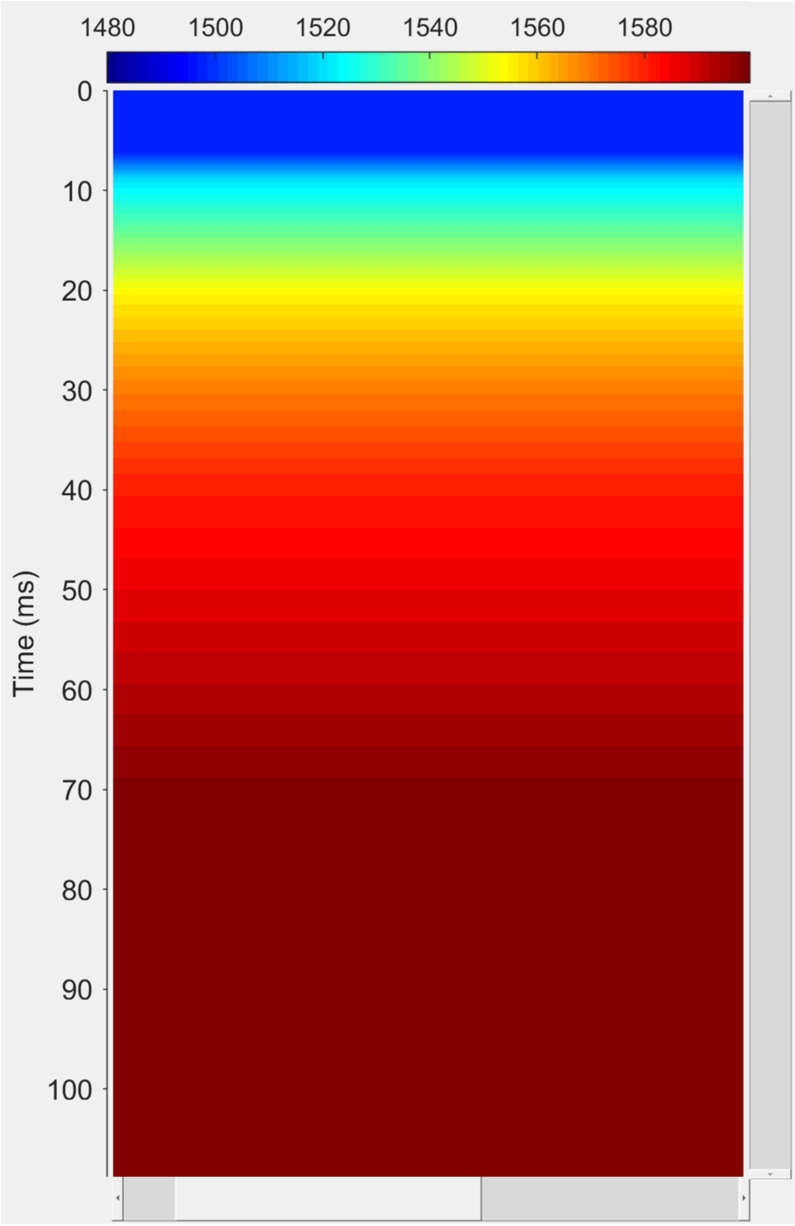
Time (ms)	Velocity (m/s)
0.00	1522
6.11	1522
24.45	1525
28.80	1531
30.79	1536
60.79	1588
108.00	1627

Figure 25 – Resulting velocity model (left) and Vrms profile (right) for Site A06 using semblance analysis. The profile in this image represents a slice through the center of the volume. This velocity model and Vrms profile are used for subsequent data processing and depth conversion respectively.



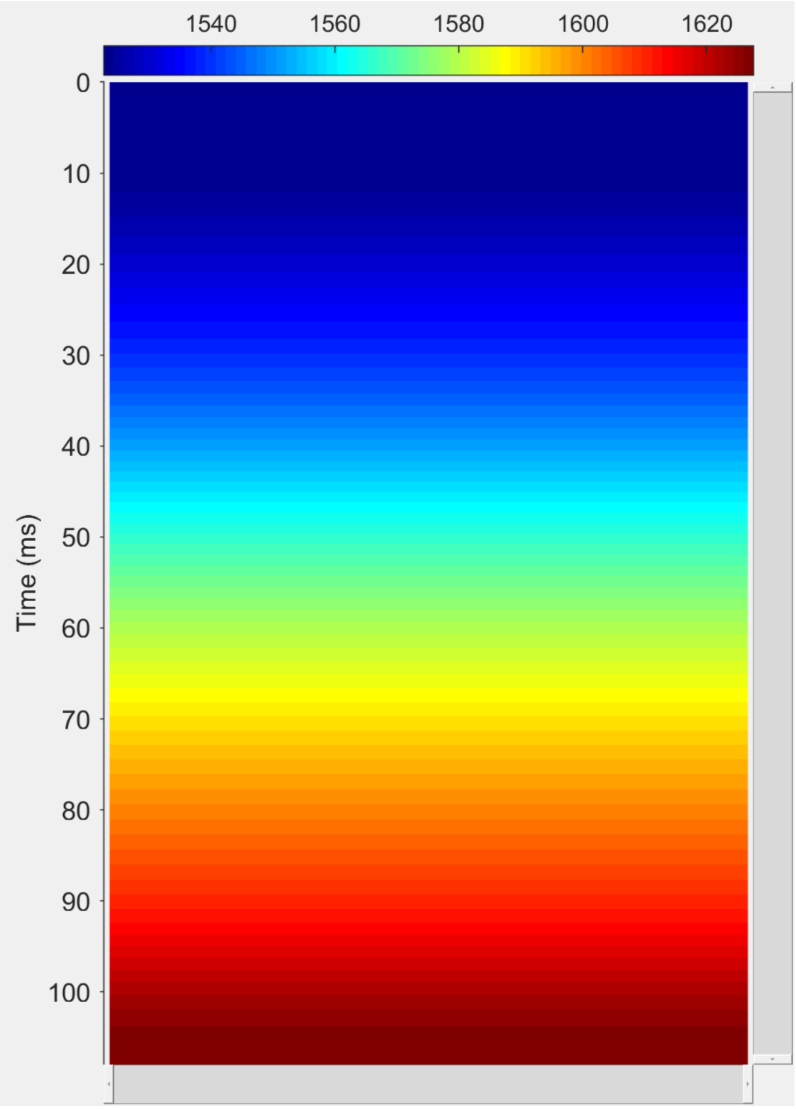
Time (ms)	Velocity (m/s)
0.00	1522
6.16	1522
20.24	1532
64.06	1569
108.00	1592

Figure 26 – Resulting velocity model (left) and Vrms profile (right) for Site C09 using semblance analysis. The profile in this image represents a slice through the center of the volume. This velocity model and Vrms profile are used for subsequent data processing and depth conversion respectively.



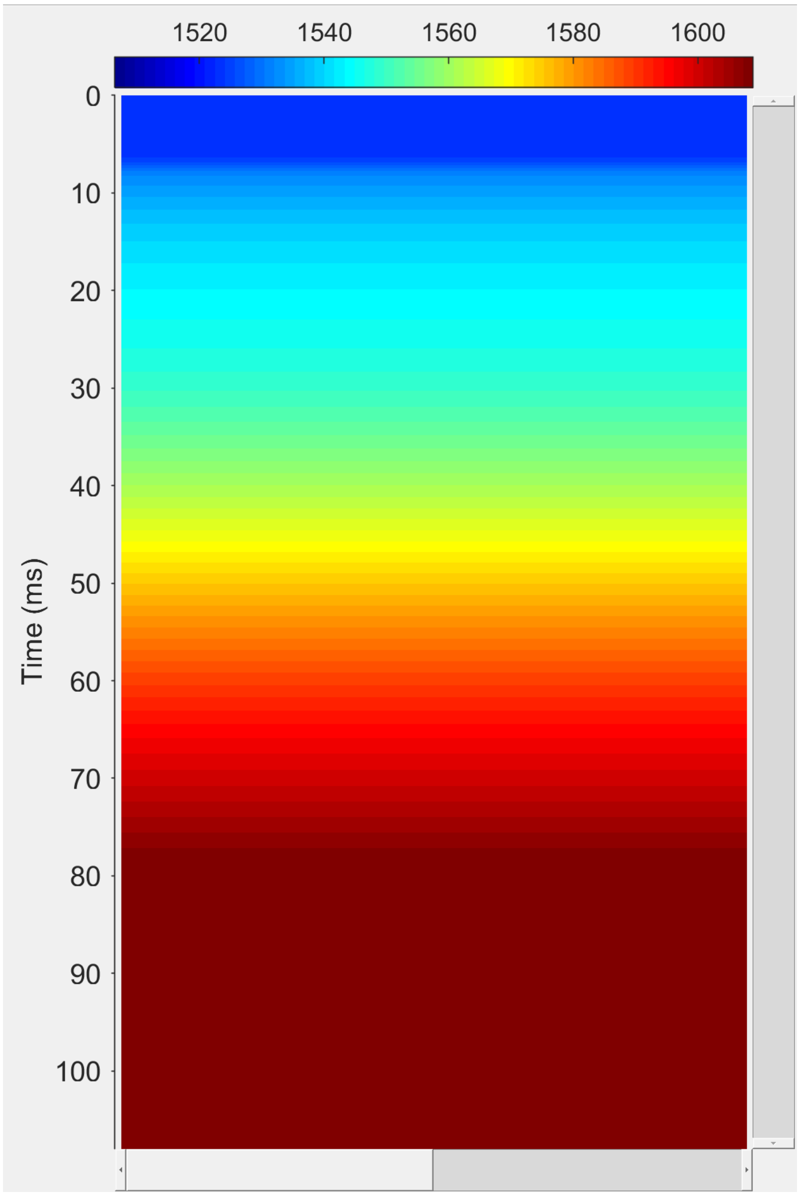
Time (ms)	Velocity (m/s)
0.00	1496
6.14	1496
8.90	1520
20.52	1555
29.13	1567
39.35	1579
69.47	1598
106.72	1618

Figure 27 – Resulting velocity model (left) and Vrms profile (right) for Site A11 using semblance analysis. The profile in this image represents a slice through the center of the volume. This velocity model and Vrms profile are used for subsequent data processing and depth conversion respectively.



Time (ms)	Velocity (m/s)
0	1522
6.99	1522
26.72	1536
61.02	1579
90.00	1607
108.00	1627

Figure 28 – Resulting velocity model (left) and Vrms profile (right) for Site C14 using semblance analysis. The profile in this image represents a slice through the center of the volume. This velocity model and Vrms profile are used for subsequent data processing and depth conversion respectively.



Time (ms)	Velocity (m/s)
0.00	1522
6.17	1522
8.17	1529
31.00	1550
67.90	1598
108.00	1627

Figure 29 – Resulting velocity model (left) and Vrms profile (right) for Site A16 using semblance analysis. The profile in this image represents a slice through the center of the volume. This velocity model and Vrms profile are used for subsequent data processing and depth conversion respectively.

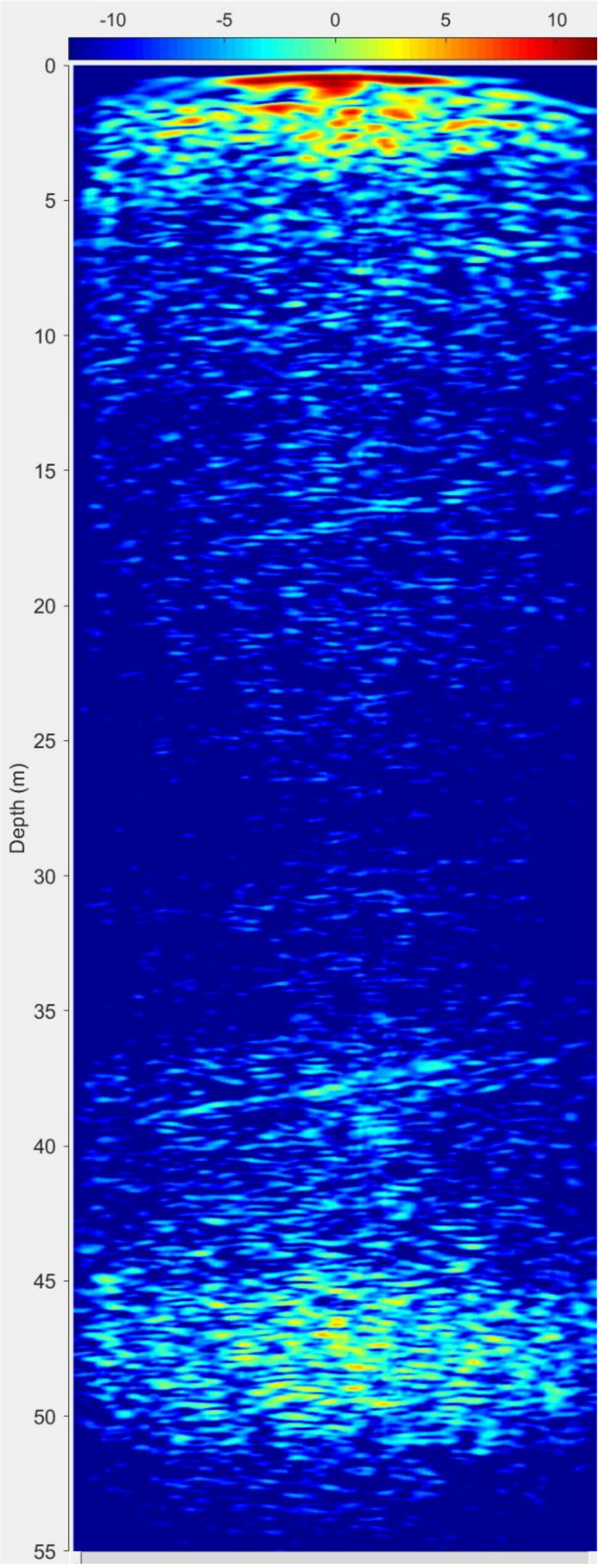


Figure 30 – Stacked JYG-Cross image to a depth of 180.4ft (55m) at the AP12 site location, showing that no incidences of gas were observed.

6.3 Observations and Interpretations

Sixty-three (63) highly dense and focused Acoustic Corer™ (AC) data were successfully acquired throughout a strategically plotted layout of four survey grid lines: A, B, C, AP, along with scans at BP1 and four X locations surrounding the A12 site. The data collection and processing program consisted of four consecutive phases:

Phase A: Collection of 63 singular Acoustic Corer datasets with preliminary reporting

Phase B: Assembling the 63 cores into a comprehensively compiled mosaic of the completed survey area

Phase C: Final migration into a unified final dataset

Phase D: Visualization and digitization of conductor features

6.3.1 Phase A: Collection of 63 singular Acoustic Corer datasets with preliminary reporting

In Phase A, which acquired the 63 Acoustic Cores, the emphasis was on examining sites individually (refer to Interim Site Reports and Interpretative Charts; Volume II).

6.3.2 Phase B: Assembling the 63 cores into a comprehensively compiled mosaic of the completed survey area

In Phase B, the sites along the lines were combined coherently, resulting in multi-aspect views of the sub-seabed character highlighting with clarity the presence of linear conductors down to approximately 165ft (Figure 31, Figure 32, Figure 34, Figure 35, Figure 36, Figure 37, Figure 39, and Figure 40). The images in Figure 31 to Figure 40 were created using 3-D volumetric datasets from the preliminary reporting. All data are viewed at an established Mean Sea Level chart datum. At this stage the effect of topography on processing and interpretation was not considered.

The AC data sets accurately captured not only the specular returning sedimentary signals (sedimentary horizon-based reflection mapping) but more importantly, captured the non-specular returns of conductors. These conductors exhibit a continuous traverse from NW to SE. The AC data sets delivered a volumetric image of the conductors' presence at depth in their exact vertical and horizontal shape, size, and form.

In the upper region of the sub-seabed, approximately in the upper 60ft (18m) approaching the seafloor, the sub-seabed composition is characterized by an unconsolidated chaotic nature, associated with the mudslide flow event. In this region, clay-based linear diffractors are present within a weak non-cohesive sediment matrix. This accords well with the geotechnical information related to the composition of the mudslide. Out of the total 482 identified anomalies, the 394 have been interpreted as geological in composition.

The AP and A gridline region showed the concentration of distinctly formed conductors (Figure 31, Figure 32, Figure 34, Figure 35). In three locations, vertical features associated with oil/gas emanating from the conductor features were observed at Sites AP0, AP01 and AP08 (Figure 32 and Figure 33). The acoustic response NW of Row 11 contrasts with what is seen in the SE. The geology in the upper 100ft (30m) and deeper to 165ft (50m) NW of Sites A11, B11, and C11 shows no linear features.

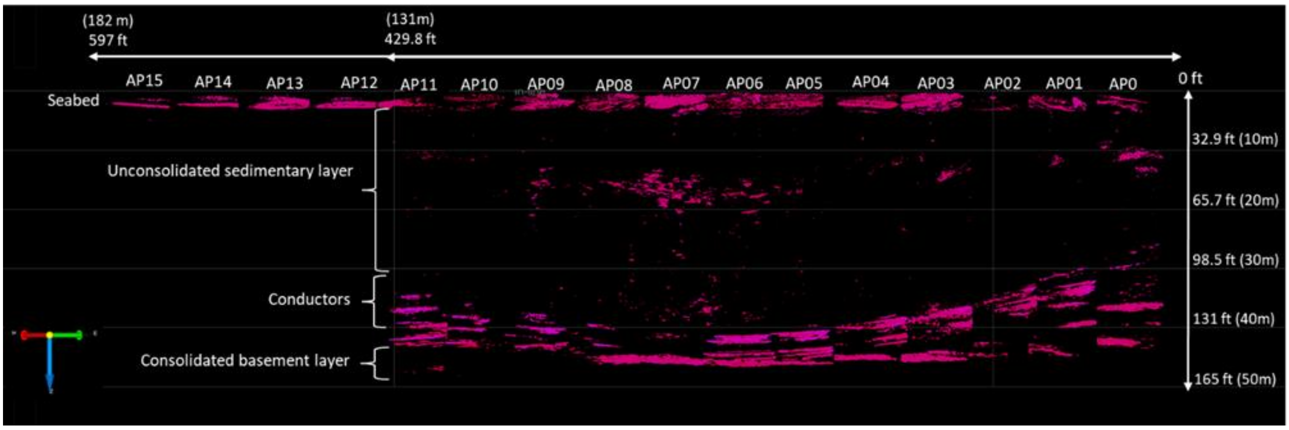


Figure 31 – HF volumetric profiles of all Sites in the AP-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

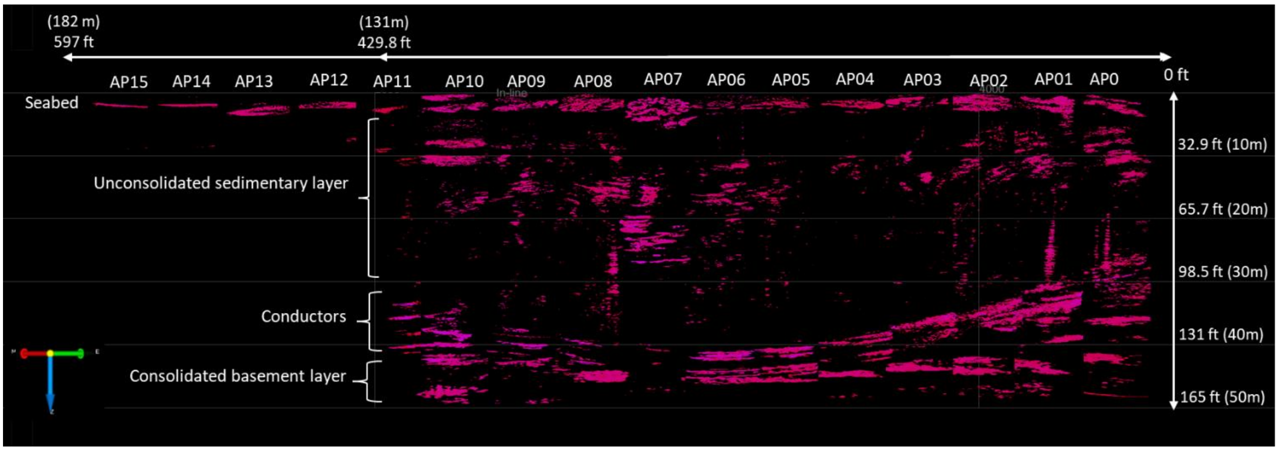


Figure 32 – Parametric volumetric profiles of all Sites in the AP-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

What we observe is that there is a continuous conductor or bundling of pipes as a pathway from the collector dome towards the original conductor bay. The presence of gas/oil escaping from the conductor bundles at depth along Sites AP08, AP01 and AP0 was especially interesting as these appeared to be minor gas escapes coming from conductor damage or leakage but not in an open unconstrained plume-like manner (Figure 33). AP0's presence is close to the collector dome, where several oil plumes are captured. The leaking hydrocarbons support that the conductor or pipe channel for the flow of oil and gas is continuous from the conductor bay to the dome.

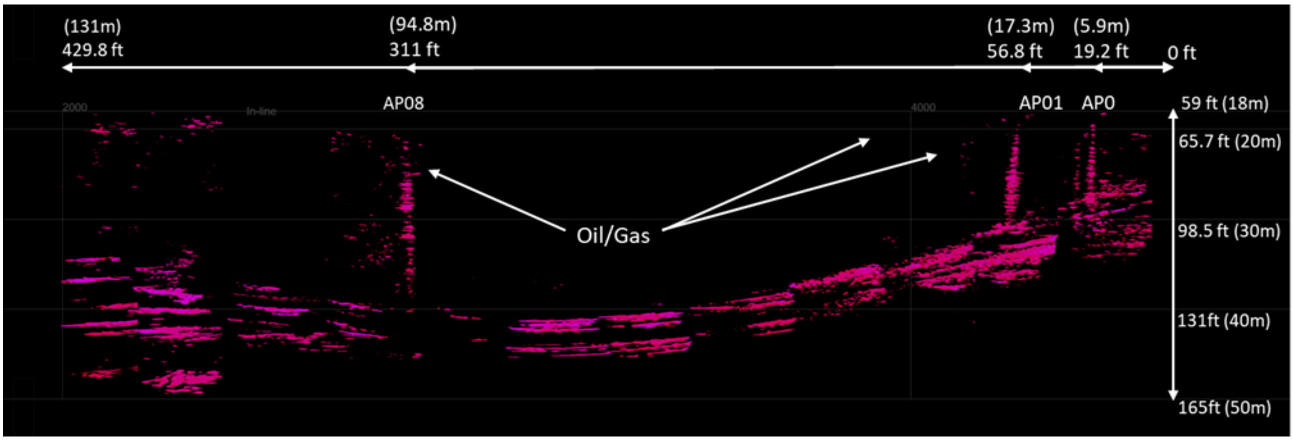


Figure 33 – Parametric volumetric profiles of Sites AP0 – AP08 showing the conductors and the associated oil/gas vertical features.

Additional scans at the centre data gap of scans (X01, X02, X03, and X04) between Sites B11 – B12 and Sites A11 – A12 were acquired to provide more detailed examination. Pipe-like conductors near the original well source location at Sites A11 and AP11 appear loosely grouped, becoming more coherently bundled between sites AP09-A9 to AP04-A04. From AP03-A03, the bundles begin to separate as they slope upwards until they reach the active dome oil collector near Sites A01 and AP0. The conductors linearly repose on a gently sloping, reflectively pronounced consolidated basement floor. The basement slope and bundled conductor packages follow and curve upwards straight to the capture dome (see Figure 31 and Figure 32 for AP Sites; see Figure 34 and Figure 35 for A Sites).

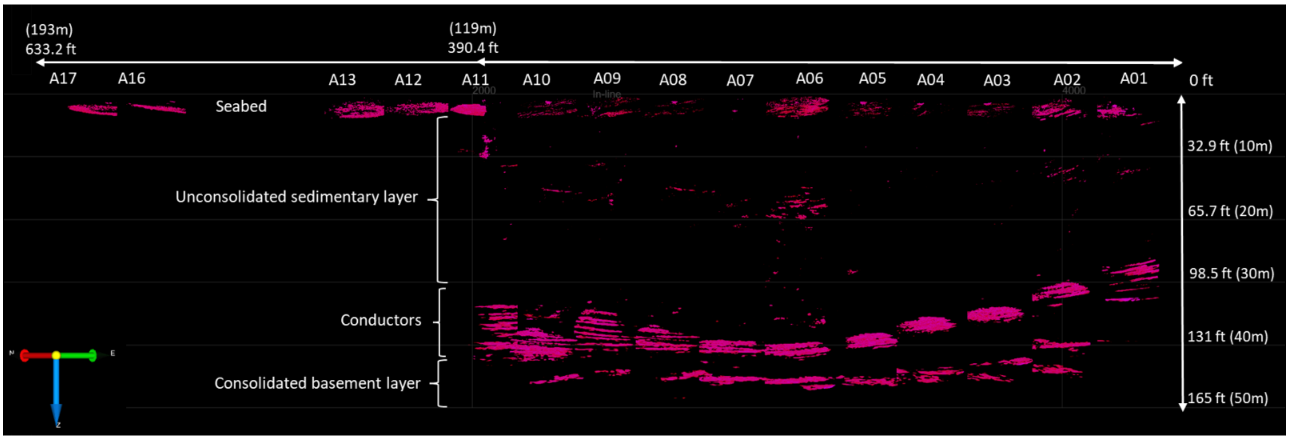


Figure 34 – HF volumetric profiles of all Sites in the A-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

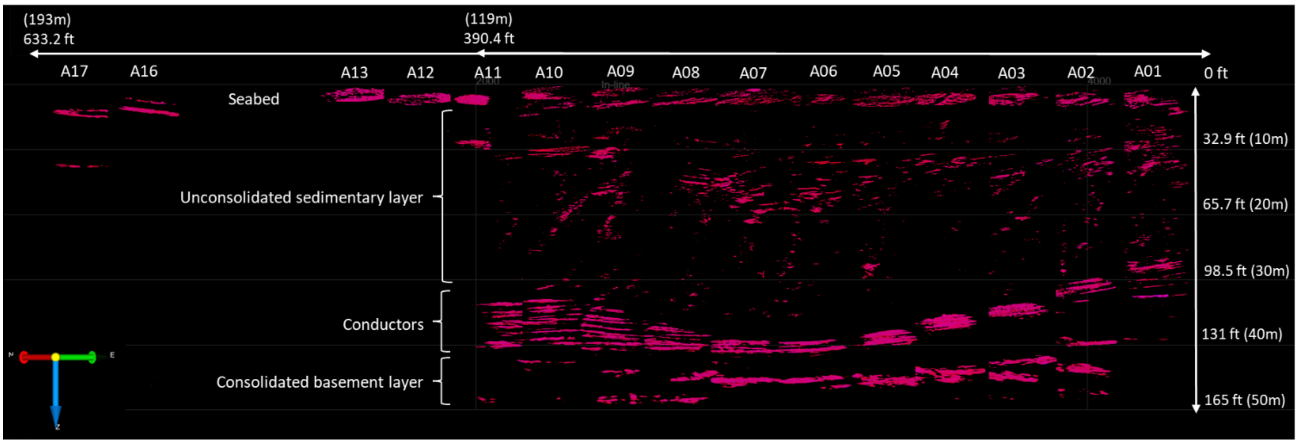


Figure 35 – Parametric volumetric profiles of all Sites in the A-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

The corers acquired along the B-line are characterised by the unconsolidated upper sedimentary mud-slide-influenced shallow zone (Figure 36 and Figure 37). This upper region's sediment character concords with what is noticed in the AP and A-lines and what is observed in the C-line. Apart from a distinct pipe feature deep in the sub-seabed at Sites B9 (Figure 39) and B12, the B-line only exhibit a few linear targets over a dominant consolidated basement layer.

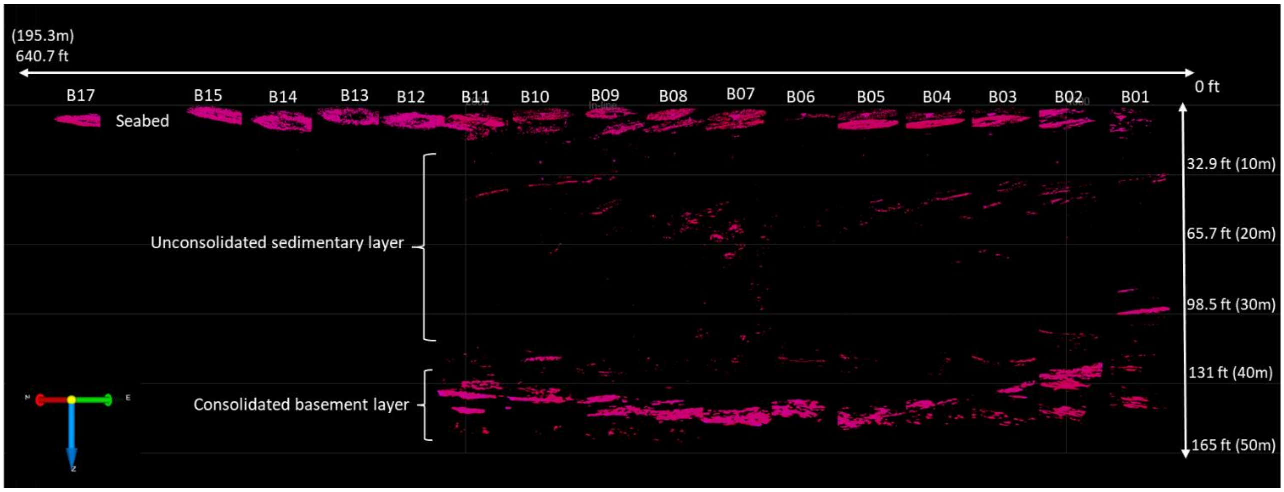


Figure 36 – HF volumetric profiles of all Sites in the B-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

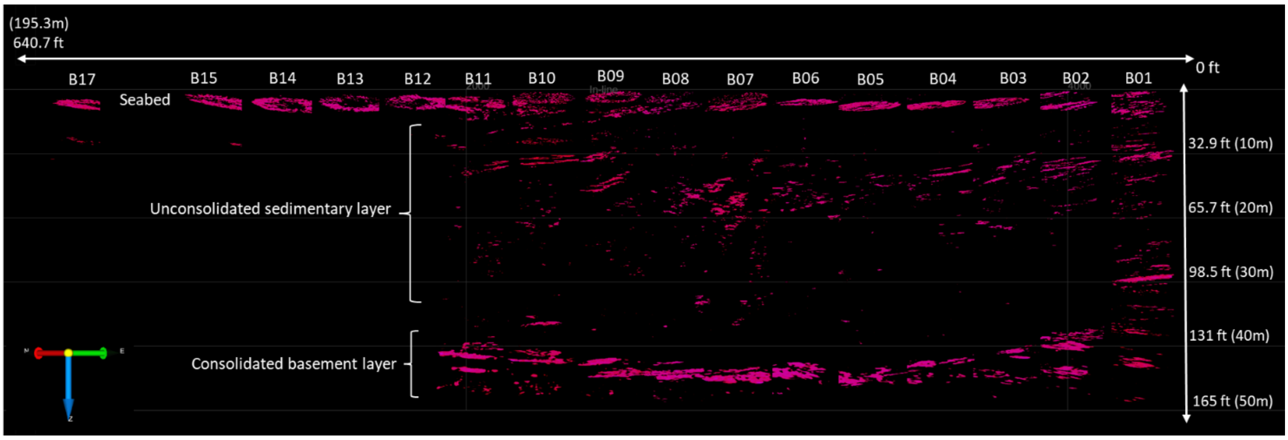


Figure 37 – Parametric volumetric profiles of all Sites in the B-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

The conductors, as revealed to the NW, trend from lines A/AP, starting at Site A07 entering Sites B08 – B09 and continues as an isolated conductor before the acoustic response terminates around Site B11 (Figure 38). It should be noted that the depth of this isolated conductor is at 150ft (45m). At Site B12, there is a linear feature travelling E-W at the same depth 135ft (40m) as the features seen at Site A11. It is not clear if it is an isolated target or linked to the Site A11 related conductors.

The data also supported the distinct and abrupt termination noted around Site A11. For the conductors in the 11th Row of A and AP, there are three potential reasons why they “appear to stop”. The first reason is they go vertically downward or at least close to vertically downward. The second reason is that the conductors have fractured. If the conductors completely were fractured and separated, we would have seen evidence of linear tubular features, discontinuous debris forms and chaotic structural members in the B, A and AP Lines at the 13, 14, 15 and 16 scan locations. This was not observed in any of these scans. Had it been, we would have been able to pick pipe fragments down to a depth of approximately 200ft (61m). These scan sites were examined in detail. No distinct, compelling targets were recorded. If the conductors were discontinuous, we would have captured hydrocarbon plumes. This we did not see in the data. The third reason is around Row 11, gas-laden soil inhibited the acoustic ability to get a return and collect data. However, whilst the termination is abrupt at Site A11, we see a N/S linear feature in Site B12 that heads to Site A11 (See Figure 38). This feature appears to be very minor and discontinuous. It is only noted for completeness, however, it does not mean it is related to the features seen in the rest of the A-Line or B-Line.

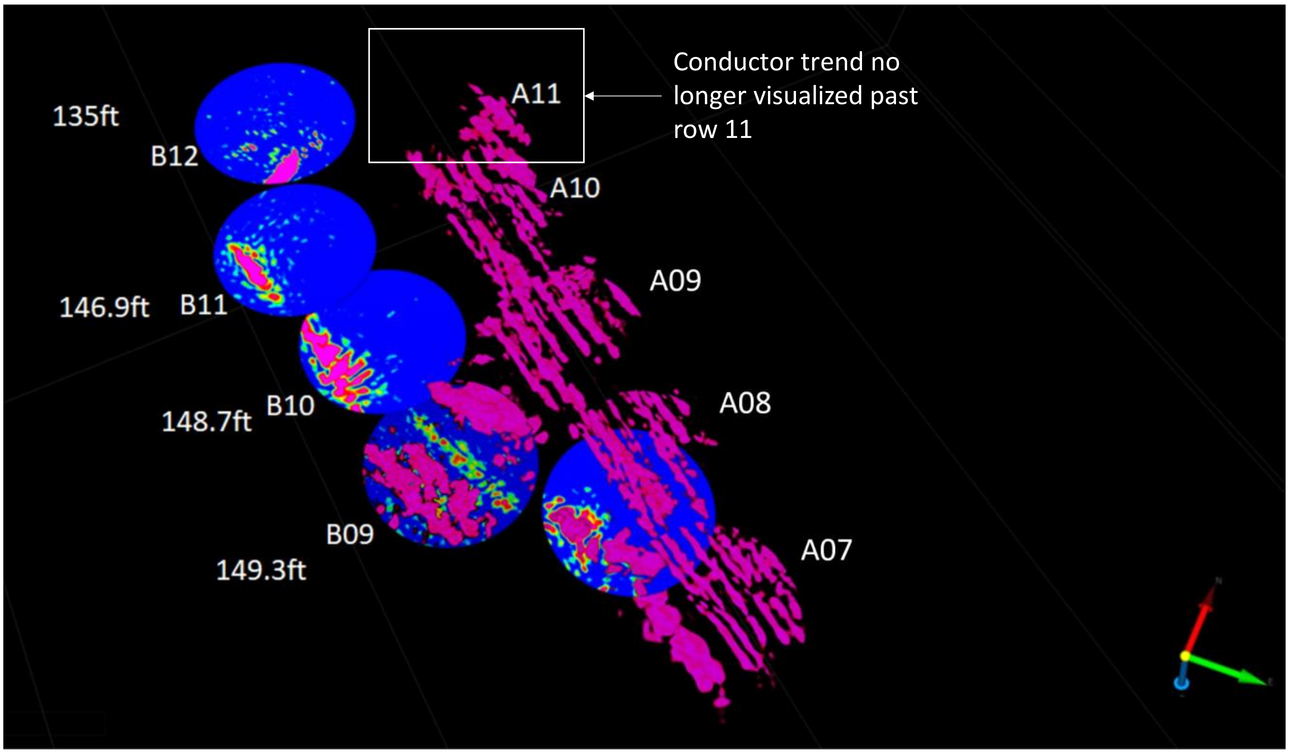


Figure 38 – HF volumetric profiles of Sites A07 – A11 and B09 to B12 between the depth of 135 – 150ft (41 – 46m).

The C-line also holds similar sedimentary features, with a basement layer being the dominant feature (Figure 39 and Figure 40). Again, potential linear targets are noticed at the C1 to C5 sites, sloping upwards as the basement geology rises towards C1. The features trend more to the west from C5 and are not visualized in any adjacent cores, namely C06-C09. Sites C06-C09 are noted to contain sedimentary strata alongside a gently sloping basement layer at depth, with no other linear features of note. Sites C10-C14, C15 and C16 were not surveyed, while C14 and C17 show mostly transparent acoustic cores with few sedimentary strata.

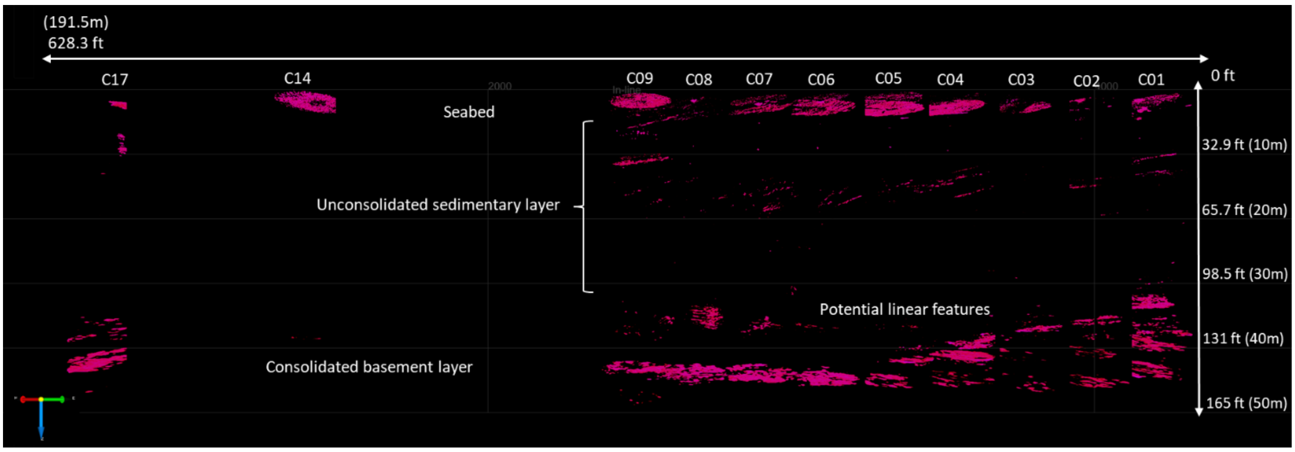


Figure 39 – HF volumetric profiles of all Sites in the C-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

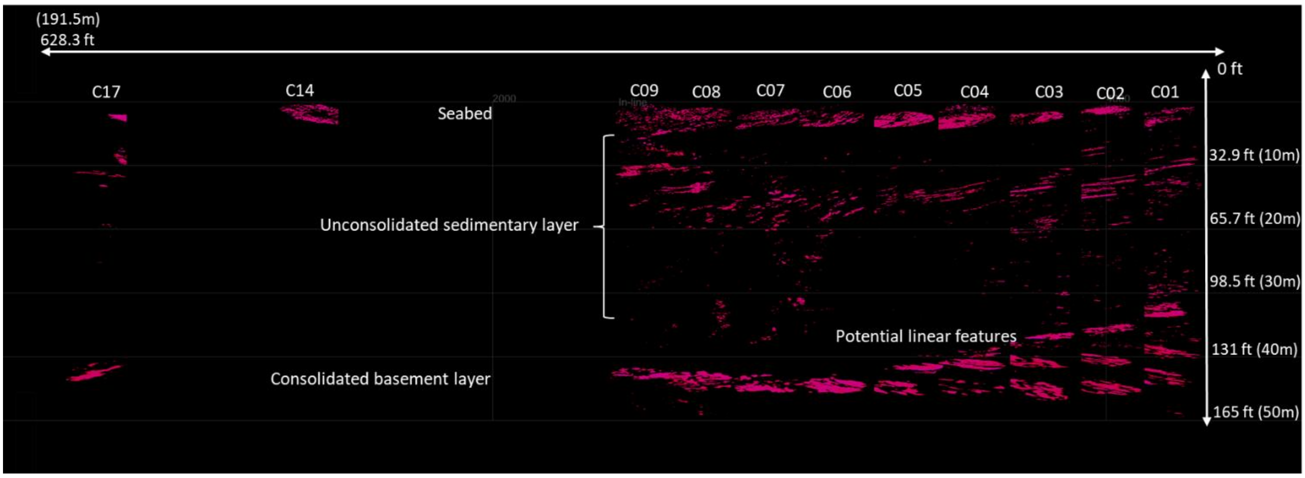


Figure 40 – Parametric volumetric profiles of all Sites in the C-survey line combined coherently with annotated interpretations. It is important to mention that this image was captured prior to the final processing and unified volumetric interpretation. Therefore, the separation that appears between the features is due to the physical separation of the corers.

6.3.3 Phase C: Final migration into a unified final dataset

In Phase C, sixty-three (63) highly dense Acoustic Cores were individually topographically corrected and processed as a singular large area seismic volume (Figure 41) encapsulating the whole regions of the four (4) survey grid lines: A, B, C and AP. This combined data set was successfully migrated and focused coherently, manifesting smooth and continuous displaying of the linear conductors at approximately 165ft (Figure 42 to Figure 47). What is noticeable is the smooth transitional continuity from the collection dome to their abrupt termination, as manifested at Sites A11 and AP11 (Figure 42). At this termination of features around Row 11, we can see that their ends are individually separated and lifted with a slight downward inclination. This is best seen in Figure 44 and Figure 45.

This form and separation of the conductors could suggest that a shock at the original well site occurred, resulting in a massive forward near perpendicular bending of the conductors leading to the separation of the pipe features from their constraining bundle collar. This contrasts sharply with the central area of the conductors traversing around Rows 07, 06, 05 and 04 (Figure 50), which presents the conductors in a relatively undisturbed cylindrical held package.

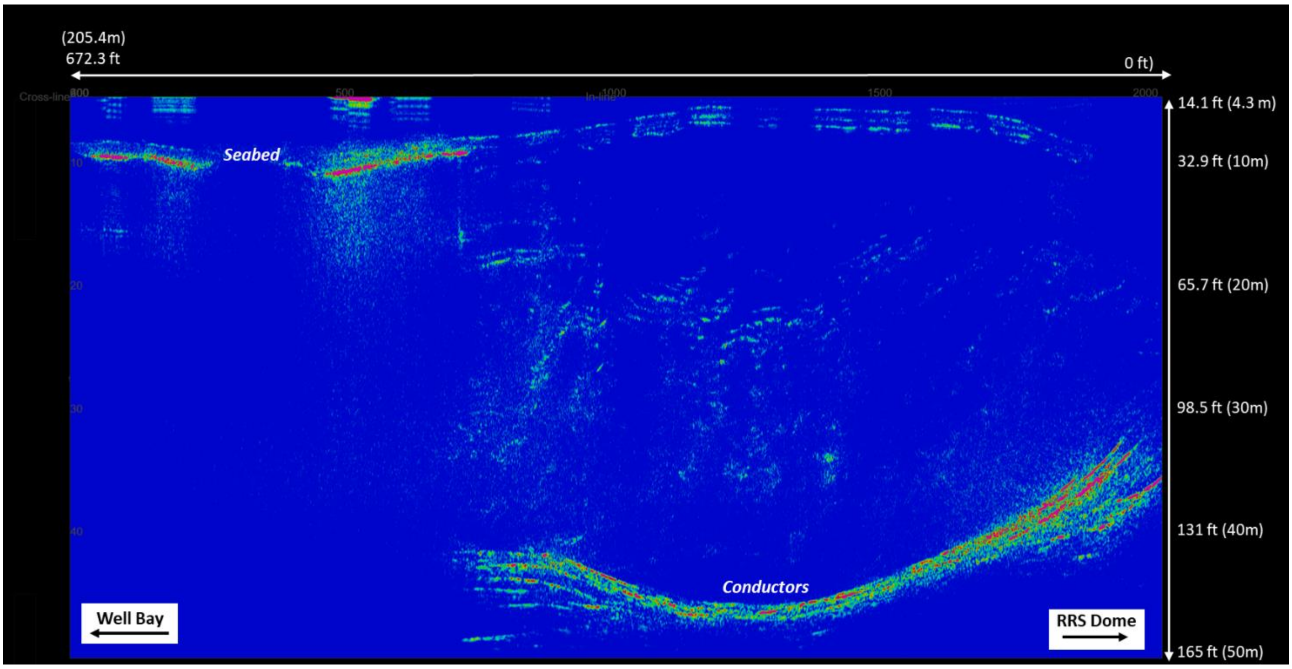


Figure 41 – Crossline 335 of the unified migrated volume highlighting important features of interest.

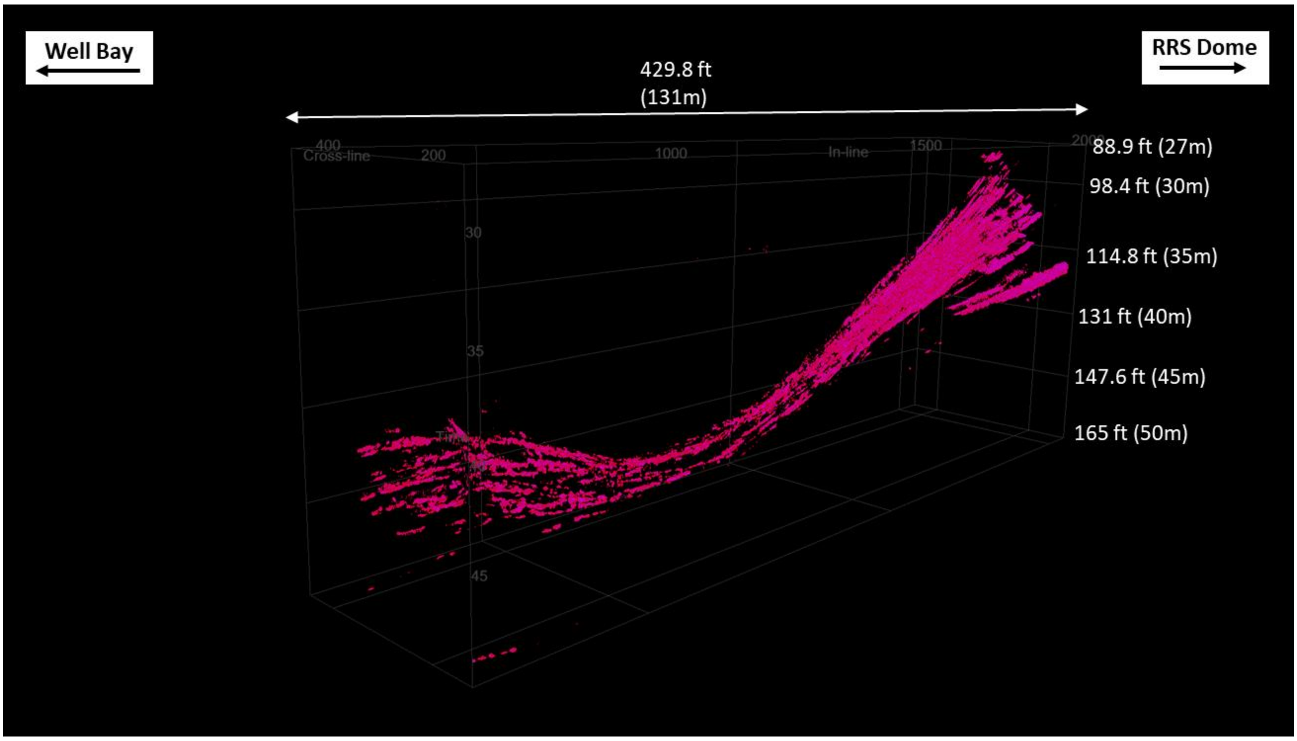


Figure 42 – Identified conductors as seen in the unified migrated volume.

The cross-section at Row 05 (Figure 50) exhibits a near-perfect circumference of the conductors with approximately eighteen (18) distinct conductor responses that are plainly seen enveloping faint traces of remaining inner conductors. The outer pipes would mask pipes sandwiched beneath by their numbers, composition, and sizes. Because of the tightness in this central bundle of conductors and circular delineation of the form observed, it suggests that the number and presence of all original conductors are contained. Figure 43 shows a cross-section along Row 05 with the conductor responses shown along the upper perimeter of the shaded region. The shaded region, which has the approximate dimensions of 39ft x 27ft (L x H), most-likely contains the remaining ten (10) conductors which are being masked by the tightly packed conductors on top. The area below the top of the shaded region provides ample space for the remaining ten (10) conductors (49.1 sqft), given that the area between the top of the conductors and geological basement is approximately 1053 sqft.

Sloping upwards from the central region to the active dome oil collector location, the conductors continue to be included with an uninterrupted smooth upward sloping trend, still following over the consolidated basement floor (Figure 46). The concentration of distinctly traversing conductors in the A and AP lines region does not show evidence of gas/oil emerging or percolating from deep in the lower geology underneath the conductors or in their vicinity. What is noticed are the three isolated locations previously mentioned at Sites AP0, AP01 and AP08 (Figure 47).

At these locations, narrow gas/oil upward moving vertical propagation of bubbles is released from possible minor fracturing or through wall conductor damage. The gas/oil vertical flow found at Site AP0 is particularly interesting as it is touching or inside the curtain region of the collector dome.

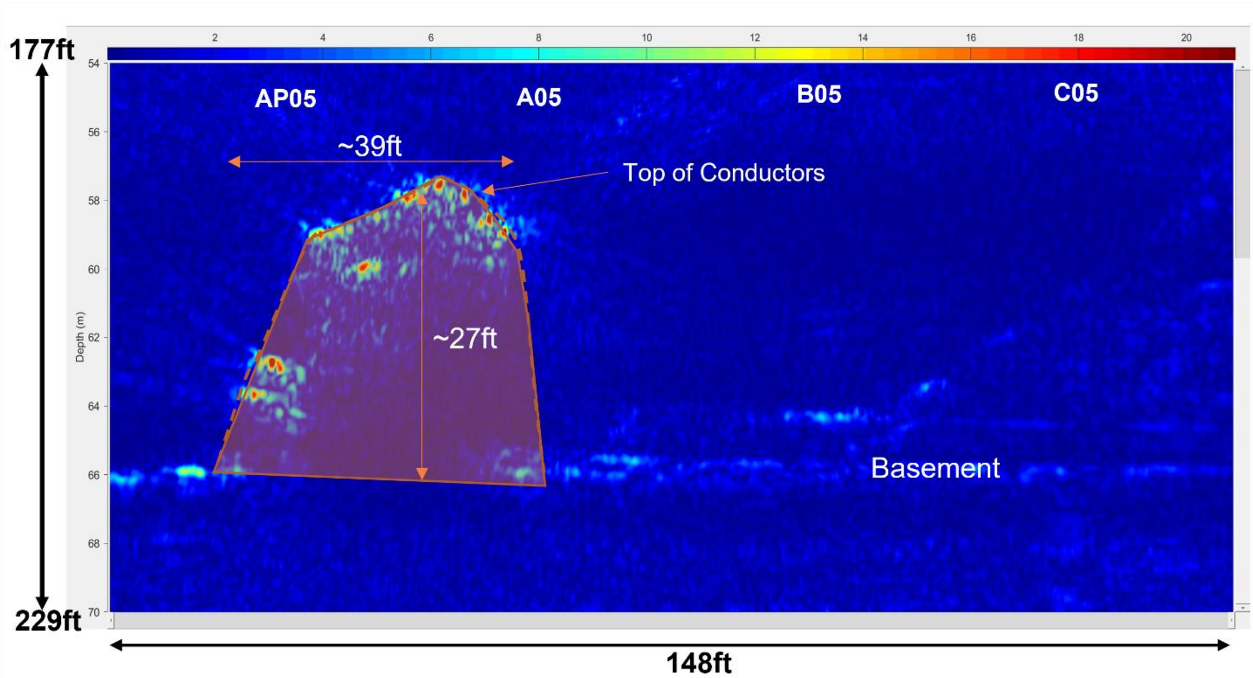


Figure 43 – Cross-section along Row 05 with the conductor responses shown along the perimeter of the shaded region. The shaded region, which has the approximate dimensions of 39ft x 27ft (L x H), most-likely contains the remaining ten (10) conductions which are being masked by the tightly packed conductors on top.

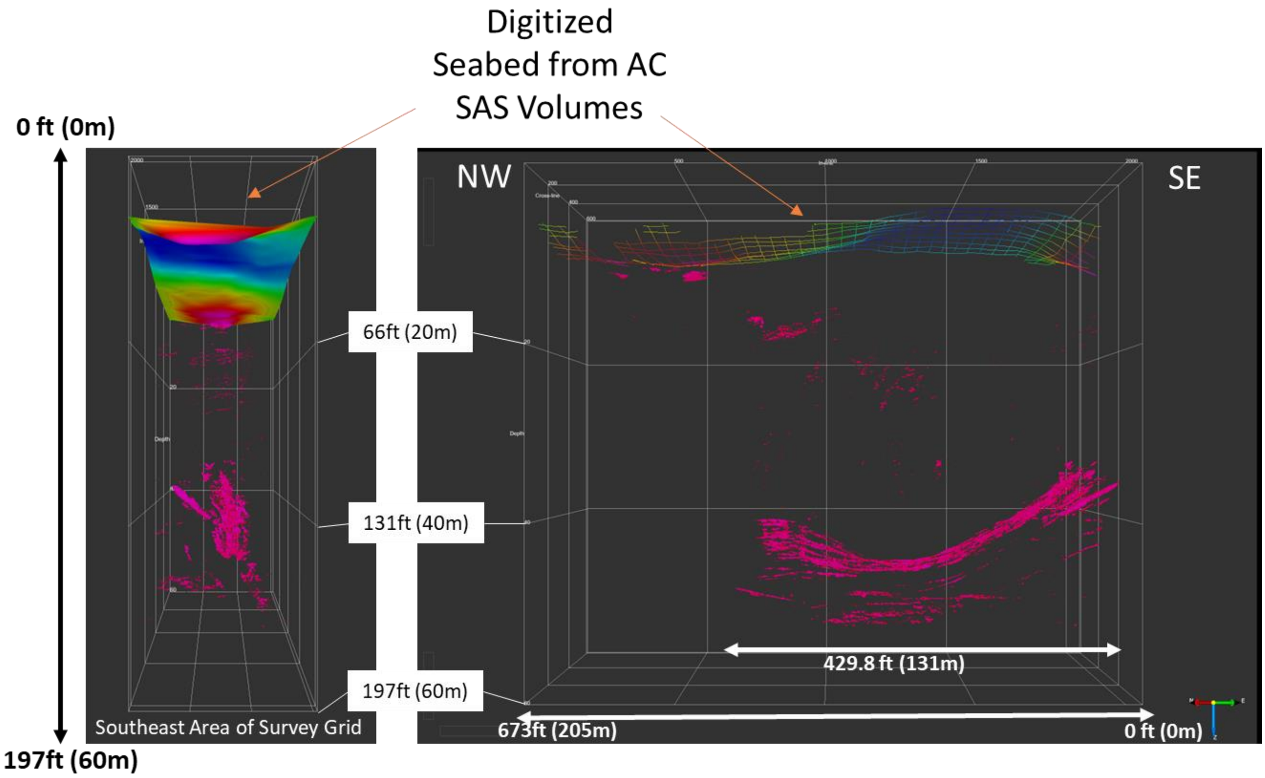


Figure 44 – 3-D volumetric view (Left image looking SE to NW and Right image looking SW to NE)) of the parametric data set with the digitized seabed overlaid.

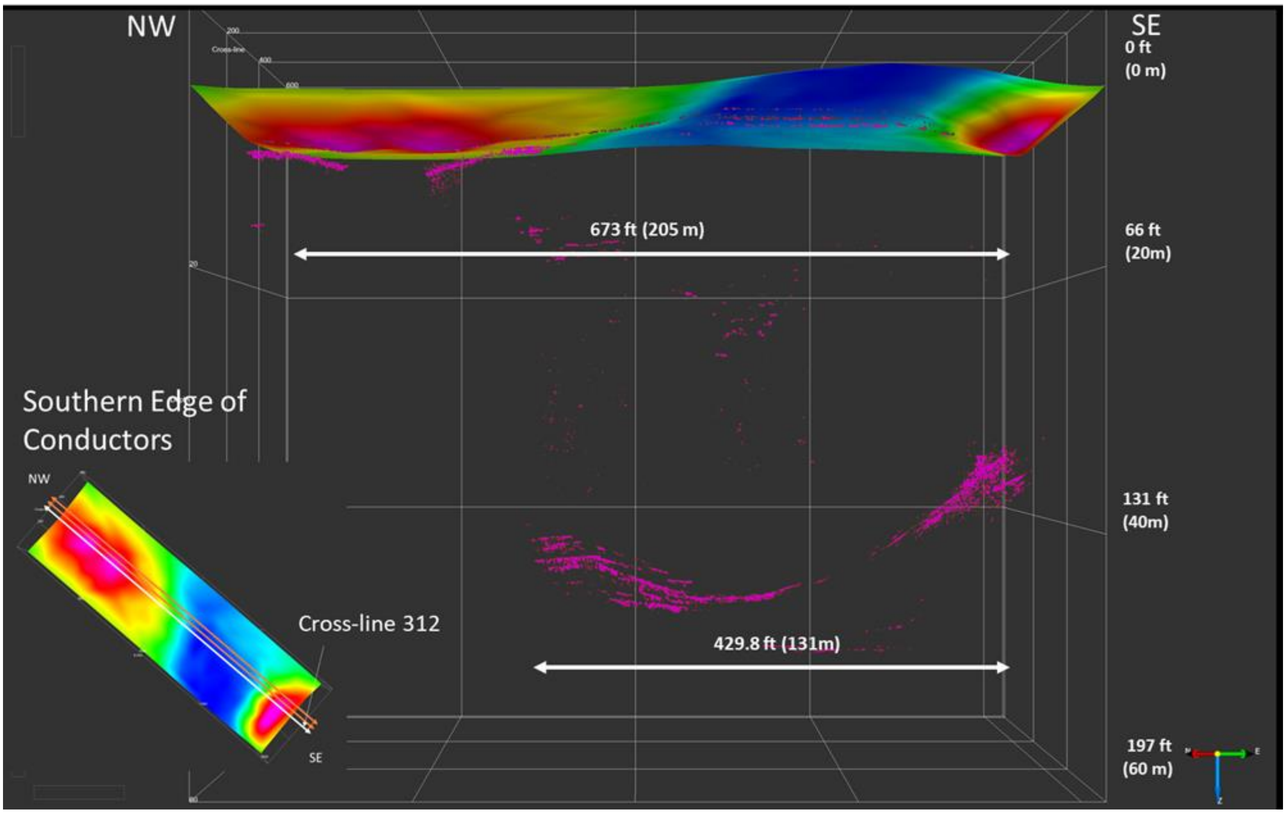


Figure 45 – Vertical section (NW to SE) of the parametric data showing the Southern edge of the conductors.

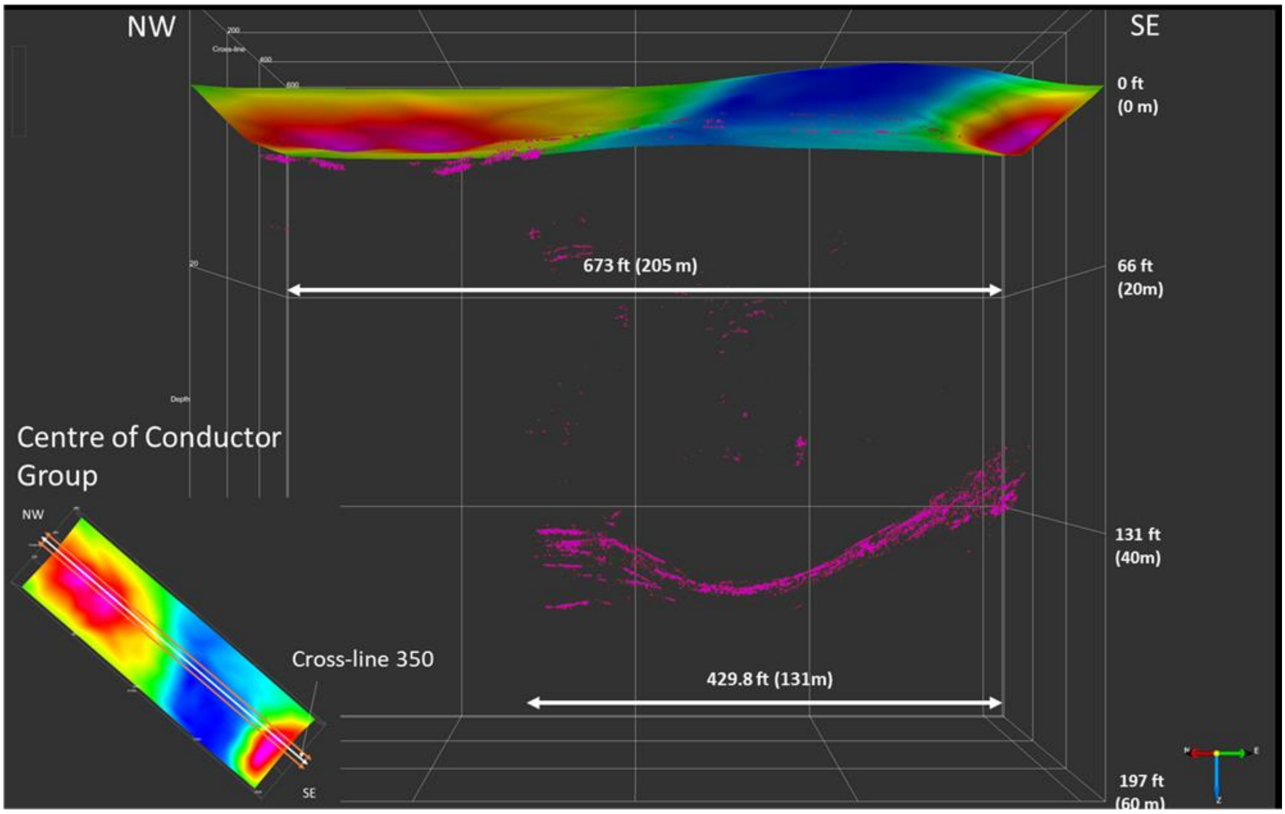


Figure 46 – Vertical section (NW to SE) of the parametric data showing the centre of the conductor group.

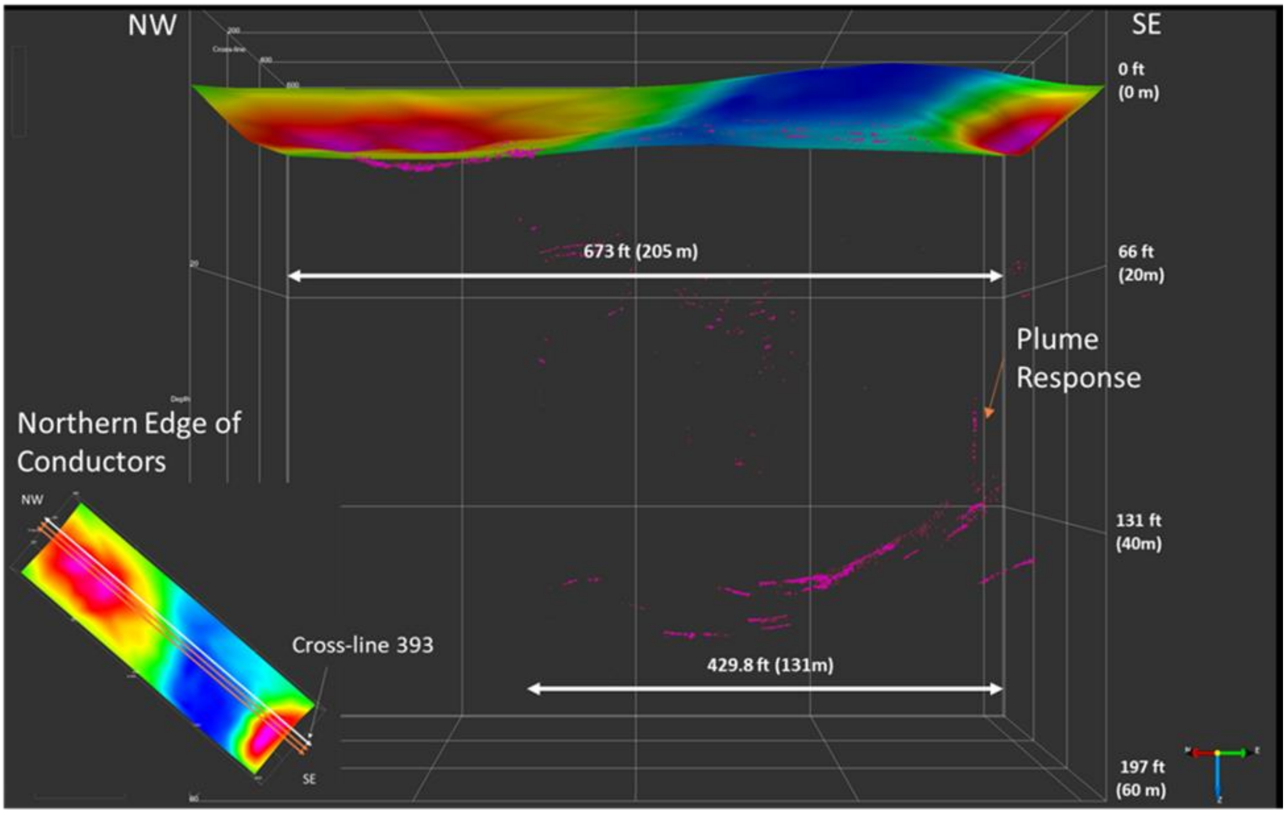


Figure 47 – Vertical section (NW to SE) of the parametric data showing the Northern edge of the conductors. Near the dome, the image shows the presence of oil/gas in the form of a plume.

In the upper region of the sub-seabed, approximately in the upper sixty feet (60ft) approaching the seafloor, the composition is characterized by an unconsolidated chaotic nature, at times blocky, associated with the mudslide flow event (Figure 51). In this region, clay-based linear diffractors are present within a weak non-cohesive sediment matrix. Close examination of the reflecting responses of the clay strata and segmented forms (as described in the anomaly report and listing) supports an assignment of undrained shear strengths associated with a very soft fluid state at the mudline (approaching zero (0) kPa) to soft denser clay in the strata of typically expected 12kPa to 25kPa values. The basement geology, with its very well delineated form and upward slope to the SE, supports the overall mass of the conductors from collector dome at Row 0 to the Row 11 (Figure 48 to Figure 53). The acoustic response from this basement would suggest a firm soil state holding undrained shear strengths of approximately 25kPa (potentially as high as 50kPa). This concords with the general soil reporting of the region by Fugro in 2007. It is also in step with Mr Ed Clukey's (GeoMax) communications to the PanGeo team in 2022 (see Section 3.1) regarding the AC site investigations soil conditions we could encounter.

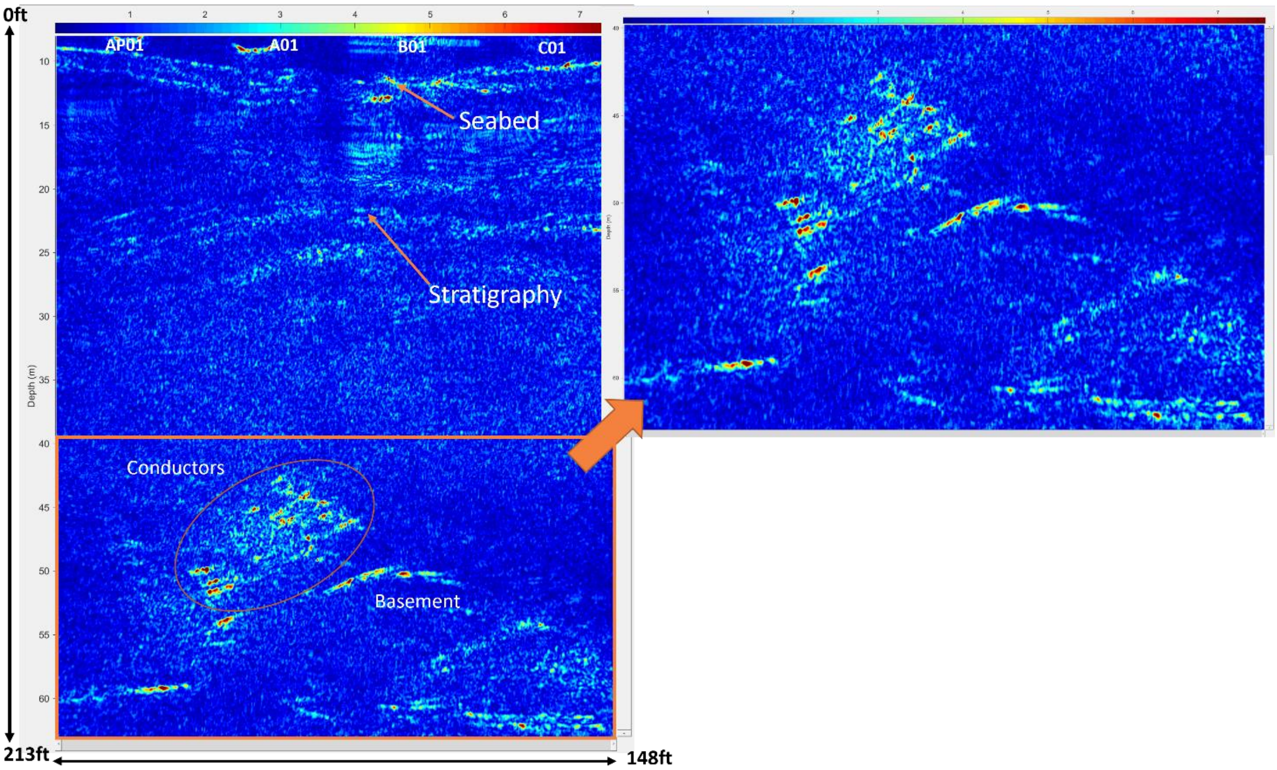


Figure 48 – Vertical section across Row 01. Coherent sedimentary layering in the upper 100ft is seen in the profile across Row 01 with a strong basement reflector.

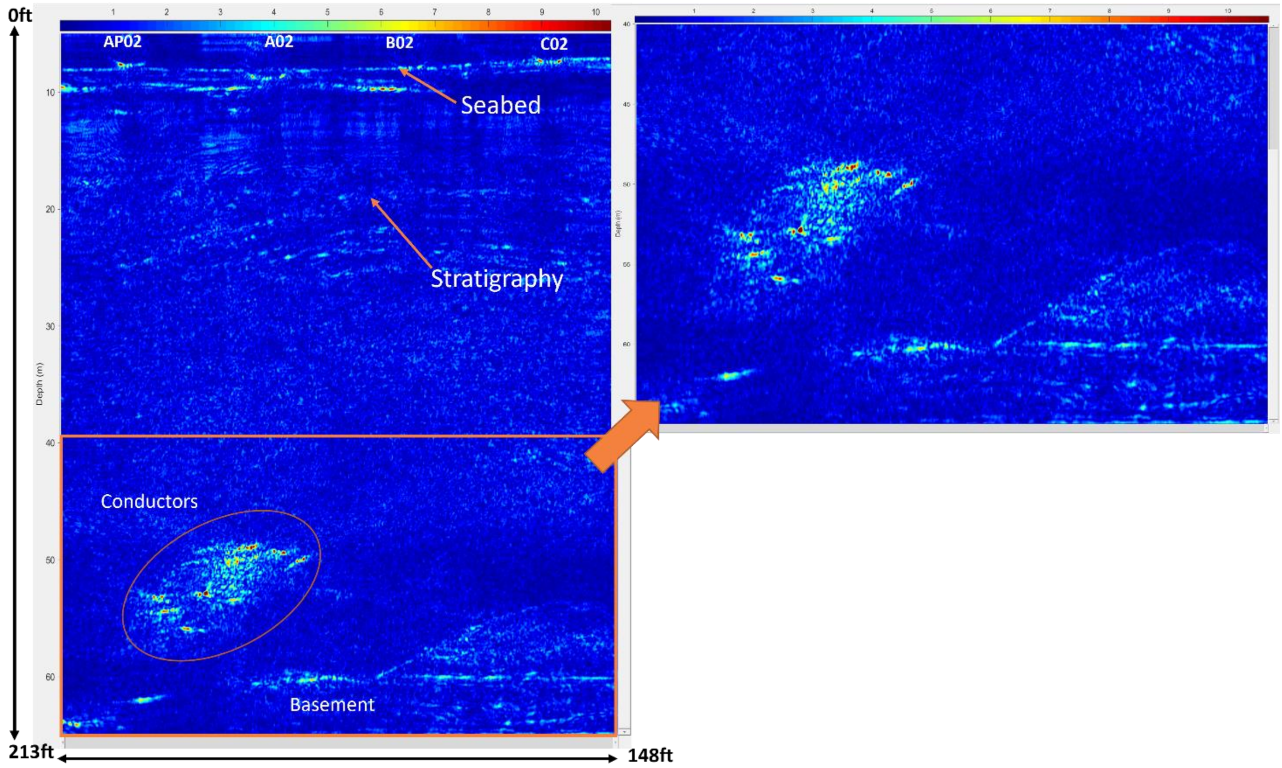


Figure 49 – Vertical section across Row 02. Coherent sedimentary layering in the upper 100ft is seen in the profile across Row 02 with a strong basement reflector.

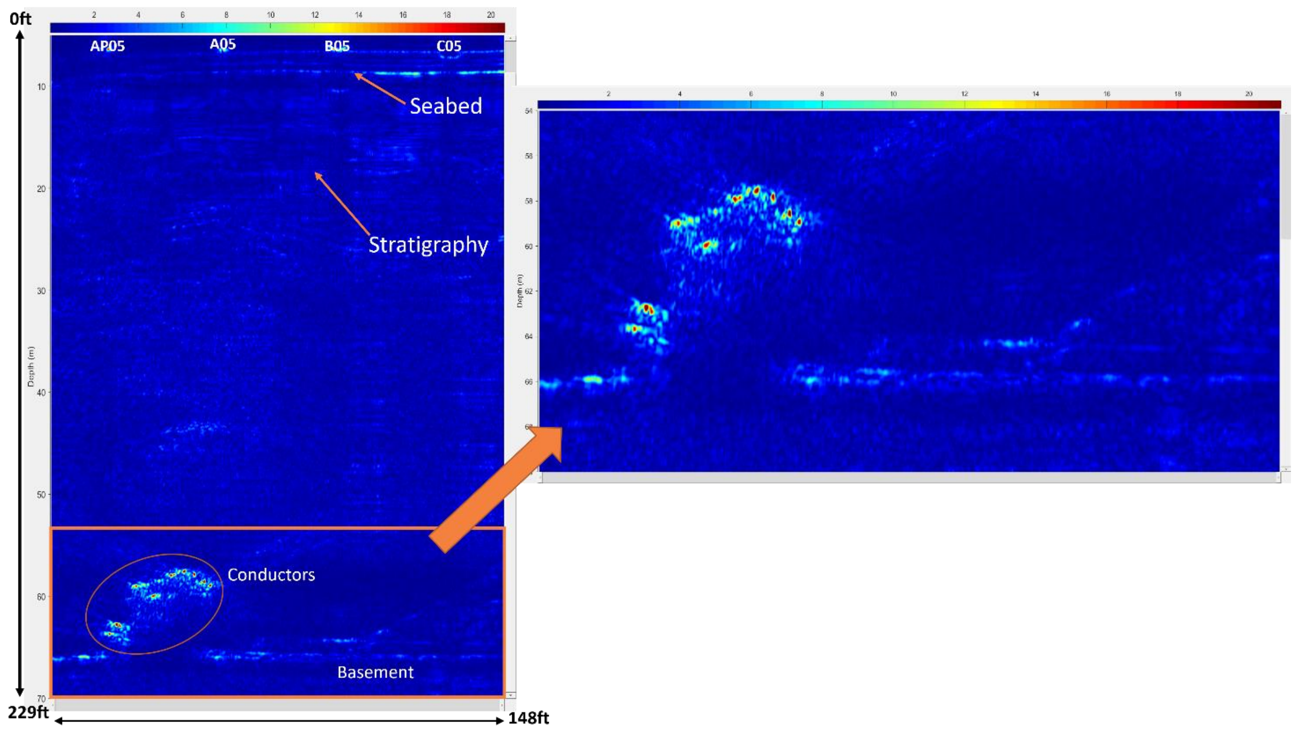


Figure 50 – Vertical section across Row 05. Faint coherent sedimentary layering in the upper 100ft is seen in the profile across Row 05 with a strong basement reflector.

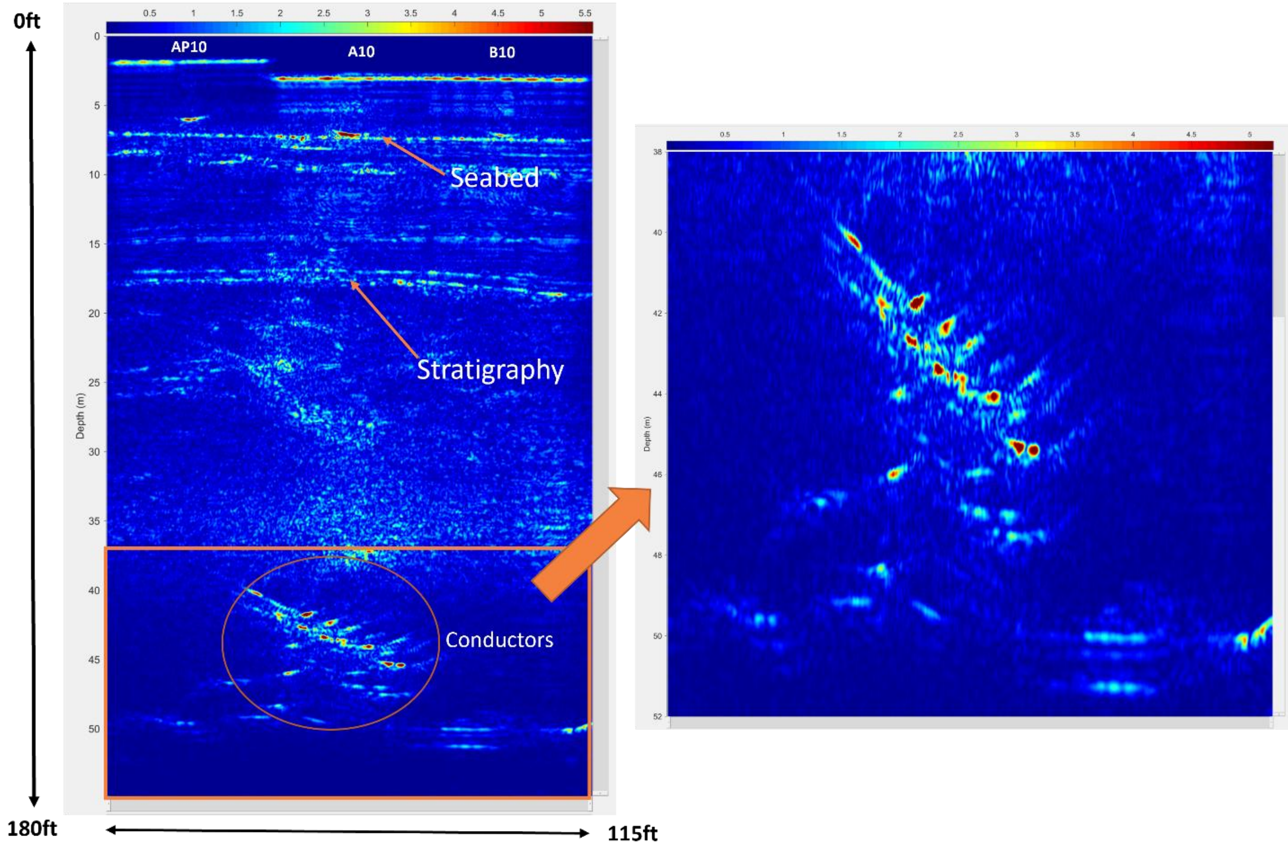


Figure 51 – Vertical section across Row 10. Strongly coherent sedimentary layering in the upper 100ft is seen in the profile across Row 10 with a strong basement reflector.

Through an in-depth analysis of the reflectivity variance observed near the upper 10ft of the mudline zone, distinct high-intensity signatures were noted around Sites A11, A12 A13, which are strong indications of suspended or entrapped gas in the weakly consolidated clay sediment. As stated previously, Acoustic Cores at Sites A14 and A15 were not acquired as the suction piles could not be supported at these locations. However, the near mudline high reflectivity at Sites A13, A12 and A11 (Figure 53) and the fact that when suction piles were pushed at these sites, gas was released for a short time indicate that we had a strong presence of gas at the surface but also a lower into the sub-seabed. This presence would mask our acoustic returns. Of particular note, the sedimentary strata captured in the upper 60ft leading NE to Row 11 abruptly disappear like the conductors at Sites A11 and AP11 terminate mid-core. Figure 52 and Figure 53 are vertical sections through Sites AP11, A11, and B11, with a section taken in the Southeast region of the volume (Figure 52) and a second section (Figure 53), taken in the Northwest region of the volume, where shallow gas is present. Figure 52 has strong reflectivity in the upper 100ft of the sedimentary column, whereas in Figure 53, the reflectivity becomes weak as the presence of gas causes a high amplitude response to occur roughly 10ft below the seabed and mutes the response of the lower stratigraphy.

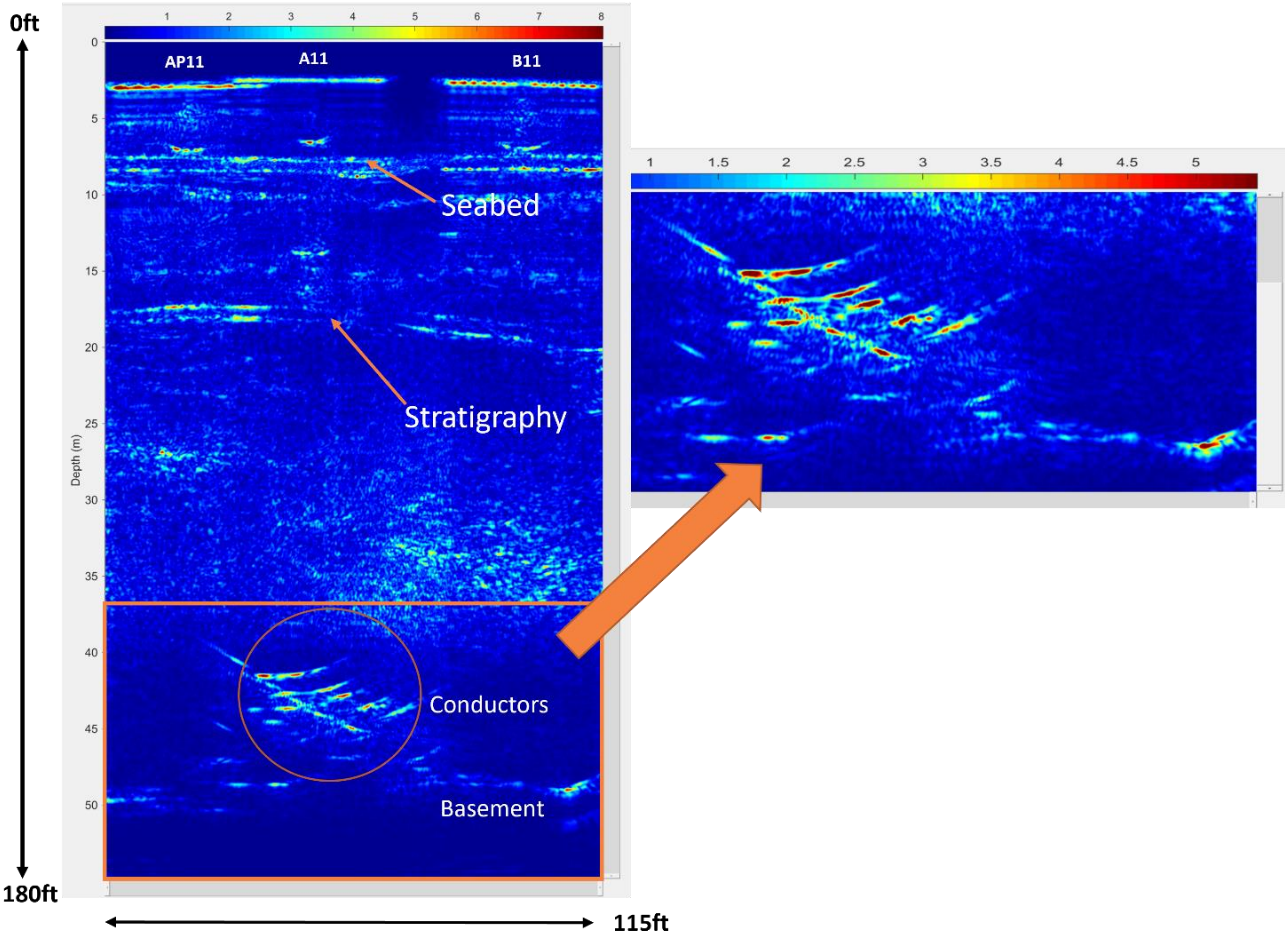


Figure 52 – Vertical section across Row 11. Strongly coherent sedimentary layering in the upper 100ft is seen in the profile across Row 11 with a strong basement reflector. Further to the NW (Rows 11 to 17), the soil becomes increasingly saturated with gas.

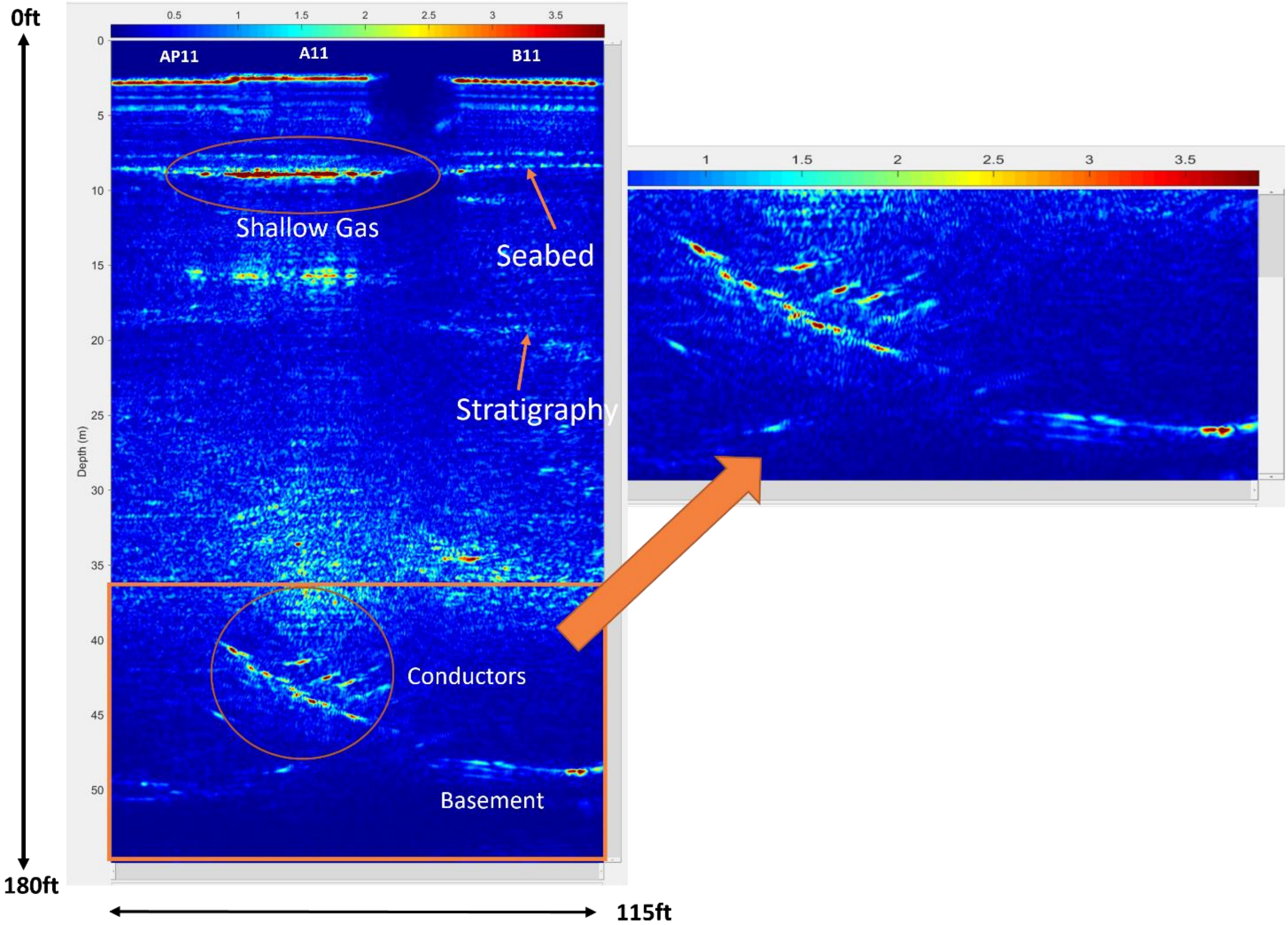


Figure 53 – Vertical section across Row 11. Weak acoustic response from sedimentary layering in the upper 100ft is seen in the profile across Row 11 with a strong basement reflector. The weak acoustic response is due to the presence of gas across Site A11 and, to a lesser extent, Site AP11.

Conversely, we see the return of this strata at Sites A17 and A16 (Figure 54), with a faint hint of its presence remaining as we approach Sites A12 and AP12, forming an indefinite curved presence back to Site A10. Since the solid upper intensity at the mudline starts midway between Sites A11 and AP11, this also coincides with the sudden termination indicating we have an acoustic blanking present. Hence from our observations, we do not believe the conductors are fractured at Sites A11 and AP11. Still, as suggested by the separating rise of the conductors before the truncation and appearing to have a slight downward end direction, the conductors could be expected to have a rapid bending downward sloped path toward the vertical around Sites A14 and A13. The fact that we have rising linear gas percolating up along Sites AP08, AP01 and AP0 (Figure 47) from the conductors and that the conductors are intact through their observed length (ending precisely at the collector dome where at least four flowing plumes are being held) would indicate that the conductors have oil and gas still flowing through them. We have seen no evidence of discontinuous debris forming fractured, chaotic structural members down to our imaging depth of 200ft.

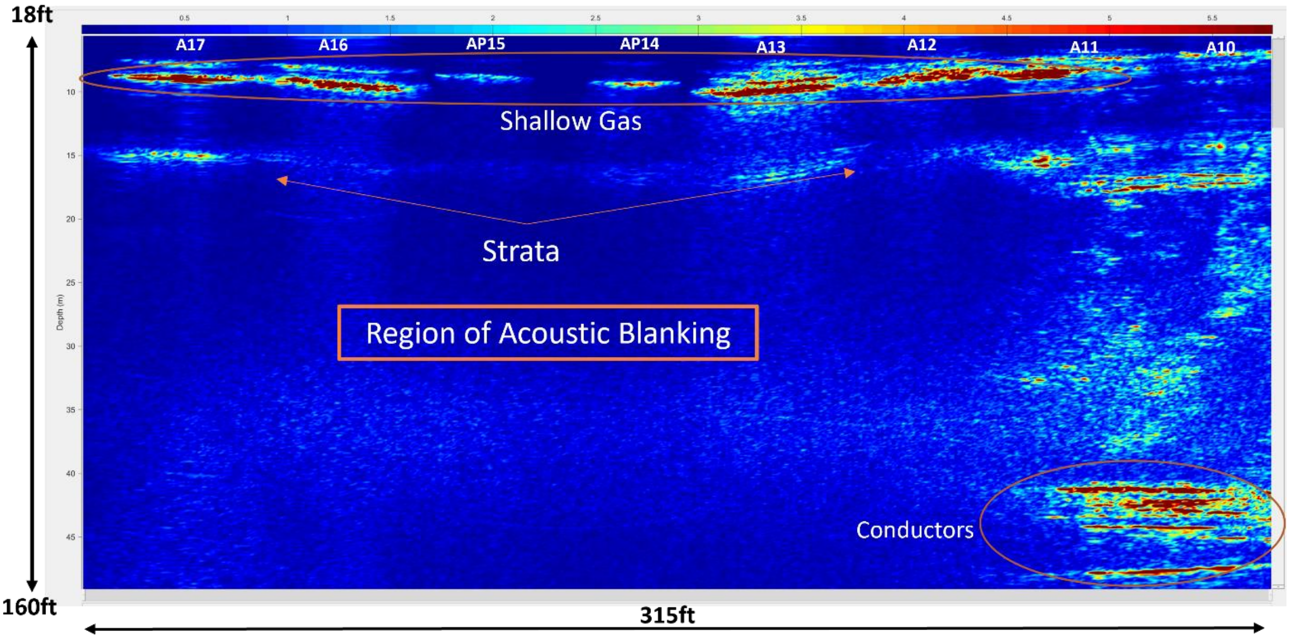


Figure 54 – Vertical profile across Sites A17 (NW region of survey area) to A10 (SE region of survey area) showing the presence of gas in the upper several ft of the sedimentary column which causes acoustic blanking across Sites A17 to A11.

6.3.3.1 Overall Description of Linear Features

Table 14 – Linear feature end point summary table for all sixty-three (63) MC-20 survey sites, indicating the total length of each linear feature. Other details provided for each end point include feature ID, positions, depth BML, feature diameter and associated uncertainty. The sites are presented in the following survey-line order: AP, A, B, C, BP, and X, whereby sites in which JYG-cross data was acquired in addition to SAS are marked with an Asterix (*).

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
AP0	AP0AC1-PARA-L001-03	1010644.51	10506696.15	109.64	52.02	51	5
AP0	AP0AC1-PARA-L002-03	1010648.40	10506702.33	110.77	49.22	55	6
AP0	AP0AC1-PARA-L003-03	1010649.74	10506708.10	100.12	46.53	39	4
AP0	AP0AC1-PARA-L004-03	1010655.47	10506703.92	101.37	22.46	39	4
AP0	AP0AC1-PARA-L005-04	1010653.72	10506706.24	104.61	24.78	51	5
AP0	AP0AC1-PARA-L006-04	1010648.23	10506707.69	109.44	30.92	55	6
AP01	AP01AC1-HF-L001-23	1010645.14	10506741.50	40.68	38.57	22	2
AP01	AP01AC1-HF-L002-15	1010648.77	10506724.90	48.39	28.23	20	2
AP01	AP01AC1-HF-L003-07	1010611.27	10506730.27	102.36	21.17	55	6
AP01	AP01AC1-HF-L004-14	1010623.47	10506726.38	112.78	18.56	59	6
AP01	AP01AC1-HF-L005-13	1010615.48	10506733.78	115.18	25.89	59	6

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
AP01	AP01AC1-HF-L006-12	1010611.84	10506741.04	116.31	36.54	63	6
AP01	AP01AC1-HF-L007-09	1010610.51	10506727.79	118.93	27.57	63	6
AP01	AP01AC1-HF-L008-18	1010627.31	10506723.24	96.94	9.50	39	4
AP02	AP02AC1-PARA-L001-05	1010622.51	10506749.20	41.50	6.76	39.37	4
AP02	AP02AC1-PARA-L002-08	1010587.99	10506758.36	119.26	24.01	27.56	3
AP02	AP02AC1-PARA-L003-05	1010605.68	10506750.33	122.21	16.37	62.99	6
AP02	AP02AC1-PARA-L004-04	1010590.54	10506769.65	127.30	11.55	110.24	11
AP02	AP02AC1-PARA-L005-04	1010608.97	10506752.69	143.54	4.81	31.50	3
AP02	AP02AC1-PARA-L006-07	1010602.88	10506775.03	145.83	15.99	78.74	8
AP02	AP02AC1-PARA-L007-06	1010605.99	10506762.36	145.34	7.64	47.24	5
AP02	AP02AC1-PARA-L008-06	1010611.34	10506773.63	145.67	11.43	51.18	5
AP02	AP02AC1-PARA-L009-05	1010596.28	10506771.78	151.08	23.71	23.62	2
AP02	AP02AC1-PARA-L010-06	1010600.45	10506772.39	151.08	19.56	35.43	4
AP02	AP02AC1-PARA-L011-11	1010587.71	10506752.90	118.60	25.31	62.99	6
AP03	AP03AC1-PARA-L001-08	1010586.36	10506771.93	137.14	18.52	40.55	4
AP03	AP03AC1-PARA-L002-11	1010584.11	10506769.73	136.15	19.98	27.56	3
AP03	AP03AC1-PARA-L003-10	1010591.73	10506765.11	134.84	23.60	61.02	6
AP03	AP03AC1-PARA-L004-08	1010594.38	10506763.97	131.40	22.31	59.06	6
AP03	AP03AC1-PARA-L005-09	1010565.67	10506778.15	125.82	17.12	108.27	11
AP03	AP03AC1-PARA-L006-09	1010585.19	10506757.91	121.88	19.77	96.85	10
AP03	AP03AC1-PARA-L007-06	1010588.56	10506787.65	49.38	10.39	49.61	5
AP03	AP03AC1-PARA-L008-06	1010587.85	10506770.27	52.33	4.71	33.07	3
AP03	AP03AC1-PARA-L009-08	1010588.00	10506780.06	144.19	15.54	18.11	2
AP03	AP03AC1-PARA-L010-10	1010566.50	10506795.55	148.46	29.38	78.74	8
AP03	AP03AC1-PARA-L011-09	1010562.52	10506789.28	134.30	29.71	49.61	5
AP04	AP04AC1-HF-L001-03	1010528.11	10506800.93	130.20	35.19	55	6
AP04	AP04AC1-PARA-L002-03	1010529.00	10506807.77	131.47	42.58	47	5
AP04	AP04AC1-PARA-L003-03	1010535.07	10506789.17	130.64	19.29	43	4

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
AP04	AP04AC1-HF-L004-03	1010547.49	10506797.68	140.06	21.96	47	5
AP04	AP04AC1-PARA-L005-03	1010537.19	10506813.74	142.79	41.15	51	5
AP04	AP04AC1-HF-L006-03	1010554.06	10506797.59	144.02	17.90	59	6
AP04	AP04AC1-HF-L007-03	1010569.43	10506797.85	152.89	38.55	87	9
AP05	AP05AC1-HF-L001-10	1010526.33	10506843.68	55.30	35.85	18	2
AP05	AP05AC1-HF-L002-09	1010496.58	10506825.75	134.80	32.23	28	3
AP05	AP05AC1-HF-L003-08	1010496.53	10506827.02	138.74	34.01	28	3
AP05	AP05AC1-HF-L004-09	1010497.30	10506832.12	146.06	37.23	30	3
AP05	AP05AC1-HF-L005-09	1010499.78	10506833.40	146.18	37.86	28	3
AP05	AP05AC1-HF-L006-07	1010497.72	10506835.94	149.20	42.75	28	3
AP05	AP05AC1-HF-L007-09	1010534.81	10506812.41	153.61	45.28	157	16
AP05	AP05AC1-HF-L008-08	1010540.63	10506822.55	154.26	39.90	33	3
AP05	AP05AC1-HF-L009-11	1010507.34	10506825.82	124.98	59.19	35	4
AP06	AP06AC1-HF-L001-03	1010501.65	10506848.88	53.13	29.89	43	4
AP06	AP06AC1-HF-L002-03	1010496.38	10506827.00	140.26	32.19	40	4
AP06	AP06AC1-HF-L003-03	1010471.82	10506848.07	145.83	33.59	29	3
AP06	AP06AC1-HF-L004-03	1010502.75	10506829.21	147.64	38.89	37	4
AP06	AP06AC1-HF-L005-03	1010476.65	10506849.85	149.87	34.30	35	4
AP07	AP07AC1-PARA-L001-09	1010481.96	10506864.16	45.11	29.86	31.50	3
AP07	AP07AC1-PARA-L002-06	1010480.77	10506891.66	97.77	15.09	27.56	3
AP07	AP07AC1-PARA-L003-06	1010450.32	10506865.14	147.47	21.33	39.37	4
AP07	AP07AC1-PARA-L004-06	1010450.01	10506876.03	148.13	27.23	39.37	4
AP07	AP07AC1-PARA-L005-07	1010457.30	10506885.04	148.62	25.26	31.50	3
AP08	AP08AC1-HF-L001-07	1010436.07	10506912.60	53.48	31.90	41	4
AP08	AP08AC1-HF-L002-15	1010443.40	10506882.36	135.94	66.24	59	6
AP08	AP08AC1-PARA-L003-01	1010416.88	10506887.93	130.58	0.00	39	4
AP08	AP08AC1-PARA-L003-02	1010421.55	10506884.12	130.58	6.03	39	4

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
AP08	AP08AC1-PARA-L003-03	1010424.23	10506882.24	130.74	9.30	39	4
AP08	AP08AC1-PARA-L003-04	1010427.13	10506880.27	130.74	12.80	39	4
AP08	AP08AC1-PARA-L003-05	1010430.14	10506878.32	130.91	16.39	39	4
AP08	AP08AC1-PARA-L003-06	1010433.53	10506876.59	130.91	20.20	39	4
AP08	AP08AC1-PARA-L003-07	1010439.15	10506874.61	130.91	26.15	39	4
AP08	AP08AC1-PARA-L003-08	1010441.56	10506874.00	130.91	28.64	39	4
AP08	AP08AC1-HF-L004-09	1010416.14	10506901.31	152.89	41.52	47	5
AP08	AP08AC1-HF-L005-07	1010442.24	10506909.35	153.05	32.95	39	4
AP08	AP08AC1-HF-L006-06	1010436.62	10506911.58	153.05	33.54	39	4
AP08	AP08AC1-HF-L007-06	1010419.43	10506888.10	153.38	24.19	30	3
AP08	AP08AC1-HF-L008-09	1010452.22	10506898.93	137.12	68.09	55	6
AP09	AP09AC1-HF-L001-04	1010403.23	10506936.41	34.61	20.88	33	3
AP09	AP09AC1-PARA-L002-04	1010420.98	10506933.77	46.26	36.79	39	4
AP09	AP09AC1-HF-L003-04	1010418.83	10506939.72	50.20	34.61	31	3
AP09	AP09AC1-HF-L004-04	1010409.75	10506906.35	138.97	28.91	37	4
AP09	AP09AC1-HF-L005-05	1010424.74	10506905.83	145.05	38.47	46	5
AP09	AP09AC1-HF-L006-03	1010424.90	10506906.05	164.86	42.70	59	6
AP10	AP10AC1-HF-L001-03	1010384.61	10506935.61	134.02	32.31	43	4
AP10	AP10AC1-HF-L002-04	1010396.16	10506953.32	142.39	30.69	43	4
AP10	AP10AC1-HF-L003-04	1010393.01	10506930.43	142.21	34.05	43	4
AP10	AP10AC1-PARA-L004-03	1010385.11	10506949.67	143.54	17.42	43	4
AP10	AP10AC1-PARA-L005-03	1010395.71	10506944.85	145.01	37.54	33	3
AP11	AP11AC1-PARA-L001-04	1010363.79	10506986.03	54.35	39.58	30	3
AP11	AP11AC1-HF-L002-03	1010341.67	10506966.20	132.22	30.01	59	6
AP11	AP11AC1-HF-L003-03	1010333.01	10506955.64	137.73	24.31	55	6
AP11	AP11AC1-HF-L004-03	1010358.50	10506975.03	138.29	21.39	33	3
AP11	AP11AC1-PARA-L005-04	1010342.87	10506961.40	142.01	27.93	47	5

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
A01	A01AC1-HF-L001-15	1010597.90	10506715.87	85.55	38.24	16	2
A01	A01AC1-HF-L002-09	1010603.01	10506709.75	90.99	30.39	28	3
A01	A01AC1-HF-L003-08	1010600.04	10506719.95	96.10	39.77	24	2
A01	A01AC1-HF-L004-10	1010594.16	10506722.38	101.13	42.58	26	3
A01	A01AC1-HF-L005-09	1010616.80	10506721.35	103.34	33.44	24	2
A01	A01AC1-HF-L006-01	1010609.92	10506683.27	100.64	0.00	30	3
A01	A01AC1-HF-L006-02	1010607.06	10506689.90	101.89	7.22	30	3
A01	A01AC1-HF-L006-08	1010596.68	10506713.93	105.85	33.40	30	3
A02	A02AC1-HF-L001-03	1010590.26	10506736.31	105.97	23.07	43	4
A02	A02AC1-PARA-L002-03	1010572.26	10506742.91	110.24	42.29	40	4
A02	A02AC1-PARA-L003-03	1010574.70	10506746.37	109.71	41.79	42	4
A02	A02AC1-PARA-L004-03	1010568.02	10506743.22	112.09	45.11	35	4
A02	A02AC1-PARA-L005-03	1010584.14	10506747.60	112.79	19.51	47	5
A03	A03AC1-PARA-L001-07	1010560.60	10506761.73	44.78	36.19	36	4
A03	A03AC1-HF-L002-06	1010559.50	10506766.83	55.61	31.25	24	2
A03	A03AC1-PARA-L003-04	1010557.34	10506748.63	67.26	18.87	74	7
A03	A03AC1-HF-L004-07	1010567.27	10506763.23	74.15	37.83	19	2
A03	A03AC1-HF-L005-07	1010568.41	10506748.44	79.72	24.87	18	2
A03	A03AC1-HF-L006-11	1010559.51	10506768.76	118.93	31.59	122	12
A03	A03AC1-HF-L007-03	1010564.92	10506768.72	121.06	17.25	49	5
A03	A03AC1-PARA-L008-07	1010541.33	10506761.60	146.16	38.47	201	20
A03	A03AC1-PARA-L009-09	1010569.33	10506736.01	152.23	44.47	236	24
A04	A04AC1-PARA-L001-03	1010534.21	10506791.74	41.99	35.19	51	5
A04	A04AC1-PARA-L002-04	1010527.48	10506788.27	43.31	24.57	27	3
A04	A04AC1-PARA-L003-05	1010538.15	10506779.10	74.97	31.38	35	4
A04	A04AC1-PARA-L004-03	1010529.73	10506754.76	146.98	38.85	205	20
A04	A04AC1-PARA-L005-04	1010535.55	10506758.81	152.39	43.78	239	24

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
A05	A05AC1-HF-L001-06	1010508.60	10506796.62	26.60	10.40	12	1
A05	A05AC1-HF-L002-05	1010507.89	10506801.35	38.90	14.20	20	2
A05	A05AC1-HF-L003-05	1010511.51	10506804.34	52.70	25.90	44	4
A05	A05AC1-HF-L004-05	1010495.71	10506805.82	137.10	24.10	48	5
A05	A05AC1-PARA-L005-07	1010483.01	10506812.78	152.40	42.30	85	9
A05	A05AC1-PARA-L006-05	1010474.61	10506797.55	152.70	25.70	49	5
A05	A05AC1-PARA-L007-04	1010494.01	10506806.51	48.60	20.50	60	6
A05	A05AC1-PARA-L008-04	1010505.59	10506806.78	56.80	26.20	38	4
A05	A05AC1-PARA-L009-06	1010517.11	10506807.02	99.70	27.70	21	2
A05	A05AC1-PARA-L010-05	1010507.40	10506814.32	95.00	35.50	55	6
A06*	A06AC1-HF-L001-12	1010457.92	10506807.27	48.39	31.42	30	3
A06*	A06AC1-HF-L002-07	1010450.62	10506808.47	55.12	28.78	32	3
A06*	A06AC1-HF-L003-06	1010460.89	10506842.30	137.14	34.00	52	5
A06*	A06AC1-HF-L004-09	1010446.67	10506831.63	154.86	40.10	136	14
A07	A07AC1-HF-L001-06	1010443.49	10506826.13	36.37	25.85	12	1
A07	A07AC1-HF-L002-06	1010429.85	10506837.00	42.91	34.22	17	2
A07	A07AC1-HF-L003-05	1010440.57	10506835.83	53.64	27.21	29	3
A07	A07AC1-HF-L004-04	1010442.67	10506833.01	63.14	30.61	31	3
A07	A07AC1-HF-L005-07	1010433.67	10506842.99	69.09	25.95	59	6
A07	A07AC1-HF-L006-05	1010461.38	10506846.17	135.29	38.56	26	3
A07	A07AC1-HF-L007-07	1010459.09	10506857.02	136.61	24.92	24	2
A07	A07AC1-HF-L008-05	1010461.47	10506849.29	136.96	34.09	24	2
A07	A07AC1-HF-L009-07	1010453.73	10506845.81	138.43	34.39	26	3
A07	A07AC1-HF-L010-08	1010457.58	10506834.91	138.83	44.88	24	2
A07	A07AC1-HF-L011-06	1010459.15	10506837.60	138.83	44.49	24	2
A07	A07AC1-HF-L012-05	1010454.58	10506831.27	152.66	43.84	100	10
A08	A08AC1-PARA-L001-03	1010432.91	10506865.71	46.75	28.76	35	4
A08	A08AC1-HF-L002-04	1010425.38	10506885.79	47.24	28.21	31	3

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A08	A08AC1-HF-L003-03	1010402.07	10506862.60	47.79	34.80	31	3
A08	A08AC1-PARA-L004-03	1010411.80	10506861.49	48.57	26.79	35	4
A08	A08AC1-HF-L005-03	1010411.68	10506857.40	49.36	26.07	29	3
A08	A08AC1-HF-L006-03	1010418.29	10506852.87	50.61	21.36	34	3
A08	A08AC1-PARA-L007-02	1010411.85	10506854.07	51.43	16.59	28	3
A08	A08AC1-PARA-L008-04	1010408.01	10506852.85	54.46	29.52	39	4
A08	A08AC1-PARA-L009-03	1010431.15	10506873.34	130.96	33.72	50	5
A08	A08AC1-PARA-L010-05	1010427.15	10506880.00	128.61	22.47	33	3
A08	A08AC1-PARA-L011-02	1010431.92	10506868.38	131.73	33.08	46	5
A08	A08AC1-PARA-L012-04	1010427.49	10506865.77	133.64	36.88	47	5
A08	A08AC1-PARA-L013-05	1010424.17	10506861.70	135.10	37.35	37	4
A08	A08AC1-PARA-L014-04	1010423.20	10506859.41	134.82	37.95	42	4
A08	A08AC1-PARA-L015-05	1010425.04	10506865.61	136.51	35.71	39	4
A08	A08AC1-PARA-L016-04	1010425.19	10506865.25	137.65	36.05	46	5
A08	A08AC1-PARA-L017-04	1010422.86	10506866.94	134.68	32.89	25	2
A08	A08AC1-LF-L018-03	1010425.68	10506865.39	139.93	33.96	59	6
A08	A08AC1-PARA-L019-03	1010425.48	10506854.35	149.61	40.93	43	4
A08	A08AC1-PARA-L020-03	1010420.95	10506859.70	162.73	35.10	61	6
A09	A09AC1-PARA-L001-06	1010395.27	10506904.04	120.20	20.17	37	4
A09	A09AC1-HF-L002-06	1010403.14	10506892.31	124.22	36.02	39	4
A09	A09AC1-HF-L003-05	1010400.99	10506888.16	125.43	38.60	31	3
A09	A09AC1-HF-L004-06	1010399.44	10506884.36	128.21	40.56	31	3
A09	A09AC1-HF-L005-05	1010398.73	10506879.39	130.11	42.67	35	4
A09	A09AC1-HF-L006-06	1010397.58	10506874.92	130.83	42.84	33	3
A09	A09AC1-HF-L007-05	1010405.60	10506895.47	129.68	33.67	26	3
A09	A09AC1-HF-L008-05	1010401.38	10506880.24	134.42	44.45	54	5
A09	A09AC1-HF-L009-05	1010397.41	10506877.60	136.41	42.29	39	4
A09	A09AC1-HF-L010-04	1010394.61	10506872.89	146.98	36.09	46	5

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A10	A10AC1-PARA-L001-05	1010363.35	10506909.69	131.10	33.30	54	5
A10	A10AC1-PARA-L002-06	1010334.54	10506918.66	126.50	33.00	30	3
A10	A10AC1-PARA-L003-04	1010362.54	10506925.84	125.20	11.10	24	2
A10	A10AC1-PARA-L004-03	1010364.47	10506929.02	123.50	16.40	30	3
A10	A10AC1-PARA-L005-03	1010346.92	10506914.22	122.00	16.70	40	4
A10	A10AC1-PARA-L006-05	1010370.99	10506917.02	117.50	26.90	38	4
A10	A10AC1-PARA-L007-04	1010369.53	10506928.56	113.40	19.70	31	3
A10	A10AC1-PARA-L008-07	1010351.15	10506937.39	116.80	33.80	35	4
A10	A10AC1-HF-L009-08	1010341.50	10506936.61	132.90	30.80	19	2
A10	A10AC1-PARA-L011-06	1010369.95	10506912.42	119.40	28.20	35	3
A11*	A11AC1-PARA-L001-03	1010337.50	10506942.78	49.38	9.14	24	2
A11*	A11AC1-PARA-L002-05	1010343.63	10506935.25	60.56	15.99	31	3
A11*	A11AC1-PARA-L003-04	1010354.11	10506945.94	106.96	35.34	118	12
A11*	A11AC1-PARA-L004-03	1010352.35	10506938.30	118.60	21.10	47	5
A11*	A11AC1-PARA-L005-04	1010341.87	10506927.05	118.60	17.01	31	3
A11*	A11AC1-PARA-L006-03	1010353.91	10506950.64	129.10	28.20	83	8
B01	B01AC1-PARA-L001-05	1010597.50	10506665.81	132.22	14.94	40.16	4
B02	B02AC1-HF-L001-03	1010570.87	10506704.88	37.57	28.28	24	2
B02	B02AC1-HF-L002-03	1010564.13	10506706.32	37.57	30.96	39	4
B02	B02AC1-HF-L003-03	1010562.18	10506706.85	135.66	17.26	45	5
B02	B02AC1-HF-L004-02	1010564.80	10506711.61	135.50	11.79	47	5
B03	B03AC1-HF-L001-03	1010526.69	10506742.68	52.33	28.16	25	3
B03	B03AC1-HF-L002-06	1010517.99	10506703.48	72.01	41.59	46	5
B03	B03AC1-HF-L003-04	1010528.01	10506714.48	137.37	18.69	32	3
B03	B03AC1-PARA-L004-03	1010533.42	10506729.39	142.79	23.36	51	5
B04	B04AC1-HF-L001-07	1010522.68	10506750.91	38.71	37.12	51	5

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
B04	B04AC1-HF-L002-06	1010522.77	10506750.03	41.67	37.76	87	9
B04	B04AC1-HF-L003-08	1010522.89	10506742.21	50.36	30.51	24	2
B04	B04AC1-HF-L004-11	1010522.71	10506750.41	74.97	40.68	39	4
B04	B04AC1-PARA-L005-06	1010521.59	10506753.66	96.46	42.77	79	8
B04	B04AC1-HF-L006-11	1010503.03	10506752.47	148.13	24.89	47	5
B04	B04AC1-HF-L007-07	1010501.27	10506766.65	149.93	35.87	138	14
B05	B05AC1-PARA-L001-04	1010464.64	10506748.88	29.20	42.26	55	6
B05	B05AC1-HF-L002-03	1010472.23	10506751.97	40.85	31.09	39	4
B05	B05AC1-HF-L003-04	1010478.52	10506785.38	53.97	36.95	30	3
B05	B05AC1-HF-L004-03	1010464.78	10506755.37	148.79	16.70	36	4
B05	B05AC1-HF-L005-03	1010460.45	10506765.30	152.67	31.84	39	4
B06	B06-PARA-L001-04	1010464.37	10506796.80	149.9	29.60	83	8
B06	B06-PARA-L002-06	1010454.19	10506786.65	150.9	30.80	43	4
B07	B07AC1-HF-L001-12	1010402.22	10506810.60	45.60	29.48	16	2
B07	B07AC1-HF-L002-11	1010398.85	10506814.41	50.69	30.03	41	4
B07	B07AC1-HF-L003-10	1010404.38	10506806.28	58.89	36.72	51	5
B07	B07AC1-HF-L004-07	1010427.36	10506807.84	62.01	21.16	43	4
B07	B07AC1-HF-L005-07	1010435.37	10506809.29	62.66	24.87	26	3
B07	B07AC1-HF-L006-08	1010405.84	10506812.60	71.69	30.99	41	4
B07	B07AC1-HF-L007-07	1010403.31	10506831.42	151.08	37.13	81	8
B07	B07AC1-HF-L008-08	1010392.10	10506821.65	150.75	40.74	211	21
B08	B08AC1-HF-L001-09	1010387.64	10506845.58	148.79	25.86	17	2
B08	B08AC1-PARA-L002-07	1010404.46	10506848.48	148.79	19.33	25	3
B09	B09AC1-HF-L001-10	1010354.30	3202495.65	27.90	35.00	41	4
B09	B09AC1-HF-L002-04	1010364.16	3202500.29	29.00	14.90	22	2
B09	B09AC1-HF-L003-07	1010355.23	3202497.03	30.30	24.50	28	3

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
B09	B09AC1-HF-L004-10	1010354.14	3202494.70	30.80	36.20	15	1
B09	B09AC1-HF-L005-10	1010364.90	3202494.71	37.70	25.10	22	2
B09	B09AC1-HF-L006-09	1010358.81	3202493.68	41.70	33.50	22	2
B09	B09AC1-HF-L007-08	1010369.63	3202504.32	31.70	31.30	15	1
B09	B09AC1-HF-L008-05	1010354.77	3202496.95	45.10	25.50	33	3
B09	B09AC1-PARA-L009-05	1010351.33	3202501.46	142.90	33.90	26	3
B10	B10AC1-HF-L001-10	1010338.36	10506870.25	141.08	34.54	30	3
B10	B10AC1-HF-L002-09	1010335.79	10506871.14	147.80	31.47	29	3
B11	B11AC1-PARA-L001-11	1010301.42	10506890.56	139.60	32.53	47.24	5
B11	B11AC1-PARA-L002-06	1010307.27	10506913.26	136.15	15.73	47.24	5
B11	B11AC1-PARA-L003-05	1010304.16	10506910.69	136.15	14.74	20.08	2
B11	B11AC1-PARA-L004-08	1010279.27	10506903.84	145.01	30.50	43.31	4
C01	C01AC1-HF-L001-08	1010577.25	10506656.56	32.15	39.98	93	9
C01	C01AC1-HF-L002-06	1010551.44	10506663.62	36.58	27.40	20	2
C01	C01AC1-HF-L003-06	1010572.07	10506654.78	41.34	35.19	22	2
C01	C01AC1-PARA-L004-10	1010538.06	10506652.62	112.53	44.69	24	2
C01	C01AC1-HF-L005-06	1010536.63	10506639.92	123.52	32.64	24	2
C01	C01AC1-HF-L006-07	1010580.46	10506646.99	133.86	43.13	28	3
C01	C01AC1-HF-L007-06	1010560.60	10506667.02	147.64	35.40	31	3
C02	C02AC1-HF-L001-006	1010544.93	10506679.89	29.04	34.87	142	14
C02	C02AC1-HF-L002-006	1010553.92	10506668.83	36.91	30.77	47	5
C02	C02AC1-HF-L003-007	1010550.53	10506676.47	39.70	34.61	49	5
C02	C02AC1-HF-L004-007	1010538.62	10506678.26	39.70	31.68	24	2
C02	C02AC1-HF-L005-007	1010549.80	10506678.13	42.81	38.33	85	8
C02	C02AC1-HF-L006-011	1010528.14	10506651.71	46.92	32.77	67	7
C02	C02AC1-HF-L007-001	1010547.74	10506649.61	118.44	0.00	30	3
C02	C02AC1-HF-L007-002	1010541.09	10506652.26	118.44	7.15	30	3

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
C02	C02AC1-HF-L007-003	1010535.00	10506655.21	118.60	13.93	30	3
C02	C02AC1-HF-L007-004	1010530.28	10506657.24	118.77	19.06	30	3
C02	C02AC1-HF-L007-005	1010524.20	10506660.46	118.93	25.94	30	3
C02	C02AC1-HF-L007-006	1010519.19	10506663.06	119.09	31.58	30	3
C02	C02AC1-HF-L007-007	1010515.91	10506664.72	119.26	35.26	30	3
C02	C02AC1-HF-L007-008	1010510.85	10506667.83	119.42	41.20	30	3
C02	C02AC1-HF-L008-008	1010508.58	10506665.77	119.91	37.76	26	3
C02	C02AC1-HF-L009-010	1010545.71	10506648.24	138.45	36.31	28	3
C03	C03AC1-PARA-L001-06	308000.68	3202453.32	40.95	2.00	0.4	2
C03	C03AC1-PARA-L002-07	1010496.03	10506705.21	128.90	33.10	47	5
C03	C03AC1-PARA-L003-04	1010500.04	10506687.22	129.10	18.70	20	2
C03	C03AC1-PARA-L004-05	1010487.35	10506680.61	121.70	28.20	28	3
C03	C03AC1-PARA-L005-09	1010514.68	10506707.21	67.10	33.50	31	3
C03	C03AC1-PARA-L006-09	1010503.05	10506699.98	64.10	17.10	16	2
C03	C03AC1-PARA-L007-09	1010524.58	10506703.74	61.20	31.20	20	2
C03	C03AC1-PARA-L008-04	1010497.46	10506700.34	55.60	16.70	28	3
C03	C03AC1-PARA-L009-08	1010514.74	3202451.32	48.90	33.50	24	2
C03	C03AC1-PARA-L010-06	1010515.23	3202449.41	46.10	27.20	16	2
C04*	C04AC1-PARA-L001-08	1010460.13	10506703.60	26.57	30.66	34	3
C04*	C04AC1-PARA-L002-05	1010462.13	10506713.15	50.37	16.96	30	3
C04*	C04AC1-PARA-L003-07	1010483.72	10506717.52	68.17	9.65	29	3
C04*	C04AC1-PARA-L004-07	1010466.65	10506696.50	89.67	36.23	28	3
C05	C05AC1-PARA-L001-04	1010462.19	10506754.91	29.69	41.75	35	3
C05	C05AC1-HF-L002-04	1010458.82	10506758.97	45.77	42.85	37	4
C05	C05AC1-HF-L003-04	1010462.40	10506753.35	47.41	40.44	48	5
C05	C05AC1-HF-L004-05	1010468.89	10506750.60	47.41	38.21	33	3
C05	C05AC1-HF-L005-03	1010430.73	10506727.27	132.71	27.33	51	5

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
C06	C06AC1-HF-L001-11	1010438.05	10506762.77	55.61	32.60	28	3
C06	C06AC1-HF-L002-19	1010402.69	10506749.67	69.06	44.67	24	2
C06	C06AC1-PARA-L003-12	1010428.06	10506785.37	80.38	31.90	91	9
C06	C06AC1-HF-L004-16	1010419.66	10506779.46	151.74	32.02	118	13
C06	C06AC1-HF-L005-13	1010407.38	10506773.52	152.23	32.93	96	10
C06	C06AC1-HF-L006-15	1010397.05	10506766.48	152.56	33.59	43	4
C07	C07AC1-HF-L001-08	1010414.52	10506790.31	57.41	36.76	31	3
C07	C07AC1-HF-L002-08	1010369.27	10506784.76	145.34	37.69	39	4
C07	C07AC1-HF-L003-05	1010396.81	10506811.11	149.28	19.53	45	5
C07	C07AC1-HF-L004-07	1010385.09	10506811.20	149.77	29.66	43	4
C07	C07AC1-HF-L005-07	1010383.89	10506799.96	149.77	33.94	39	4
C07	C07AC1-HF-L006-10	1010370.77	10506797.61	150.43	45.17	157	16
C08	C08AC1-HF-L001-06	1010348.36	10506817.89	151.25	29.39	28	3
C08	C08AC1-PARA-L002-06	1010345.63	10506814.56	148.79	29.10	21	2
C08	C08AC1-PARA-L003-07	1010378.35	10506824.50	60.04	33.05	26	3
C08	C08AC1-HF-L004-06	1010384.85	10506814.15	53.81	21.07	24	2
C08	C08AC1-HF-L005-05	1010385.40	10506813.14	53.15	15.35	37	4
C08	C08AC1-HF-L006-08	1010383.79	10506820.16	113.19	36.63	22	2
C08	C08AC1-HF-L007-06	1010367.07	10506832.73	48.23	18.19	13	1
C09*	C09AC1-HF-L001-04	1010343.89	10506821.30	55.22	23.66	35	4
C09*	C09AC1-HF-L002-04	1010346.59	10506818.63	86.29	20.53	16	2
BP01	BP01AC1-HF-L001-05	1010669.92	10506745.24	134.13	43.27	39	4
BP01	BP01AC1-PARA-L002-03	1010649.40	10506780.44	139.28	35.91	47	5
BP01	BP01AC1-PARA-L003-03	1010660.40	10506774.64	136.48	20.64	39	4
BP01	BP01AC1-HF-L004-03	1010642.56	10506753.13	141.59	28.67	51	5
X03	X03AC1-PARA-L001-07	1010352.86	10506980.03	55.94	18.25	29.53	3

Site	Linear Feature ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Distance Along Linear Feature (ft)	Diameter of Linear Feature (in)	Uncertainty ± (in)
X03	X03AC1-HF-L002-05	1010322.93	10506969.58	132.22	15.83	35.43	4
X03	X03AC1-PARA-L003-04	1010340.10	10506985.57	140.09	14.23	43.31	4
X03	X03AC1-PARA-L004-04	1010334.58	10506975.31	132.05	11.40	19.69	2
X04	X04AC1-PARA-L001-04	1010345.44	10506969.23	47.90	29.25	30	3
X04	X04AC1-HF-L002-03	1010351.16	10506940.56	113.19	42.67	59	6
X04	X04AC1-HF-L003-04	1010348.42	10506937.74	116.00	39.03	63	6
X04	X04AC1-HF-L004-03	1010314.06	10506952.79	117.87	34.43	40	4
X04	X04AC1-HF-L005-04	1010317.76	10506964.47	120.89	38.64	55	6
X04	X04AC1-HF-L006-04	1010336.31	10506934.33	120.15	24.99	40	4
X04	X04AC1-HF-L007-03	1010326.24	10506954.89	122.90	28.42	79	8
X04	X04AC1-PARA-L008-02	1010325.18	10506949.49	125.00	23.36	83	8
X04	X04AC1-HF-L009-02	1010324.29	10506943.54	127.62	17.16	65	6
X04	X04AC1-PARA-L010-03	1010338.40	10506970.12	131.56	26.30	68	7
X04	X04AC1-PARA-L011-03	1010353.72	10506943.29	137.14	42.82	94	9
X04	X04AC1-HF-L012-03	1010334.17	10506968.05	142.72	25.24	62	6
X04	X04AC1-HF-L013-03	1010344.12	10506970.08	158.14	15.31	35	4

6.3.3.2 Overall Description of Acoustic Anomalies and Interpretation

The aim of the survey was to identify anomalies consistent with buried geohazards and stratigraphic reflectors, present up to 165ft (50m) depth at a total of sixty-three (63) AC locations.

Any anomaly interpreted as a stratigraphic reflector, debris, or infrastructure was identified using the HF and LF chirp and Innomar/Parametric synthetic aperture sonar (SAS) rendered results. Correlation between the data sets is provided in Table 5. The volumetric images produced are referred to as acoustic cores. Both the identification and interpretation of anomalies relies on the strength of acoustic return from buried targets (i.e., red coloration indicates a strong acoustic response relative to the soil background level) together with the size, and shape of the feature. Anomaly analysis results are presented in Table 16 below.

Identification of anomaly follows the unique naming scheme:

- {Site Name} {AC system used} - {Dataset in which anomaly was picked} - {Anomaly Number}

where,

- {Site Name} = A01, B01, C01, AP0, X01, etc.
- {Dataset in which anomaly was picked} = HF, LF or PARA
- {Anomaly Number} = A001, A002, A003, etc.

When any acoustic anomaly is identified, attributes associated with each anomaly are recorded in the "Anomaly Summary Table" (Table 16). These attributes were tabulated using an MS Excel spreadsheet. The following attributes were recorded and subsequently converted to feet:

- Easting and Northing Position in meters
- Depth of Burial below mudline in meters
- Effective Diameter (largest effective diameter measured in plan-view) in meters
- Effective Width (perpendicular to effective diameter) in meters
- Suggestive Interpretation

The acoustic core is a 40ft (12m) in diameter area. Features can be identified over a 46ft (14m) diameter area (see Figure 55). Beyond the 40ft (12m) diameter scan area, however, the acoustic sampling of anomalies is greatly reduced and as such, the size and shape of anomalies is reported with greater uncertainty.

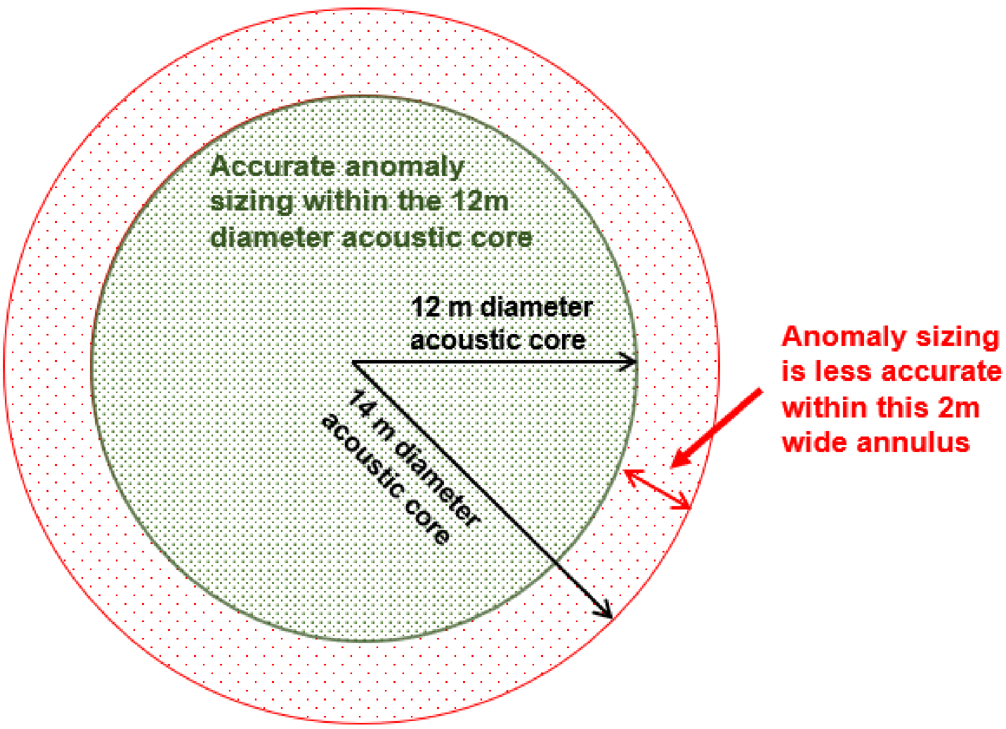

Figure 55 – Acoustic Core diameter showing area of uncertainty.

Table 15 – Anomaly distribution table outlining the depth range where anomalies were noted in the whole MC-20 region based on the results of the HF and Innomar scans.

Depth Range (ft)	# Of Anomalies identified as Debris	# Of Anomalies Identified as Stratigraphy/Geology
0-50	0	135
50-100	0	243
100-150	78	14
150-200	10	2

Table 16 – Anomaly summary table for all sixty-three (63) MC-20 survey sites, including anomaly ID, positions, depth BML, size, and a suggestive interpretation. The sites are presented in the following survey-line order: AP, A, B, C, BP, and X, whereby sites in which JYG-cross data was acquired in addition to SAS are marked with an Asterix (*).

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP0	AP0AC1-HF-A001	1010674.22	10506712.92	24.44	5.58	0.66	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP0	AP0AC1-PARA-A002	1010671.23	10506720.71	24.77	5.74	2.30	Discrete, rounded - elongated anomaly suggestive of a geological feature.
AP0	AP0AC1-HF-A003	1010649.58	10506710.79	29.69	22.97	2.62	Discrete, linear anomaly suggestive of a stratigraphic reflector.
AP0	AP0AC1-HF-A004	1010649.50	10506701.75	81.53	1.97	1.31	Discrete, rounded anomaly suggestive of a geological feature.
AP0	AP0AC1-HF-A005	1010650.87	10506695.43	89.73	5.25	4.59	Discrete, irregular - rounded anomaly suggestive of a geological feature.
AP0	AP0AC1-HF-A006	1010661.25	10506689.65	93.50	7.22	2.13	Discrete, elongated anomaly suggestive of a geological feature.
AP0	AP0AC1-PARA-A007	1010663.47	10506697.05	108.60	23.62	5.25	Discrete, elongated anomaly suggestive of a stratigraphic reflector.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP01	AP01AC1-HF-A001	1010624.78	10506726.72	32.64	23.10	2.62	Linear arrangement of irregular anomalies suggestive of stratigraphic reflectors.
AP01	AP01AC1-HF-A002	1010628.71	10506732.70	34.94	26.31	15.65	Cluster of irregular anomalies suggestive of stratigraphic reflectors.
AP01	AP01AC1-HF-A003	1010644.24	10506721.09	36.09	10.89	1.64	Irregular elongated anomaly suggestive of a stratigraphic reflector.
AP01	AP01AC1-HF-A004	1010619.52	10506743.62	39.86	21.88	2.13	Linear arrangement of irregular anomalies suggestive of stratigraphic reflectors.
AP01	AP01AC1-HF-A005	1010634.28	10506730.28	43.64	26.25	1.97	Linear arrangement of irregular anomalies suggestive of stratigraphic reflectors.
AP01	AP01AC1-HF-A006	1010646.64	10506721.34	43.64	11.68	0.66	Elongated cluster of elliptical anomalies suggestive of stratigraphic reflectors.
AP01	AP01AC1-HF-A007	1010629.21	10506715.41	44.13	2.53	1.41	Discrete, irregular anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-A008	1010645.90	10506719.19	45.77	1.94	0.98	Discrete, irregular anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-A009	1010651.83	10506721.58	45.77	1.35	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature. Anomaly appears on edge of acoustic core so greater uncertainty exists in size measurements.
AP01	AP01AC1-HF-AP010	1010613.69	10506724.11	49.70	1.05	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-AP011	1010612.95	10506738.15	50.03	3.28	0.89	Discrete, elongated anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP01	AP01AC1-HF-AP012	1010615.21	10506720.18	52.33	3.28	2.23	Irregular anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-AP013	1010626.57	10506728.01	52.66	3.81	1.05	Cluster of two sub-rounded anomalies suggestive of stratigraphic reflectors.
AP01	AP01AC1-HF-AP014	1010611.90	10506725.23	52.82	2.79	0.82	Irregular anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-AP015	1010623.56	10506729.55	55.77	5.18	0.98	Cluster of four sub-rounded anomalies suggestive of a stratigraphic reflector.
AP01	AP01AC1-HF-AP016	1010642.84	10506721.43	55.61	1.08	0.79	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-AP017	1010646.81	10506722.90	57.25	3.61	1.15	Cluster of three sub-rounded anomalies suggestive of a geological feature.
AP01	AP01AC1-HF-AP018	1010620.60	10506742.26	59.05	1.57	0.92	Irregular anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-AP019	1010614.45	10506719.43	62.66	3.61	2.30	Irregular cluster of anomalies suggestive of a geological feature. Anomaly appears on edge of acoustic core so greater uncertainty exists in size measurements.
AP01	AP01AC1-HF-AP020	1010627.05	10506713.06	85.79	1.38	1.21	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-AP021	1010627.37	10506741.06	85.63	1.87	0.98	Discrete, elliptical anomaly suggestive of a geological feature.
AP01	AP01AC1-HF-AP022	1010638.98	10506720.13	131.40	36.09	15.94	Large, irregular cluster of anomalies suggestive of debris or infrastructure.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP01	AP01AC1-HF-AP023	1010635.39	10506739.75	136.48	4.46	4.10	Cluster of two elliptical anomalies suggestive of debris.
AP01	AP01AC1-HF-AP024	1010633.82	10506737.89	146.16	39.21	35.60	Large, irregular cluster of anomalies suggestive of debris or infrastructure. Anomaly spans almost entirety of acoustic core.
AP01	AP01AC1-HF-AP025	1010633.28	10506734.37	148.95	40.68	39.37	Large, irregular cluster of anomalies suggestive of debris or infrastructure. Anomaly spans almost entirety of acoustic core.
AP02	AP02AC1-PARA-A001	1010596.26	10506761.81	58.40	2.40	1.90	Grouping of irregular, discrete anomalies suggestive of stratigraphic reflectors.
AP02	AP02AC1-PARA-A002	1010599.39	10506768.28	70.90	5.10	3.30	Grouping of irregular, discrete anomalies suggestive of stratigraphic reflectors.
AP02	AP02AC1-PARA-A003	1010599.19	10506768.85	81.70	5.80	4.80	Grouping of irregular, discrete anomalies suggestive of stratigraphic reflectors.
AP04	AP04AC1-HF-A001	1010546.55	10506813.83	72.34	1.97	1.12	Discrete, rounded anomaly suggestive of a geological feature.
AP04	AP04AC1-HF-A002	1010562.24	10506805.93	77.26	1.64	1.64	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP05	AP05AC1-HF-A001	1010517.00	10506813.21	39.70	23.79	9.84	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
AP05	AP05AC1-HF-A002	1010504.72	10506815.44	48.56	2.13	1.97	Discrete, irregular anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP05	AP05AC1-HF-A003	1010512.06	10506819.06	51.18	9.84	5.25	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
AP05	AP05AC1-HF-A004	1010514.30	10506824.24	55.77	26.57	5.58	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
AP05	AP05AC1-HF-A005	1010534.21	10506819.15	60.37	5.91	2.62	Cluster of sub-rounded anomalies suggestive of stratigraphic reflectors.
AP05	AP05AC1-HF-A006	1010517.71	10506812.62	70.54	2.30	2.30	Discrete, irregular anomaly suggestive of a geological feature.
AP05	AP05AC1-HF-A007	1010521.73	10506815.68	70.87	1.97	1.15	Discrete, irregular anomaly suggestive of a geological feature.
AP05	AP05AC1-HF-A008	1010534.23	10506814.53	74.47	1.64	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP05	AP05AC1-HF-A009	1010506.80	10506825.59	75.46	16.40	5.25	Cluster of irregular anomalies suggestive of stratigraphic reflectors.
AP05	AP05AC1-HF-A010	1010504.07	10506824.90	79.40	2.30	0.98	Discrete, elliptical anomaly suggestive of a geological feature.
AP05	AP05AC1-HF-A011	1010534.68	10506819.95	80.22	3.61	1.15	Discrete, elliptical anomaly suggestive of a geological feature.
AP05	AP05AC1-HF-A012	1010508.74	10506814.35	83.99	9.68	7.22	Cluster of irregular anomalies suggestive a geological feature.
AP05	AP05AC1-HF-A013	1010515.45	10506810.22	93.34	1.80	1.15	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP05	AP05AC1-HF-A014	1010508.42	10506812.24	105.15	2.30	1.64	Discrete, sub-rounded anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP05	AP05AC1-HF-A015	1010497.17	10506828.84	108.76	3.61	2.46	Cluster of two irregular anomalies suggestive of debris. Anomaly appears on edge of acoustic core so greater uncertainty exists in size measurements.
AP05	AP05AC1-HF-A016	1010508.12	10506811.71	112.37	2.62	1.64	Discrete, sub-rounded anomaly suggestive of debris.
AP05	AP05AC1-HF-A017	1010513.41	10506808.18	130.58	12.14	3.94	Cluster of irregular anomalies suggestive of debris. Anomaly appears on edge of acoustic core so greater uncertainty exists in size measurements.
AP05	AP05AC1-HF-A018	1010532.04	10506814.04	146.65	8.20	6.56	Cluster of two irregular anomalies suggestive of debris. Anomaly appears closely associated with AP05AC1-HF-L006.
AP05	AP05AC1-HF-A019	1010519.21	10506814.26	147.47	20.18	4.27	Linear arrangement of anomalies suggestive of debris. Anomaly appears associated with AP05AC1-HF-L006.
AP05	AP05AC1-HF-A020	1010519.54	10506811.37	148.62	19.68	5.58	Large irregular anomaly suggestive of debris. Anomaly appears associated with AP05AC1-HF-L006.
AP05	AP05AC1-HF-A021	1010510.37	10506819.42	150.43	19.85	8.20	Large irregular anomaly suggestive of debris. Anomaly appears associated with AP05AC1-HF-L006.
AP06	AP06AC1-PARA-A001	1010497.76	10506835.65	17.06	3.28	2.30	Discrete, rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP06	AP06AC1-PARA-A002	1010498.11	10506835.84	22.31	3.28	2.95	Discrete, rounded anomaly suggestive of a geological feature.
AP06	AP06AC1-HF-A003	1010499.59	10506836.17	31.82	2.95	2.30	Discrete, rounded anomaly suggestive of a geological feature.
AP06	AP06AC1-HF-A004	1010492.61	10506840.40	51.18	18.08	5.35	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A005	1010504.54	10506832.86	51.84	16.77	2.03	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A006	1010492.46	10506833.96	55.12	13.12	2.30	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A007	1010498.44	10506835.41	57.74	29.53	3.87	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-PARA-A008	1010508.95	10506841.27	60.20	13.12	3.61	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A009	1010480.04	10506858.81	63.32	13.12	1.31	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A010	1010492.28	10506839.06	64.14	22.97	3.28	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A011	1010495.55	10506839.06	66.60	22.15	5.68	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A012	1010494.49	10506838.09	68.90	14.07	1.08	Discrete, elongated anomaly suggestive of a stratigraphic reflector.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP06	AP06AC1-HF-A013	1010500.66	10506837.61	73.33	12.50	2.62	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A014	1010486.78	10506840.50	74.31	8.20	1.64	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP06	AP06AC1-HF-A015	1010502.85	10506855.18	81.53	2.89	1.64	Discrete, rounded anomaly suggestive of a geological feature.
AP06	AP06AC1-HF-A016	1010481.78	10506849.25	92.68	2.33	2.20	Discrete, rounded anomaly suggestive of a geological feature.
AP06	AP06AC1-HF-A017	1010486.17	10506859.81	95.64	3.28	1.97	Discrete, rounded anomaly suggestive of a geological feature.
AP06	AP06AC1-HF-A018	1010490.43	10506866.46	104.33	8.53	1.64	Cluster of three rounded anomalies suggestive of debris.
AP06	AP06AC1-HF-A019	1010483.69	10506839.17	111.88	3.61	2.30	Discrete, rounded anomaly suggestive of debris.
AP06	AP06AC1-HF-A020	1010478.40	10506857.15	152.07	6.79	4.36	Cluster of two rounded anomalies suggestive of debris.
AP08	AP08AC1-HF-A001	1010441.59	10506875.48	32.48	12.80	0.82	Elongated anomaly suggestive of a stratigraphic reflector.
AP08	AP08AC1-HF-A002	1010446.99	10506876.79	44.78	7.55	1.64	Irregular anomaly suggestive of a stratigraphic reflector.
AP08	AP08AC1-HF-A003	1010425.11	10506894.55	47.74	8.20	1.64	Elongated anomaly suggestive of a stratigraphic reflector.
AP08	AP08AC1-HF-A004	1010433.31	10506906.23	47.90	2.13	1.48	Irregular anomaly suggestive of a stratigraphic reflector.
AP08	AP08AC1-HF-A005	1010450.59	10506880.89	53.15	6.89	3.28	Irregular anomaly suggestive of a stratigraphic reflector.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP08	AP08AC1-HF-A006	1010441.07	10506878.31	54.46	13.45	3.61	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
AP08	AP08AC1-HF-A007	1010438.80	10506888.57	54.95	18.04	7.87	Irregular cluster of small anomalies suggestive of stratigraphic reflectors.
AP08	AP08AC1-HF-A008	1010424.55	10506906.18	54.95	1.48	0.82	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP08	AP08AC1-HF-A009	1010417.44	10506889.56	56.27	1.15	0.66	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP08	AP08AC1-HF-A010	1010422.54	10506898.06	56.27	0.82	0.66	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP08	AP08AC1-HF-A011	1010430.96	10506910.99	56.92	10.17	2.62	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
AP08	AP08AC1-HF-A012	1010436.94	10506913.35	63.98	2.62	1.48	Discrete, irregular anomaly suggestive of a geological feature.
AP08	AP08AC1-HF-A013	1010455.28	10506884.27	73.49	3.12	1.38	Discrete, irregular anomaly suggestive of a geological feature.
AP08	AP08AC1-HF-A014	1010453.34	10506882.73	74.15	1.31	1.15	Discrete, sub-rounded anomaly suggestive of a geological feature.
AP08	AP08AC1-HF-A015	1010434.10	10506880.65	114.17	1.64	1.48	Discrete, sub-rounded anomaly suggestive of debris.
AP08	AP08AC1-HF-A016	1010420.85	10506882.33	117.62	1.97	1.31	Discrete, sub-rounded anomaly suggestive of debris. Anomaly appears on edge of core so greater uncertainty exists in size measurements.
AP08	AP08AC1-HF-A017	1010459.42	10506893.49	119.42	1.64	0.98	Discrete, sub-rounded anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP08	AP08AC1-HF-A018	1010445.86	10506895.33	126.15	2.95	1.97	Cluster of two sub-rounded anomalies suggestive of debris.
AP08	AP08AC1-HF-A019	1010418.49	10506887.92	139.11	6.23	1.97	Irregular anomaly suggestive of debris. Anomaly appears on edge of core so greater uncertainty exists in size measurements.
AP08	AP08AC1-HF-A020	1010424.05	10506881.16	142.72	9.19	4.27	Irregular anomaly suggestive of debris. Anomaly appears on edge of core so greater uncertainty exists in size measurements.
AP08	AP08AC1-HF-A021	1010418.08	10506902.58	143.70	10.17	5.91	Cluster of elliptical anomalies suggestive of debris. Anomaly appears on edge of core so greater uncertainty exists in size measurements.
AP08	AP08AC1-HF-A022	1010426.24	10506904.24	146.16	8.53	1.97	Irregular cluster of anomalies with larger central elongated anomaly suggestive of debris.
AP08	AP08AC1-HF-A023	1010417.97	10506902.39	147.15	4.92	3.61	Irregular anomaly suggestive of debris. Anomaly appears on edge of core so greater uncertainty exists in size measurements.
AP08	AP08AC1-HF-A024	1010426.93	10506900.00	149.28	19.68	9.02	Cluster of irregular anomalies, having one large dominant anomaly, suggestive of debris.
AP08	AP08AC1-HF-A025	1010432.43	10506915.49	150.92	10.83	1.64	Discrete, elongated NW-SE anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP08	AP08AC1-HF-A026	1010441.58	10506893.56	153.05	32.81	19.68	Irregular cluster of anomalies between linear features AP08AC1-HF-L004, AP08AC1-HF-L005, and AP08AC1-HF-L006, suggestive of debris.
AP09	AP09AC1-HF-A001	1010413.49	10506929.05	25.43	13.98	1.90	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP09	AP09AC1-HF-A002	1010405.15	10506933.20	26.90	7.51	0.82	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP09	AP09AC1-HF-A003	1010419.10	10506920.48	36.25	22.57	16.08	Discrete, elongated anomaly suggestive of a stratigraphic reflector. The anomaly spans 1m in depth.
AP09	AP09AC1-HF-A004	1010403.77	10506912.02	42.65	5.91	4.92	Discrete, rounded anomaly suggestive of a geological feature.
AP09	AP09AC1-HF-A005	1010399.93	10506920.58	54.13	8.53	2.99	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP09	AP09AC1-PARA-A006	1010397.61	10506912.06	61.84	4.27	5.25	Discrete, rounded anomaly suggestive of a geological feature.
AP09	AP09AC1-HF-A007	1010403.72	10506923.50	68.73	9.06	4.76	Discrete, rounded anomaly suggestive of a geological feature.
AP09	AP09AC1-HF-A008	1010401.41	10506918.58	74.80	2.56	2.07	Discrete, rounded anomaly suggestive of a geological feature.
AP09	AP09AC1-HF-A009	1010404.83	10506919.08	79.23	4.04	2.95	Cluster of two rounded anomalies suggestive of stratigraphic reflectors.
AP09	AP09AC1-HF-A010	1010418.81	10506924.48	98.59	2.07	1.80	Discrete, rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP09	AP09AC1-HF-A011	1010397.01	10506912.80	101.21	5.41	4.59	Discrete, rounded anomaly suggestive of a geological feature.
AP09	AP09AC1-LF-A012	1010424.47	10506922.33	144.52	4.27	3.28	Discrete, rounded anomaly suggestive of debris.
AP10	AP10AC1-PARA-A001	1010372.79	10506932.50	19.03	2.69	1.97	Discrete, rounded anomaly suggestive of a geological feature.
AP10	AP10AC1-PARA-A002	1010371.18	10506932.56	28.87	2.89	2.56	Discrete, rounded anomaly suggestive of a geological feature.
AP10	AP10AC1-HF-A003	1010376.28	10506950.17	68.57	3.77	1.64	Cluster of two rounded anomalies suggestive of stratigraphic reflectors.
AP10	AP10AC1-HF-A004	1010365.48	10506953.87	73.82	1.77	0.85	Discrete, rounded anomaly suggestive of a geological feature.
AP10	AP10AC1-PARA-A005	1010396.36	10506955.65	82.84	4.66	2.76	Discrete, rounded anomaly suggestive of a geological feature.
AP10	AP10AC1-HF-A006	1010387.94	10506937.55	86.94	13.68	2.62	Linear arrangement of rounded anomalies suggestive of stratigraphic reflectors.
AP11	AP11AC1-PARA-A001	1010353.30	10506952.11	11.81	5.91	2.95	Cluster of two rounded anomalies suggestive of stratigraphic reflectors.
AP11	AP11AC1-HF-A002	1010347.66	10506967.53	21.16	3.71	1.51	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP11	AP11AC1-HF-A003	1010351.52	10506966.91	58.89	14.44	2.17	Discrete, elongated anomaly suggestive of a stratigraphic reflector.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
AP11	AP11AC1-PARA-A004	1010347.02	10506962.64	64.96	17.72	4.92	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP11	AP11AC1-HF-A005	1010343.99	10506952.43	73.16	2.07	1.15	Discrete, rounded anomaly suggestive of a geological feature.
AP11	AP11AC1-HF-A006	1010363.06	10506958.97	78.74	2.82	1.48	Discrete, rounded anomaly suggestive of a geological feature.
AP11	AP11AC1-HF-A007	1010341.13	10506960.28	83.99	2.20	1.51	Discrete, rounded anomaly suggestive of a geological feature.
AP11	AP11AC1-HF-A008	1010354.15	10506956.04	110.40	2.07	1.48	Discrete, rounded anomaly suggestive of debris.
AP11	AP11AC1-HF-A009	1010356.25	10506950.42	135.50	4.27	2.17	Discrete, rounded anomaly suggestive of debris.
AP12	AP12AC1-PARA-A001	1010337.40	10506988.49	22.15	31.17	13.12	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
AP13	AP13AC1-PARA-A001	1010292.26	10506998.76	25.59	5.25	1.64	Linear arrangement of anomalies suggestive of stratigraphic reflectors.
AP14	AP14AC1-HF-A001	1010273.16	10507034.25	27.23	12.14	1.64	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
AP15	AP15AC1-PARA-A001	1010243.02	10507065.31	27.23	33.63	17.22	Irregular cluster of anomalies dipping through the acoustic core, suggestive of stratigraphic reflectors.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
A01	A01AC1-HF-A001	1010621.03	10506704.04	27.39	2.13	2.13	Discrete, irregular anomaly suggestive of a geological feature.
A01	A01AC1-HF-A002	1010600.36	10506703.12	31.00	35.43	23.95	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
A01	A01AC1-HF-A003	1010605.39	10506698.26	40.85	28.22	10.99	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
A01	A01AC1-HF-A004	1010603.85	10506722.87	46.59	4.27	2.79	Discrete, irregular anomaly suggestive of a geological feature.
A01	A01AC1-HF-A005	1010620.51	10506704.17	58.07	1.64	0.82	Discrete, elliptical anomaly suggestive of a geological feature.
A01	A01AC1-HF-A006	1010600.77	10506719.87	60.20	1.64	0.82	Discrete, sub-rectangular anomaly suggestive of a geological feature.
A01	A01AC1-HF-A007	1010601.49	10506719.80	62.66	1.48	0.66	Discrete, sub-rectangular anomaly suggestive of a geological feature.
A01	A01AC1-HF-A008	1010602.02	10506719.19	64.80	0.98	0.82	Discrete, sub-rounded anomaly suggestive of a geological feature.
A01	A01AC1-HF-A009	1010593.97	10506720.48	67.75	2.46	1.31	Discrete, elliptical anomaly suggestive of a geological feature. Anomaly is on the edge of the acoustic core; thus, its size is subject to additional uncertainty.
A01	A01AC1-HF-A010	1010621.23	10506706.90	68.08	1.48	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
A01	A01AC1-HF-A011	1010595.66	10506721.55	71.19	1.31	1.15	Discrete, sub-rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
A01	A01AC1-HF-A012	1010619.74	10506691.01	76.77	18.86	9.84	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
A01	A01AC1-HF-A013	1010617.64	10506694.70	93.34	32.81	18.04	Irregular cluster of anomalies suggestive of a geological feature. They appear to be closely related to linear features, A01AC1-HF-L003 and A01-AC1-HF-L004.
A01	A01AC1-HF-A014	1010611.28	10506694.14	101.05	20.34	9.68	Cluster of linear anomalies suggestive of debris or infrastructure; oriented SSE-NNW.
A01	A01AC1-HF-A015	1010630.54	10506713.50	106.96	7.55	1.97	Linear-shaped anomaly suggestive of debris. Its size is subject to additional uncertainty due to being on the edge of the acoustic core.
A01	A01AC1-HF-A016	1010591.95	10506696.29	107.78	20.34	5.41	Linear-shaped anomaly suggestive of debris. Its size is subject to additional uncertainty due to being on the edge of the acoustic core.
A01	A01AC1-HF-A017	1010614.23	10506691.89	110.07	16.73	7.22	Linear arrangement of irregularly shaped anomalies suggestive of debris.
A01	A01AC1-HF-A018	1010621.17	10506705.50	113.19	2.95	1.31	Discrete, elliptical anomaly suggestive of debris.
A01	A01AC1-HF-A019	1010623.11	10506700.78	114.50	8.53	5.91	Irregular cluster of anomalies suggestive of debris.
A01	A01AC1-HF-A020	1010589.04	10506702.36	116.63	2.62	1.80	Discrete, irregular anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
A01	A01AC1-HF-A021	1010602.36	10506689.64	118.44	3.94	2.46	Discrete, irregular anomaly suggestive of debris.
A01	A01AC1-HF-A022	1010612.31	10506722.64	118.77	9.19	7.87	Discrete, irregular anomaly suggestive of debris.
A01	A01AC1-HF-A023	1010602.44	10506699.60	131.07	36.09	13.45	Large, irregular cluster of anomalies suggestive of stratigraphic reflectors.
A02	A02AC1-HF-A001	1010589.75	10506728.27	7.38	4.36	2.40	Discrete, rounded anomaly suggestive of a geological feature.
A02	A02AC1-HF-A002	1010571.51	10506733.71	31.33	4.33	3.77	Discrete, rounded anomaly suggestive of a geological feature.
A02	A02AC1-HF-A003	1010573.61	10506712.87	45.11	9.12	1.64	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
A02	A02AC1-HF-A004	1010565.96	10506729.72	45.77	15.42	3.28	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
A02	A02AC1-HF-A005	1010582.69	10506708.09	59.55	3.22	1.64	Discrete, rounded anomaly suggestive of a geological feature.
A02	A02AC1-HF-A006	1010592.70	10506711.85	60.37	6.56	2.13	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
A02	A02AC1-HF-A007	1010584.07	10506717.34	64.63	3.61	1.35	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
A02	A02AC1-HF-A008	1010577.26	10506737.74	67.59	4.82	3.18	Cluster of two rounded anomalies suggestive of stratigraphic reflectors.
A02	A02AC1-HF-A009	1010571.17	10506724.03	68.57	2.30	1.64	Discrete, rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
A02	A02AC1-HF-A010	1010594.41	10506715.58	72.18	5.02	1.71	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
A02	A02AC1-HF-A011	1010576.80	10506736.40	80.87	2.85	2.00	Discrete, rounded anomaly suggestive of a geological feature.
A02	A02AC1-HF-A012	1010571.13	10506724.52	95.96	4.53	3.28	Discrete, rounded anomaly suggestive of a geological feature.
A03	A03AC1-HF-A001	1010547.51	10506764.77	7.87	2.79	1.05	Discrete, rectangular anomaly suggestive of a stratigraphic reflector.
A03	A03AC1-HF-A002	1010554.73	10506756.94	52.66	10.27	1.25	Discrete, elongated linear anomaly suggestive of a stratigraphic reflector.
A03	A03AC1-HF-A003	1010563.65	10506754.94	65.29	7.41	2.72	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
A03	A03AC1-HF-A004	1010573.93	10506743.94	75.62	2.56	1.80	Discrete, sub-rounded anomaly suggestive of a geological feature.
A03	A03AC1-HF-A005	1010572.87	10506751.64	90.88	2.10	1.28	Discrete, sub-rounded anomaly suggestive of a geological feature.
A03	A03AC1-HF-A006	1010564.49	10506767.03	99.41	2.79	2.13	Discrete, sub-rounded anomaly suggestive of a geological feature.
A03	A03AC1-HF-A007	1010560.59	10506768.75	101.05	2.72	1.90	Discrete, sub-rounded anomaly suggestive of debris.
A03	A03AC1-PARA-A008	1010565.77	10506758.48	109.91	2.95	1.84	Discrete, sub-rounded anomaly suggestive of debris.
A03	A03AC1-PARA-A009	1010568.58	10506740.14	133.20	3.67	2.17	Discrete, sub-rounded anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
A03	A03AC1-PARA-A010	1010561.75	10506748.86	135.33	3.58	2.40	Discrete, sub-rounded anomaly suggestive of debris.
A04	A04AC1-PARA-A001	1010532.26	10506758.69	82.02	2.95	1.64	Discrete, rounded anomaly suggestive of a geological feature.
A05	A05AC1-HF-A001	1010503.46	10506811.85	98.40	5.50	3.20	Discrete, irregular anomaly suggestive of a geological feature.
A05	A05AC1-PARA-A002	1010486.72	10506802.07	37.40	8.00	3.30	Discrete, irregular anomaly suggestive of a geological feature.
A05	A05AC1-PARA-A003	1010513.50	10506792.49	43.00	9.30	2.90	Discrete, elliptical/irregular anomaly suggestive of a geological feature.
A06*	A06AC1-HF-A001	1010460.97	10506810.20	51.02	9.88	2.00	Discrete, linear-shaped anomaly suggestive of a stratigraphic reflector.
A06*	A06AC1-HF-A002	1010453.06	10506810.53	61.84	2.69	2.07	Discrete, irregularly shaped anomaly suggestive of a geological feature. May be two distinct features in proximity to one another.
A06*	A06AC1-HF-A003	1010463.10	10506808.40	69.55	1.64	1.05	Discrete, angular anomaly suggestive of a geological feature.
A06*	A06AC1-HF-A004	1010469.43	10506816.96	70.70	3.15	1.97	Discrete, irregularly shaped anomaly suggestive of a geological feature.
A06*	A06AC1-HF-A005	1010461.56	10506808.07	70.70	2.07	1.25	Discrete, angular anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
A06*	A06AC1-HF-A006	1010466.45	10506831.27	70.87	5.28	1.64	Discrete, irregularly shaped anomaly suggestive of a geological feature. May be two distinct features in proximity to one another.
A06*	A06AC1-HF-A007	1010482.88	10506819.55	71.19	2.26	0.82	Discrete, angular anomaly suggestive of a geological feature.
A06*	A06AC1-HF-A008	1010469.83	10506835.07	80.87	1.57	0.92	Discrete, angular anomaly suggestive of a geological feature.
A07	A07AC1-HF-A001	1010448.20	10506851.38	32.04	1.84	1.02	Discrete, elliptical to elongated anomaly suggestive of a geological feature.
A07	A07AC1-HF-A002	1010449.72	10506857.01	46.70	1.54	1.41	Discrete, sub-rounded anomaly suggestive of a geological feature.
A07	A07AC1-HF-A003	1010454.32	10506843.71	48.77	20.34	1.97	Discrete, elongated linear anomaly suggestive of a geological feature.
A07	A07AC1-HF-A004	1010432.50	10506866.64	57.78	1.97	1.77	Discrete, sub-rounded anomaly suggestive of a geological feature.
A07	A07AC1-HF-A005	1010448.18	10506847.03	67.13	6.82	2.95	Discrete, irregular elongated anomaly suggestive of a stratigraphic reflector.
A07	A07AC1-HF-A006	1010447.78	10506848.96	140.06	21.88	1.48	Discrete, elongated linear anomaly suggestive of debris. Correlates with adjacent linear features.
A07	A07AC1-HF-A007	1010455.91	10506845.06	140.50	5.71	3.51	Discrete, irregular anomaly suggestive of debris.
A07	A07AC1-HF-A008	1010430.89	10506860.42	144.98	9.71	2.03	Discrete, irregular elongated anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
A07	A07AC1-HF-A009	1010443.18	10506850.40	148.38	5.12	3.05	Discrete, irregular anomaly suggestive of debris.
A07	A07AC1-HF-A010	1010426.65	10506843.82	153.84	16.86	8.14	Discrete, irregular anomaly suggestive of debris.
A08	A08AC1-PARA-A001	1010421.20	10506876.04	37.40	2.49	2.33	Discrete, rounded anomaly suggestive of a geological feature.
A10	A10AC1-PARA-A001	1010346.08	10506927.61	12.10	2.90	1.50	Discrete, elliptical anomaly suggestive of a geological feature.
A11*	A11AC1-PARA-A001	1010330.82	10506947.70	19.19	4.27	2.62	Discrete, rounded anomaly suggestive of a geological feature.
A11*	A11AC1-PARA-A002	1010344.56	10506949.21	36.58	2.30	2.30	Discrete, rounded anomaly suggestive of a geological feature.
A11*	A11AC1-PARA-A003	1010344.07	10506954.76	42.16	1.97	1.64	Discrete, rounded anomaly suggestive of a geological feature.
A11*	A11AC1-PARA-A004	1010337.90	10506944.06	54.95	4.49	2.56	Discrete, rounded anomaly suggestive of a geological feature.
A11*	A11AC1-PARA-A005	1010341.77	10506944.29	71.36	6.43	2.95	Cluster of rounded anomalies suggestive of stratigraphic reflectors.
A11*	A11AC1-PARA-A006	1010338.23	10506943.83	80.22	3.97	3.15	Discrete, rounded anomaly suggestive of a geological feature.
A11*	A11AC1-PARA-A007	1010328.88	10506951.28	80.22	3.02	2.49	Discrete, rounded anomaly suggestive of a geological feature.
B01	B01AC1-PARA-A001	1010575.85	10506656.66	155.8	3.3	2.2	Discrete, sub-rounded anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B01	B01AC1-HF-A002	1010583.66	10506666.05	112.5	1.9	1.5	Discrete, sub-rounded anomaly suggestive of debris.
B02	B02AC1-HF-A001	1010555.32	10506691.32	35.27	28.87	2.66	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B02	B02AC1-HF-A002	1010559.13	10506690.32	43.14	24.93	5.25	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B02	B02AC1-HF-A003	1010551.29	10506688.29	134.68	29.79	17.55	Discrete, irregular anomaly suggestive of a stratigraphic reflector or infrastructure.
B03	B03AC1-PARA-A001	1010520.67	10506725.58	26.90	32.48	4.43	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B03	B03AC1-HF-A002	1010535.70	10506710.91	34.94	18.08	12.47	Cluster of two elongated anomalies suggestive of stratigraphic reflectors.
B03	B03AC1-HF-A003	1010543.66	10506707.69	46.10	15.26	2.07	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B03	B03AC1-HF-A004	1010520.48	10506716.49	46.10	27.53	4.27	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B03	B03AC1-HF-A005	1010539.65	10506718.29	56.27	19.09	1.54	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B03	B03AC1-HF-A006	1010514.15	10506713.60	75.79	3.64	1.38	Discrete, rounded anomaly suggestive of a geological feature.
B03	B03AC1-HF-A007	1010532.73	10506738.33	92.52	2.07	1.48	Discrete, rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B03	B03AC1-HF-A008	1010529.23	10506740.77	147.31	3.28	2.23	Discrete, rounded anomaly suggestive of debris.
B03	B03AC1-PARA-A009	1010532.74	10506721.92	153.71	34.12	10.33	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A001	1010496.91	10506752.86	10.50	0.98	0.66	Discrete, sub-rounded anomaly suggestive of a geological feature.
B04	B04AC1-HF-A002	1010498.03	10506729.72	20.83	3.28	0.98	Cluster of two sub-rounded anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A003	1010496.23	10506739.53	46.75	11.81	3.28	Elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A004	1010514.16	10506729.94	52.49	24.93	4.76	Elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A005	1010492.37	10506742.48	53.48	17.22	1.97	Elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A006	1010500.10	10506746.20	56.27	36.09	2.30	Elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A007	1010487.69	10506746.50	56.27	0.98	0.66	Discrete, sub-rounded anomaly suggestive of a geological feature.
B04	B04AC1-HF-A008	1010513.45	10506744.68	58.23	5.58	1.97	Cluster of small sub-rounded anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A009	1010510.63	10506725.93	58.23	8.20	0.98	Elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A010	1010483.52	10506743.00	58.56	6.73	0.66	Linear arrangement of two elliptical anomalies suggestive of stratigraphic reflectors.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B04	B04AC1-HF-A011	1010500.07	10506761.29	59.05	2.49	1.64	Discrete, irregular anomaly suggestive of a geological feature.
B04	B04AC1-HF-A012	1010504.49	10506755.48	59.88	12.80	3.94	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A013	1010514.45	10506741.69	60.04	5.41	0.66	Thin elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A014	1010499.35	10506729.02	60.04	4.10	0.66	Thin elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A015	1010493.89	10506746.53	60.53	2.13	1.80	Discrete, irregular anomaly suggestive of a geological feature.
B04	B04AC1-HF-A016	1010497.56	10506759.49	61.02	1.80	0.98	Discrete, irregular anomaly suggestive of a geological feature.
B04	B04AC1-HF-A017	1010513.63	10506727.61	61.35	9.02	2.30	Linear arrangement of elliptical anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A018	1010515.03	10506750.53	61.52	3.28	0.66	Discrete, elliptical anomaly suggestive of a geological feature.
B04	B04AC1-HF-A019	1010479.06	10506741.92	62.01	1.97	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
B04	B04AC1-HF-A020	1010502.88	10506762.28	62.17	4.10	1.31	Cluster of sub-rounded anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A021	1010504.75	10506726.15	63.81	6.89	0.98	Elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A022	1010493.58	10506758.82	65.62	0.98	0.82	Cluster of sub-rounded anomalies suggestive of stratigraphic reflectors.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B04	B04AC1-HF-A023	1010487.81	10506750.84	66.76	3.61	0.82	Cluster of sub-rounded anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A024	1010517.40	10506744.76	70.05	12.96	1.97	Elongated anomaly suggestive of a stratigraphic reflector.
B04	B04AC1-HF-A025	1010490.57	10506755.23	70.87	1.48	1.48	Discrete, rounded anomaly suggestive of a geological feature.
B04	B04AC1-HF-A026	1010513.89	10506742.96	72.51	2.30	1.31	Discrete, irregular anomaly suggestive of a geological feature.
B04	B04AC1-HF-A027	1010518.49	10506747.57	73.00	6.89	2.30	Cluster of small sub-rounded anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A028	1010507.11	10506739.42	76.77	1.97	0.66	Discrete, elliptical anomaly suggestive of a geological feature.
B04	B04AC1-HF-A029	1010515.56	10506748.93	77.43	1.97	1.15	Cluster of two sub-rounded anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A030	1010514.11	10506734.62	77.43	2.46	0.82	Cluster of two sub-rounded anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A031	1010511.92	10506747.27	78.74	5.58	1.97	Cluster of elliptical anomalies with large central anomaly, suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A032	1010493.65	10506729.57	79.40	6.23	1.48	Cluster of irregular anomalies suggestive of stratigraphic reflectors.
B04	B04AC1-HF-A033	1010491.82	10506724.59	81.36	2.46	1.48	Discrete, irregular anomaly suggestive of a geological feature.
B04	B04AC1-HF-A034	1010511.82	10506750.77	81.53	1.64	0.82	Discrete, sub-rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B04	B04AC1-HF-A035	1010509.03	10506730.09	106.13	3.61	1.80	Cluster of sub-rounded anomalies suggestive of debris.
B04	B04AC1-HF-A036	1010498.93	10506724.47	141.08	19.68	6.56	Cluster of irregular anomalies suggestive of debris.
B04	B04AC1-HF-A037	1010500.88	10506722.18	147.31	16.24	2.13	Discrete, elongated anomaly suggestive of debris.
B04	B04AC1-HF-A038	1010487.45	10506745.92	149.44	8.37	1.80	Discrete, elongated anomaly suggestive of debris.
B04	B04AC1-HF-A039	1010503.46	10506744.61	151.74	38.88	33.63	Large cluster of irregular anomalies suggestive of a debris field.
B04	B04AC1-HF-A040	1010503.16	10506748.54	154.69	36.75	30.84	Large cluster of irregular anomalies suggestive of a debris field.
B05	B05AC1-PARA-A001	1010458.08	10506770.18	32.64	9.51	7.22	Cluster of two anomalies suggestive of stratigraphic reflectors.
B05	B05AC1-HF-A002	1010467.91	10506766.61	35.60	23.95	5.25	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-PARA-A003	1010468.73	10506782.78	37.57	6.89	3.28	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A004	1010489.50	10506764.93	43.47	18.37	1.84	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A005	1010484.29	10506767.80	43.47	20.60	1.87	Discrete, elongated anomaly suggestive of a stratigraphic reflector.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B05	B05AC1-HF-A006	1010467.47	10506763.33	43.47	12.73	2.95	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A007	1010487.73	10506756.67	46.92	17.06	2.95	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A008	1010473.68	10506760.97	46.92	13.45	2.13	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A009	1010462.07	10506776.99	46.92	8.20	4.43	Discrete, rounded anomaly suggestive of a geological feature.
B05	B05AC1-PARA-A010	1010476.24	10506758.00	48.39	12.04	3.74	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A011	1010484.19	10506774.87	54.30	10.50	3.15	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A012	1010477.60	10506774.54	56.43	23.62	3.61	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A013	1010473.18	10506781.11	57.58	9.02	2.46	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A014	1010480.96	10506767.70	74.47	13.98	2.95	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-HF-A015	1010485.01	10506766.68	94.32	3.28	2.85	Discrete, rounded anomaly suggestive of a geological feature.
B05	B05AC1-HF-A016	1010471.04	10506781.12	101.87	2.69	2.23	Discrete, rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B05	B05AC1-PARA-A017	1010467.50	10506781.20	122.21	12.70	5.25	Discrete, elongated anomaly suggestive of debris.
B05	B05AC1-HF-A018	1010479.01	10506764.05	150.75	18.04	4.92	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
B05	B05AC1-PARA-A019	1010486.26	10506765.66	151.41	7.45	4.27	Discrete, rounded anomaly suggestive of debris.
B06	B06AC1-PARA-A001	1010443.36	10506802.93	101.00	4.80	3.70	Discrete, rounded anomaly suggestive of a geological feature.
B06	B06AC1-PARA-A002	1010465.14	10506787.55	64.80	4.60	4.30	Discrete, rounded anomaly with irregularities suggestive a geological feature.
B07	B07AC1-HF-A001	1010411.29	10506800.34	37.73	1.35	0.66	Discrete, elliptical anomaly suggestive of a geological feature.
B07	B07AC1-HF-A002	1010425.41	10506808.91	42.65	1.61	1.35	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A003	1010411.70	10506825.84	47.57	15.09	2.56	Cluster of linear anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A004	1010396.50	10506823.70	48.88	11.29	1.64	Cluster of linear anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A005	1010399.78	10506819.51	49.05	15.06	2.13	Cluster of linear anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A006	1010410.63	10506808.06	52.99	22.64	2.13	Linear arrangement of anomalies suggestive of stratigraphic reflectors.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B07	B07AC1-HF-A007	1010404.68	10506826.75	66.27	1.51	1.05	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A008	1010423.99	10506803.27	67.09	12.96	1.25	Linear arrangement of elliptical anomalies suggestive of stratigraphic reflectors. Central anomaly has strongest response.
B07	B07AC1-HF-A009	1010402.64	10506804.49	67.59	4.13	2.43	Discrete, irregular anomaly suggestive of a geological feature.
B07	B07AC1-HF-A010	1010398.18	10506817.72	67.59	14.21	2.49	Linear arrangement of anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A011	1010423.15	10506834.11	72.18	1.64	0.92	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A012	1010422.25	10506830.84	73.82	1.25	0.79	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A013	1010419.48	10506828.71	74.15	1.15	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A014	1010423.08	10506824.32	74.15	1.21	0.85	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A015	1010410.64	10506817.03	75.30	10.83	2.30	Cluster of elliptical anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A016	1010404.15	10506815.96	76.44	6.40	1.80	Cluster of elliptical anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A017	1010425.58	10506810.40	78.90	6.56	2.26	Cluster of elliptical anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A018	1010419.52	10506797.93	81.86	1.87	1.21	Discrete, sub-rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B07	B07AC1-HF-A019	1010416.46	10506825.03	82.35	1.51	1.08	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A020	1010427.75	10506813.70	82.84	4.76	2.13	Cluster of sub-rounded anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A021	1010433.09	10506822.83	90.06	2.99	1.18	Discrete, elliptical anomaly suggestive of a geological feature.
B07	B07AC1-HF-A022	1010420.01	10506803.63	91.21	19.68	1.02	Linear arrangement of irregular anomalies suggestive of stratigraphic reflectors.
B07	B07AC1-HF-A023	1010434.03	10506820.15	94.65	1.74	1.21	Discrete, sub-rounded anomaly suggestive of a geological feature.
B07	B07AC1-HF-A024	1010424.88	10506814.21	99.25	3.28	1.80	Cluster of two sub-rounded anomalies suggestive of a geological feature.
B07	B07AC1-HF-A025	1010430.27	10506809.60	99.25	5.58	2.30	Cluster of small sub-rounded anomalies suggestive of a geological feature.
B08	B08AC1-PARA-A001	1010375.04	10506842.79	56.92	2.07	1.80	Discrete, rounded anomaly suggestive of a geological feature.
B08	B08AC1-PARA-A002	1010376.59	10506825.33	64.30	4.33	2.07	Discrete, rounded anomaly suggestive of a geological feature.
B08	B08AC1-PARA-A003	1010371.65	10506848.37	66.27	2.79	1.97	Discrete, rounded anomaly suggestive of a geological feature.
B08	B08AC1-PARA-A004	1010371.33	10506847.45	67.59	2.30	1.97	Discrete, rounded anomaly suggestive of a geological feature.
B08	B08AC1-PARA-A005	1010385.03	10506843.93	123.69	3.22	2.49	Discrete, rounded anomaly suggestive of debris.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B09	B09AC1-HF-A001	1010373.24	10506879.76	34.0	6.1	1.2	Discrete, linear anomaly suggestive of a stratigraphic reflector.
B09	B09AC1-HF-A002	1010354.70	10506872.77	40.7	1.4	0.7	Discrete, rounded anomaly suggestive of a geological feature.
B09	B09AC1-HF-A003	1010359.95	10506856.49	44.5	16.4	6.2	Grouping of irregular, discrete anomalies suggestive of a geological feature.
B09	B09AC1-HF-A004	1010353.72	10506868.70	50.4	10.3	7.2	Irregularly shaped anomaly suggestive of a geological feature.
B09	B09AC1-HF-A005	1010380.62	10506864.17	75.80	1.80	1.20	Discrete, rounded anomaly suggestive of a geological feature.
B09	B09AC1-HF-A006	1010371.27	10506858.17	102.00	3.90	1.90	Discrete, rounded anomaly suggestive of a geological feature.
B10	B10AC1-HF-A001	1010344.24	10506896.42	108.43	2.33	1.64	Discrete, rounded anomaly suggestive of debris.
B10	B10AC1-HF-A002	1010316.22	10506898.53	136.65	2.89	1.97	Discrete, rounded anomaly suggestive of debris.
B11	B11AC1-PARA-A001	1010308.89	10506905.60	138.78	7.71	3.28	Linear arrangement of anomalies suggestive of debris.
B12	B12AC1-PARA-A001	1010289.75	10506928.52	21.65	19.03	7.87	Irregular anomaly suggestive of a stratigraphic reflector.
B13	B13AC1-PARA-A001	1010234.28	10506964.06	24.61	4.27	2.79	Irregular shaped anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
B15	B15AC1-HF-A001	1010195.54	10507015.04	24.28	8.20	2.95	Irregular shaped anomaly suggestive of a stratigraphic reflector.
B17	B17AC1-PARA-A001	1010117.04	10507057.79	34.94	6.89	6.17	Discrete, sub-rounded anomaly suggestive of a geological feature.
C01	C01AC1-HF-A001	1010555.48	10506651.58	5.58	2.46	1.15	Discrete, irregular anomaly, suggestive of a geological feature.
C01	C01AC1-HF-A002	1010556.90	10506647.90	32.15	22.64	2.46	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C01	C01AC1-HF-A003	1010547.56	10506655.76	33.63	23.46	2.13	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C01	C01AC1-HF-A004	1010573.76	10506631.24	35.10	8.53	1.31	Irregular anomaly suggestive of a stratigraphic reflector.
C01	C01AC1-HF-A005	1010569.25	10506631.47	36.58	19.68	1.97	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C01	C01AC1-HF-A006	1010570.99	10506637.22	39.04	30.84	13.78	Cluster of irregular anomalies suggestive of stratigraphic reflectors.
C01	C01AC1-HF-A007	1010543.73	10506638.92	60.70	2.62	1.64	Discrete, irregular anomaly suggestive of a geological feature.
C01	C01AC1-HF-A008	1010541.52	10506631.70	62.17	2.46	1.15	Discrete, irregular anomaly suggestive of a geological feature. Anomaly appears on the edge of the acoustic core, so greater uncertainty exists in size measurements.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C01	C01AC1-HF-A009	1010571.49	10506639.41	111.88	21.82	13.45	Irregular cluster of anomalies suggestive of debris.
C01	C01AC1-HF-A010	1010561.04	10506630.77	114.50	20.83	3.28	Linear arrangement of anomalies trending NW-SE suggestive of debris.
C01	C01AC1-HF-A011	1010556.37	10506635.27	118.11	12.63	4.27	Discrete, irregular anomaly suggestive of debris.
C01	C01AC1-HF-A012	1010564.78	10506663.39	123.03	7.55	4.43	Discrete, irregular anomaly suggestive of debris.
C01	C01AC1-HF-A013	1010558.55	10506646.57	132.05	42.32	41.83	Large irregular cluster of anomalies suggestive of debris or basement. Anomaly spans the entirety of the acoustic core.
C01	C01AC1-HF-A014	1010557.63	10506640.63	133.86	40.52	25.75	Large irregular cluster of anomalies suggestive of debris. Anomaly appears connected to linear feature C01AC1-HF-L006.
C01	C01AC1-HF-A015	1010561.28	10506641.68	140.42	20.67	17.22	Linear arrangement of five elongated anomalies suggestive of debris.
C01	C01AC1-HF-A016	1010555.71	10506646.71	144.85	40.03	38.39	Large irregular cluster of anomalies suggestive of debris or infrastructure. Anomaly spans the entirety of the acoustic core.
C01	C01AC1-HF-A017	1010562.77	10506643.24	147.80	39.21	19.68	Large irregular cluster of anomalies suggestive of debris. Anomaly appears related to linear feature C01AC1-HF-L007.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C02	C02AC1-HF-A001	1010536.08	10506652.56	4.76	2.46	1.31	Discrete, sub-rectangular anomaly suggestive of a geological feature.
C02	C02AC1-HF-A002	1010546.89	10506670.59	8.37	1.64	1.15	Discrete, sub-rounded anomaly suggestive of a geological feature.
C02	C02AC1-HF-A003	1010521.97	10506679.52	30.35	8.86	3.12	Irregular anomaly suggestive of a stratigraphic reflector.
C02	C02AC1-HF-A004	1010542.54	10506673.94	37.40	12.63	3.61	Irregular anomaly suggestive of a stratigraphic reflector.
C02	C02AC1-HF-A005	1010545.79	10506653.27	38.88	13.12	2.79	Irregular anomaly suggestive of a stratigraphic reflector.
C02	C02AC1-HF-A006	1010545.78	10506651.64	46.26	18.86	2.46	Irregular anomaly suggestive of a stratigraphic reflector.
C02	C02AC1-HF-A007	1010536.77	10506654.67	49.87	5.74	0.66	Thin elongated anomaly suggestive of a stratigraphic reflector.
C02	C02AC1-HF-A008	1010544.63	10506669.54	52.99	14.27	0.98	Irregular anomaly suggestive of a stratigraphic reflector.
C02	C02AC1-HF-A009	1010510.05	10506663.98	54.63	1.64	0.82	Discrete, sub-rounded anomaly suggestive of a geological feature.
C02	C02AC1-HF-A010	1010549.02	10506653.78	65.45	2.30	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
C02	C02AC1-HF-A011	1010534.85	10506657.30	65.45	1.80	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
C02	C02AC1-HF-A012	1010547.53	10506653.29	68.73	3.12	1.15	Discrete, irregular anomaly suggestive of a geological feature.
C02	C02AC1-HF-A013	1010538.22	10506667.77	70.70	3.44	0.82	Discrete, irregular anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C02	C02AC1-HF-A014	1010524.47	10506682.93	71.03	3.12	1.15	Discrete, elliptical anomaly suggestive of a geological feature.
C02	C02AC1-HF-A015	1010546.79	10506664.46	72.83	1.64	0.66	Discrete, elliptical anomaly suggestive of a geological feature.
C02	C02AC1-HF-A016	1010541.87	10506668.68	74.15	10.83	0.98	Linear arrangement of three elliptical anomalies suggestive of stratigraphic reflectors.
C02	C02AC1-HF-A017	1010549.06	10506668.24	75.79	2.79	0.82	Discrete, elliptical anomaly suggestive of a geological feature.
C02	C02AC1-HF-A018	1010550.50	10506673.36	78.58	2.30	0.98	Discrete, elliptical anomaly suggestive of a geological feature.
C02	C02AC1-HF-A019	1010520.37	10506679.92	79.89	1.97	0.98	Discrete, elliptical anomaly suggestive of a geological feature.
C02	C02AC1-HF-A020	1010534.54	10506665.59	80.38	10.83	1.64	Elongated anomaly suggestive of a stratigraphic reflector.
C02	C02AC1-HF-A021	1010541.63	10506662.22	80.71	1.64	0.98	Discrete, sub-rounded anomaly suggestive of a geological feature.
C02	C02AC1-HF-A022	1010526.78	10506644.87	82.18	2.62	1.31	Discrete, elliptical anomaly suggestive of a geological feature.
C02	C02AC1-HF-A023	1010528.34	10506652.31	82.18	1.97	0.98	Discrete, elliptical anomaly suggestive of a geological feature.
C02	C02AC1-HF-A024	1010526.65	10506656.67	85.14	2.30	1.15	Discrete, sub-rectangular anomaly suggestive of a geological feature.
C02	C02AC1-HF-A025	1010532.03	10506666.99	136.81	36.09	35.43	Large irregular anomaly suggestive of debris or infrastructure. Anomaly appears slightly dipping and spans nearly the entirety of the acoustic core.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C02	C02AC1-HF-A026	1010531.66	10506672.49	138.29	24.93	19.68	Irregular cluster of anomalies suggestive of a debris field.
C02	C02AC1-HF-A027	1010538.98	10506648.17	142.72	1.97	1.15	Discrete, elliptical anomaly suggestive of debris.
C02	C02AC1-HF-A028	1010544.00	10506682.85	143.54	4.10	1.31	Discrete, elliptical anomaly suggestive of debris.
C02	C02AC1-HF-A029	1010514.63	10506652.89	143.70	0.98	0.98	Discrete, rounded anomaly suggestive of debris.
C02	C02AC1-HF-A030	1010533.71	10506656.06	145.83	18.86	3.44	Linear arrangement of elliptical anomalies suggestive of debris.
C02	C02AC1-HF-A031	1010532.64	10506677.44	148.62	5.41	2.30	Discrete, irregular anomaly suggestive of debris.
C02	C02AC1-HF-A032	1010530.98	10506662.28	149.44	33.14	31.50	Large irregular cluster of anomalies suggestive of debris or infrastructure.
C02	C02AC1-HF-A033	1010533.88	10506663.64	152.56	40.35	36.09	Large irregular cluster of anomalies suggestive of debris or infrastructure. Anomaly spans nearly the entirety of the acoustic core.
C03	C03AC1-PARA-A001	1010487.62	10506695.05	101.70	2.20	1.80	Discrete, rounded anomaly suggestive of a geological feature.
C03	C03AC1-PARA-A002	1010488.63	10506687.74	95.10	6.20	2.20	Discrete, rounded anomaly with irregularities suggestive a geological feature.
C03	C03AC1-PARA-A003	1010512.88	10506691.46	101.70	1.90	1.40	Discrete, sub-rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C04*	C04AC1-PARA-A001	1010465.53	10506706.33	2.62	11.35	1.31	Discrete, elliptical anomaly suggestive of a geological feature.
C04*	C04AC1-PARA-A002	1010489.67	10506724.31	72.51	4.86	2.43	Discrete, rounded anomaly suggestive of a geological feature.
C05	C05AC1-HF-A001	1010455.30	10506733.92	10.01	5.25	0.85	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C05	C05AC1-PARA-A002	1010459.14	10506740.75	34.12	10.37	2.10	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C05	C05AC1-PARA-A003	1010438.32	10506742.60	34.12	23.13	1.41	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C05	C05AC1-HF-A004	1010444.55	10506740.14	37.89	25.23	2.95	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C05	C05AC1-HF-A005	1010456.79	10506750.70	42.81	12.43	4.63	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C05	C05AC1-PARA-A006	1010463.76	10506734.58	43.14	20.51	3.84	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C05	C05AC1-HF-A007	1010448.33	10506744.24	50.20	12.30	2.69	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C05	C05AC1-PARA-A008	1010468.48	10506735.55	65.94	20.18	2.76	Discrete, rounded anomaly suggestive of a geological feature.
C05	C05AC1-PARA-A009	1010450.64	10506747.57	65.94	6.07	3.15	Cluster of anomalies suggestive of stratigraphic reflectors.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C06	C06AC1-HF-A001	1010405.42	10506748.54	30.84	1.97	0.72	Discrete, elliptical anomaly suggestive of a geological feature.
C06	C06AC1-HF-A002	1010422.49	10506757.70	33.63	26.87	1.77	Linear arrangement of anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A003	1010419.09	10506757.86	37.57	24.38	0.62	Thin elongated anomaly suggestive of a stratigraphic reflector.
C06	C06AC1-PARA-A004	1010422.72	10506785.33	40.19	1.51	1.12	Discrete, sub-rounded anomaly suggestive of a geological feature.
C06	C06AC1-HF-A005	1010437.93	10506774.60	41.83	1.57	0.89	Discrete, sub-rounded anomaly suggestive of a geological feature.
C06	C06AC1-HF-A006	1010408.99	10506766.34	42.16	1.48	0.82	Discrete, sub-rounded anomaly suggestive of a geological feature.
C06	C06AC1-HF-A007	1010419.11	10506748.75	45.93	6.27	4.27	Cluster of irregular anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A008	1010410.92	10506756.74	45.93	11.42	1.05	Linear arrangement of small anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A009	1010419.07	10506750.85	46.75	8.04	1.18	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C06	C06AC1-HF-A010	1010404.76	10506751.74	46.75	4.43	1.31	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-PARA-A011	1010425.57	10506772.04	47.41	2.40	0.89	Discrete, elliptical anomaly suggestive of a geological feature.
C06	C06AC1-HF-A012	1010418.73	10506752.58	47.74	15.26	0.72	Linear arrangement of anomalies suggestive of stratigraphic reflectors.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C06	C06AC1-HF-A013	1010414.35	10506745.59	49.05	6.96	1.25	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C06	C06AC1-HF-A014	1010407.14	10506756.64	49.70	19.09	1.97	Linear arrangement of anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A015	1010419.95	10506757.06	49.70	11.09	1.51	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C06	C06AC1-HF-A016	1010398.66	10506767.00	49.70	6.69	1.90	Cluster of two irregular anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A017	1010422.10	10506760.32	51.02	17.13	1.94	Linear arrangement of anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-PARA-A018	1010420.20	10506777.48	53.48	20.87	4.23	Linear arrangement of sub-rounded anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A019	1010429.21	10506747.08	52.82	3.35	2.00	Discrete, irregular anomaly suggestive of a geological feature.
C06	C06AC1-PARA-A020	1010420.67	10506764.89	56.43	13.22	2.85	Elongated cluster of irregular anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A021	1010424.39	10506770.68	58.89	21.46	2.17	Linear arrangement of irregular anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-PARA-A022	1010414.38	10506776.09	64.47	1.38	1.05	Discrete, sub-rounded anomaly suggestive of a geological feature.
C06	C06AC1-PARA-A023	1010427.39	10506769.22	66.11	3.61	1.64	Discrete, elliptical anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C06	C06AC1-HF-A024	1010422.45	10506767.76	67.75	28.67	0.82	Thin elongated anomaly suggestive of a stratigraphic reflector.
C06	C06AC1-HF-A025	1010407.65	10506780.81	96.46	2.36	1.12	Discrete, elliptical anomaly suggestive of a geological feature.
C06	C06AC1-HF-A026	1010424.73	10506747.51	101.71	2.03	1.21	Discrete, elliptical anomaly suggestive of a geological feature.
C06	C06AC1-HF-A027	1010405.72	10506777.03	105.81	14.14	3.77	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C06	C06AC1-HF-A028	1010429.04	10506764.03	137.96	6.79	1.57	Irregular cluster of anomalies suggestive of debris.
C06	C06AC1-HF-A029	1010430.00	10506767.44	140.42	4.17	2.72	Cluster of two elliptical anomalies suggestive of debris.
C06	C06AC1-PARA-A030	1010417.13	10506767.12	149.77	4.59	3.54	Cluster of two elliptical anomalies suggestive of debris.
C07	C07AC1-HF-A001	1010401.07	10506789.65	36.58	13.12	1.74	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C07	C07AC1-HF-A002	1010395.17	10506767.57	44.13	2.00	1.15	Discrete, elliptical anomaly suggestive of a geological feature. The anomaly appears on the edge of the swath and is not fully imaged.
C07	C07AC1-HF-A003	1010393.70	10506771.29	44.13	2.79	1.54	Discrete, elliptical anomaly suggestive of a geological feature.
C07	C07AC1-HF-A004	1010400.02	10506772.66	48.39	17.26	1.87	Discrete, elongated anomaly suggestive of a stratigraphic reflector. The anomaly appears within a dense layer of geology.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C07	C07AC1-HF-A005	1010395.75	10506798.50	51.18	18.01	7.09	Discrete, elongated anomaly suggestive of a stratigraphic reflector. The anomaly appears within a dense layer of geology.
C07	C07AC1-HF-A006	1010380.01	10506791.14	52.66	1.84	1.25	Discrete, sub-rounded anomaly suggestive of a geological feature.
C07	C07AC1-HF-A007	1010375.13	10506793.68	52.66	1.80	1.05	Discrete, sub-rounded anomaly suggestive of a geological feature.
C07	C07AC1-HF-A008	1010391.43	10506808.35	62.66	10.50	3.74	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C07	C07AC1-HF-A009	1010409.79	10506796.58	63.81	6.96	1.97	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C07	C07AC1-HF-A010	1010404.20	10506798.33	64.30	14.11	2.49	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
C07	C07AC1-HF-A011	1010379.68	10506781.62	69.06	1.87	1.44	Discrete, sub-rounded anomaly suggestive of a geological feature.
C07	C07AC1-HF-A012	1010408.09	10506790.39	69.39	2.00	1.35	Discrete, sub-rounded anomaly suggestive of a geological feature.
C07	C07AC1-HF-A013	1010394.13	10506773.01	70.87	3.31	1.61	Discrete, elliptical anomaly suggestive of a geological feature.
C07	C07AC1-HF-A014	1010409.71	10506794.27	71.03	2.99	1.54	Discrete, sub-rounded anomaly suggestive of a geological feature.
C07	C07AC1-HF-A015	1010411.83	10506798.19	71.69	2.40	1.41	Discrete, elliptical anomaly suggestive of a geological feature.
C07	C07AC1-HF-A016	1010382.69	10506794.48	73.16	2.00	1.12	Discrete, elliptical anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C07	C07AC1-HF-A017	1010398.85	10506778.33	73.16	4.30	1.48	Cluster of sub-rounded anomalies suggestive of stratigraphic reflectors.
C07	C07AC1-HF-A018	1010412.68	10506793.85	80.22	2.66	1.67	Discrete, elliptical anomaly suggestive of a geological feature.
C07	C07AC1-HF-A019	1010397.92	10506784.66	80.71	2.13	1.64	Discrete, sub-rounded anomaly suggestive of a geological feature.
C07	C07AC1-HF-A020	1010401.71	10506780.11	80.87	8.79	2.72	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C07	C07AC1-HF-A021	1010403.13	10506786.77	82.84	9.78	6.92	Irregular cluster of anomalies suggestive of stratigraphic reflectors.
C07	C07AC1-HF-A022	1010411.88	10506794.03	85.30	2.56	1.57	Discrete, elliptical anomaly suggestive of a geological feature.
C07	C07AC1-HF-A023	1010398.64	10506785.97	89.73	2.82	1.54	Discrete, elliptical anomaly suggestive of a geological feature.
C07	C07AC1-HF-A024	1010395.61	10506794.90	90.72	2.33	2.10	Discrete, sub-rounded anomaly suggestive of a geological feature.
C07	C07AC1-HF-A025	1010410.20	10506779.93	93.18	6.04	3.02	Discrete, irregular anomaly suggestive of a geological feature.
C07	C07AC1-HF-A026	1010410.97	10506781.82	94.49	3.61	1.41	Discrete, elliptical anomaly suggestive of a geological feature.
C07	C07AC1-HF-A027	1010382.96	10506771.39	143.37	21.26	6.17	Linear arrangement of anomalies suggestive of debris.
C08	C08AC1-HF-A001	1010363.56	10506814.68	25.10	1.77	1.15	Irregularly shaped anomaly suggestive of a geological feature.
C08	C08AC1-HF-A002	1010362.10	10506807.20	41.34	2.89	1.48	Irregularly shaped anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C08	C08AC1-HF-A003	1010357.97	10506800.51	40.85	2.40	1.48	Grouping of irregular, discrete anomalies suggestive of a geological feature.
C08	C08AC1-HF-A004	1010367.51	10506797.26	97.93	2.49	1.74	Irregularly shaped anomaly suggestive of a geological feature.
C09*	C09AC1-HF-A001	1010327.33	10506822.26	3.44	26.25	0.66	Discrete, linear anomaly suggestive of a stratigraphic reflector.
C09*	C09AC1-HF-A002	1010345.98	10506833.00	4.59	22.31	0.98	Discrete, linear anomaly suggestive of a stratigraphic reflector.
C09*	C09AC1-PARA-A003	1010348.31	10506815.38	62.01	3.67	2.62	Discrete, rounded anomaly suggestive of a geological feature.
C09*	C09AC1-PARA-A004	1010348.46	10506838.74	63.98	2.95	2.30	Discrete, rounded anomaly suggestive of a geological feature.
C09*	C09AC1-PARA-A005	1010350.51	10506821.96	67.42	3.94	1.97	Discrete, rounded anomaly suggestive of a geological feature.
C09*	C09AC1-PARA-A006	1010339.75	10506847.52	116.80	3.94	3.28	Discrete, rounded anomaly suggestive of debris.
C17	C17AC1-PARA-A001	1010110.26	10507038.76	20.83	3.81	3.18	Discrete, rounded anomaly suggestive of a geological feature.
C17	C17AC1-PARA-A002	1010104.11	10507014.24	52.66	2.99	2.17	Discrete, rounded anomaly suggestive of a geological feature.
C17	C17AC1-PARA-A003	1010101.70	10507018.52	68.73	3.05	1.97	Discrete, rounded anomaly suggestive of a geological feature.
C17	C17AC1-PARA-A004	1010105.82	10507026.32	69.06	1.84	1.90	Discrete, rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
C17	C17AC1-PARA-A005	1010098.34	10507035.69	144.19	30.51	6.23	Large, irregular linear anomaly suggestive of a stratigraphic reflector.
BP01	BP01AC1-HF-A001	1010653.79	10506742.73	33.96	24.74	3.94	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
BP01	BP01AC1-HF-A002	1010638.63	10506756.33	35.76	8.89	3.28	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
BP01	BP01AC1-HF-A003	1010660.01	10506745.61	45.44	19.19	3.28	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
BP01	BP01AC1-PARA-A004	1010659.36	10506752.82	50.36	19.68	4.27	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
BP01	BP01AC1-HF-A005	1010664.03	10506767.61	73.82	3.61	1.97	Discrete, rounded anomaly suggestive of a geological feature.
BP01	BP01AC1-HF-A006	1010652.99	10506764.34	89.57	2.76	2.56	Discrete, rounded anomaly suggestive of a geological feature.
X01	X01AC1-PARA-A001	1010322.42	10506970.36	23.29	23.95	20.18	Irregular cluster of anomalies suggestive of stratigraphic reflectors. The anomaly is on the edge of the acoustic core; thus, its measurements are subject to additional uncertainty.
X03	X03AC1-PARA-A001	1010347.06	10506974.67	64.80	5.91	3.28	Two rounded anomalies suggestive of a geological feature.
X03	X03AC1-PARA-A002	1010344.83	10506970.24	65.62	2.79	2.13	Rounded anomaly suggestive of a geological feature.

Site	Anomaly ID	Easting (ft)	Northing (ft)	Depth Below Mudline (ft)	Effective Diameter (ft)	Effective Width (ft)	Suggestive Interpretation
X03	X03AC1-PARA-A003	1010347.20	10506985.32	143.21	14.27	12.11	Large, rounded anomaly suggestive of a stratigraphic reflector.
X04	X04AC1-HF-A001	1010328.49	10506945.14	13.45	1.84	1.21	Discrete, rounded anomaly suggestive of a geological feature.
X04	X04AC1-HF-A002	1010329.06	10506940.63	25.26	2.20	1.05	Discrete, rounded anomaly suggestive of a geological feature.
X04	X04AC1-HF-A003	1010341.26	10506969.63	74.97	2.82	2.53	Discrete, rounded anomaly suggestive of a geological feature.
X04	X04AC1-PARA-A004	1010344.93	10506951.19	101.38	27.89	4.92	Discrete, elongated anomaly suggestive of a stratigraphic reflector.
X04	X04AC1-HF-A005	1010348.50	10506956.06	135.50	2.95	2.69	Discrete, rounded anomaly suggestive of debris.
X04	X04AC1-HF-A006	1010338.62	10506962.61	146.49	3.18	2.46	Discrete, rounded anomaly suggestive of debris.

6.3.4 Phase D: Visualization and digitization of conductor features

For the final picking and interpretation of the conductors and seabed and basement horizons, the unified migrated volume was analyzed and the results were visualized using OpendTect software. Initial interpretation began with the seabed, where a grid was generated using the inline/crossline data. Each grid line was tracked along the seabed horizon, appearing as a continuous bright reflector within the data. A similar approach was used to construct a series of grid lines, representing the basement surface. Once completed, a gridding technique was applied, using the full range grid extent and an inverse distance weighted algorithm. Subsequently, the grids were filtered and smoothed using an average-type weighting scheme and the 3-D horizon surfaces were created.

The conductors were carefully evaluated in a cross-section (inline) view, tracking the bulls-eye response of each feature along the unified dataset. Specifically, at each inline interval, a location point was marked for each visible conductor. This procedure was repeated along the entirety of the unified volume until the full extent of each conductor had been identified. A total of 18 conductors were interpreted, comprising a digitization of approximately 40 - 50 location points per conductor. Once completed, the conductor and surface interpretations were reviewed by a third geoscientist, before being exported.

The 18 conductors and the inferred seabed and basement horizons were then imported into the NaviModel visualization software for further analysis. Figure 56 and Figure 57 show these horizons at different angles. Each of the conductors was interpolated with an interval of 13ft resulting in approximately 65-69 digitized points for each. By doing so, there is a denser digitization of the features of interest, leading to a more accurate calculation of their depth below seabed. Each conductor was then draped to the seabed and the depth of each of their digitized points at the seabed level was extracted. Therefore, the exact depth below the seabed was calculated for each point for all 18 conductors. From Table 17 to Table 34, the location of each point (in terms of Easting (ft) and Northing (ft)) and their depth below the seabed is displayed for each of the 18 conductors respectively.

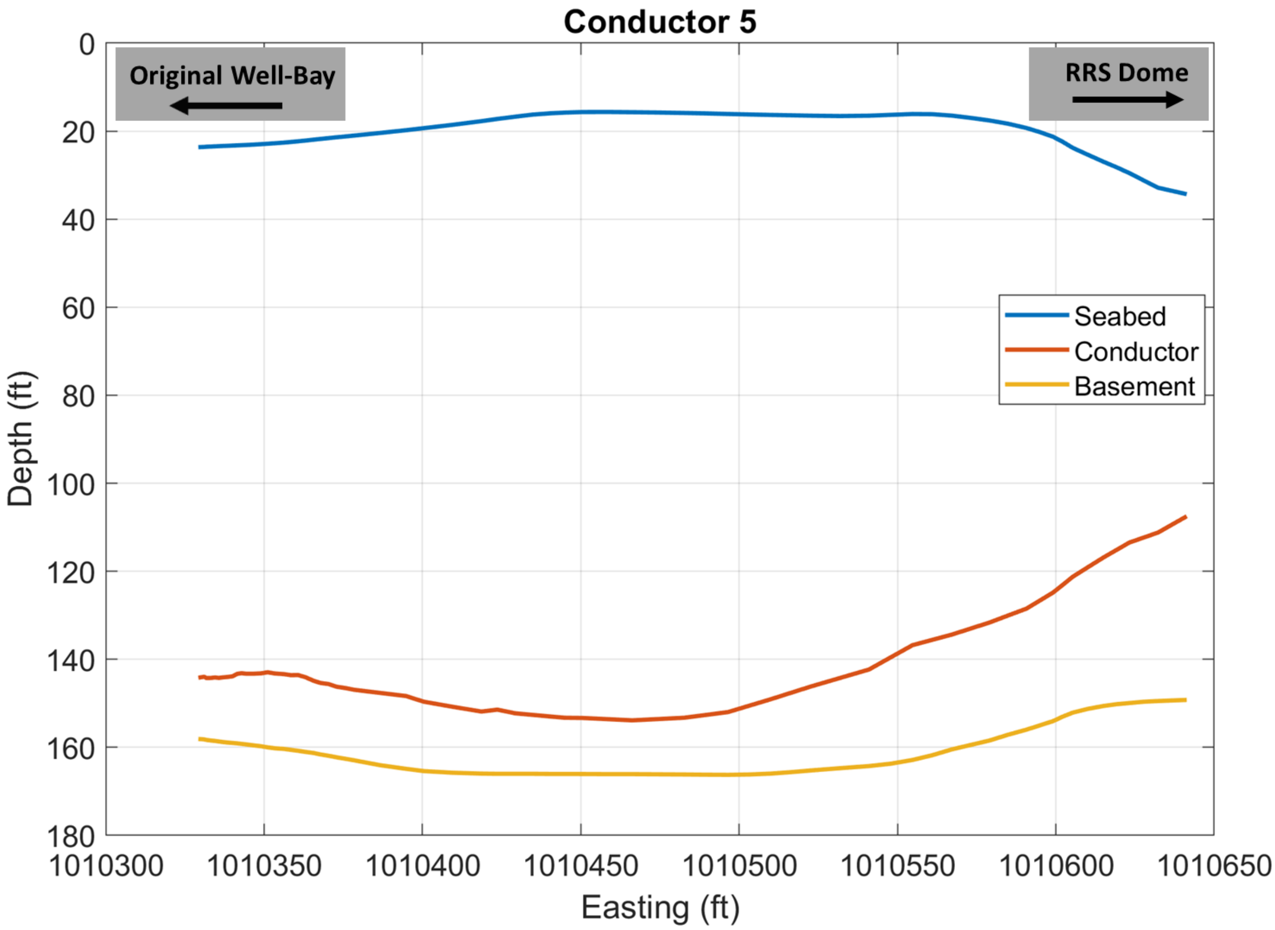

Figure 58 and Figure 59 are examples of a 2D along-track visualization for conductors 5 and 12 respectively, and their locations with respect to the seabed and basement horizons. Figure 60 presents a summary of these tables by displaying the depths below the seabed of the smoothly interpolated conductors in terms of Easting (ft) and Northing (ft).

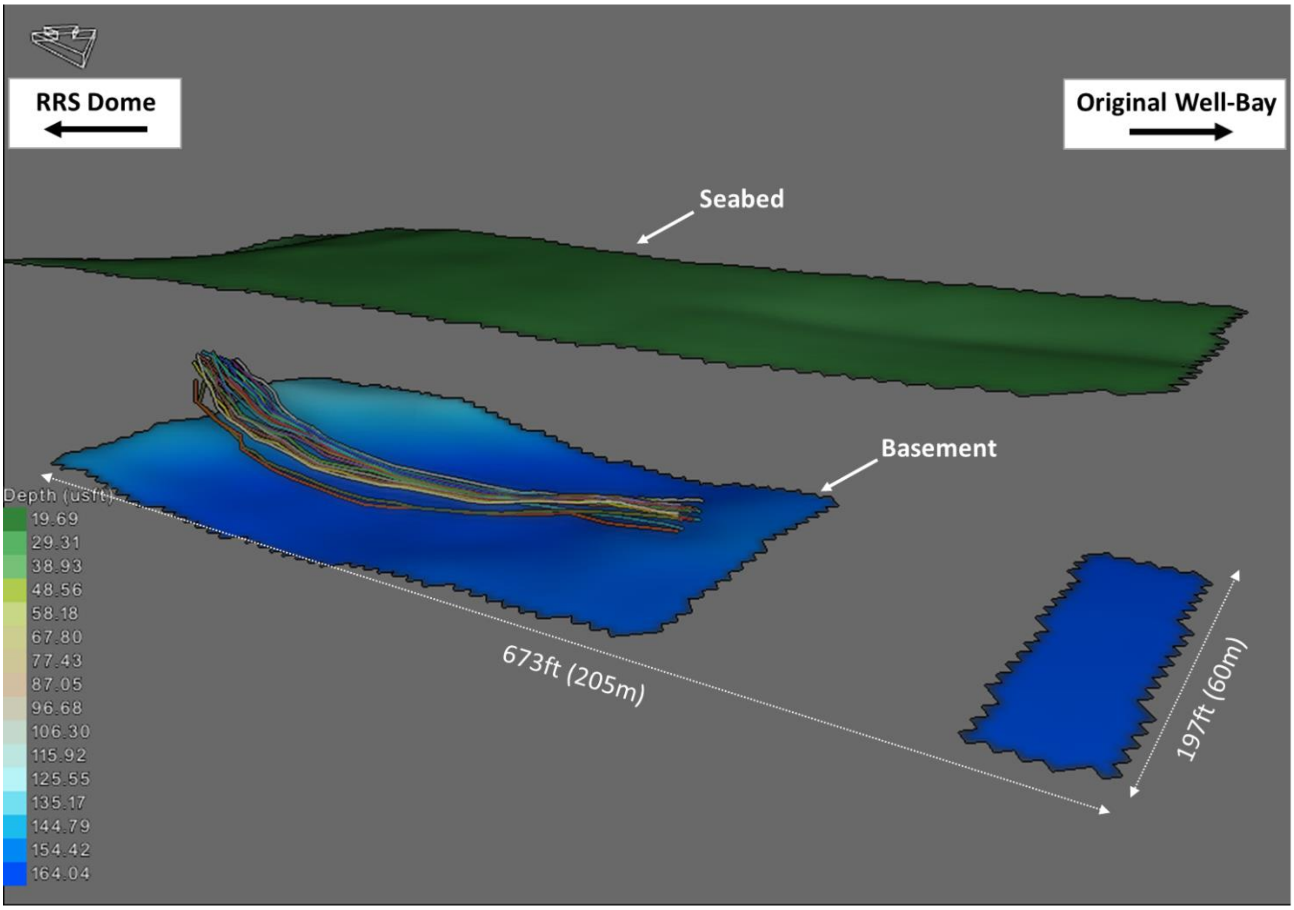

Figure 56 – 3-D visualization of the inferred seabed, basement, and the 18 conductors in NaviModel in the NW direction.

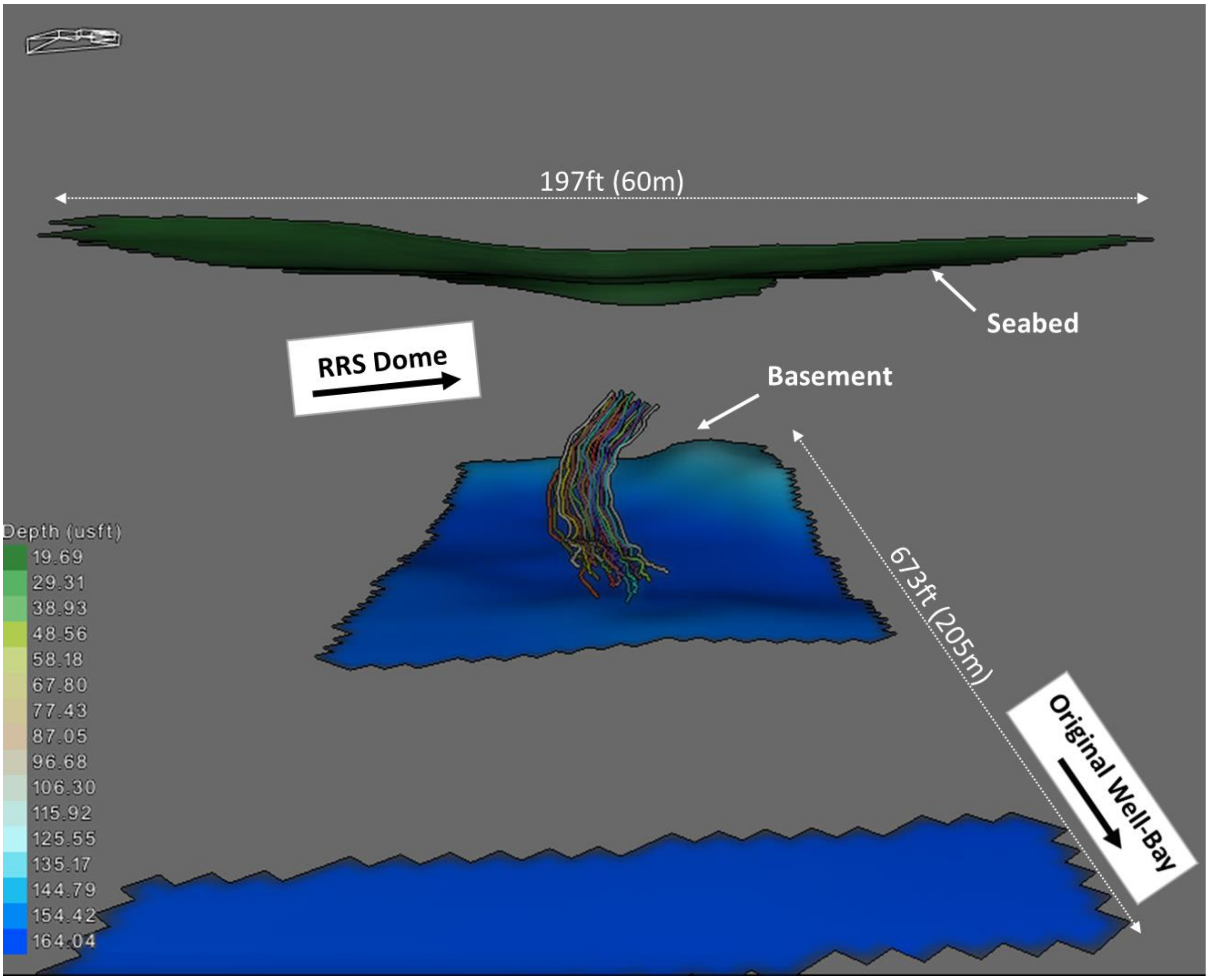

Figure 57 – 3-D visualization of the inferred seabed, basement, and the 18 conductors in Navi Model in the SE direction.

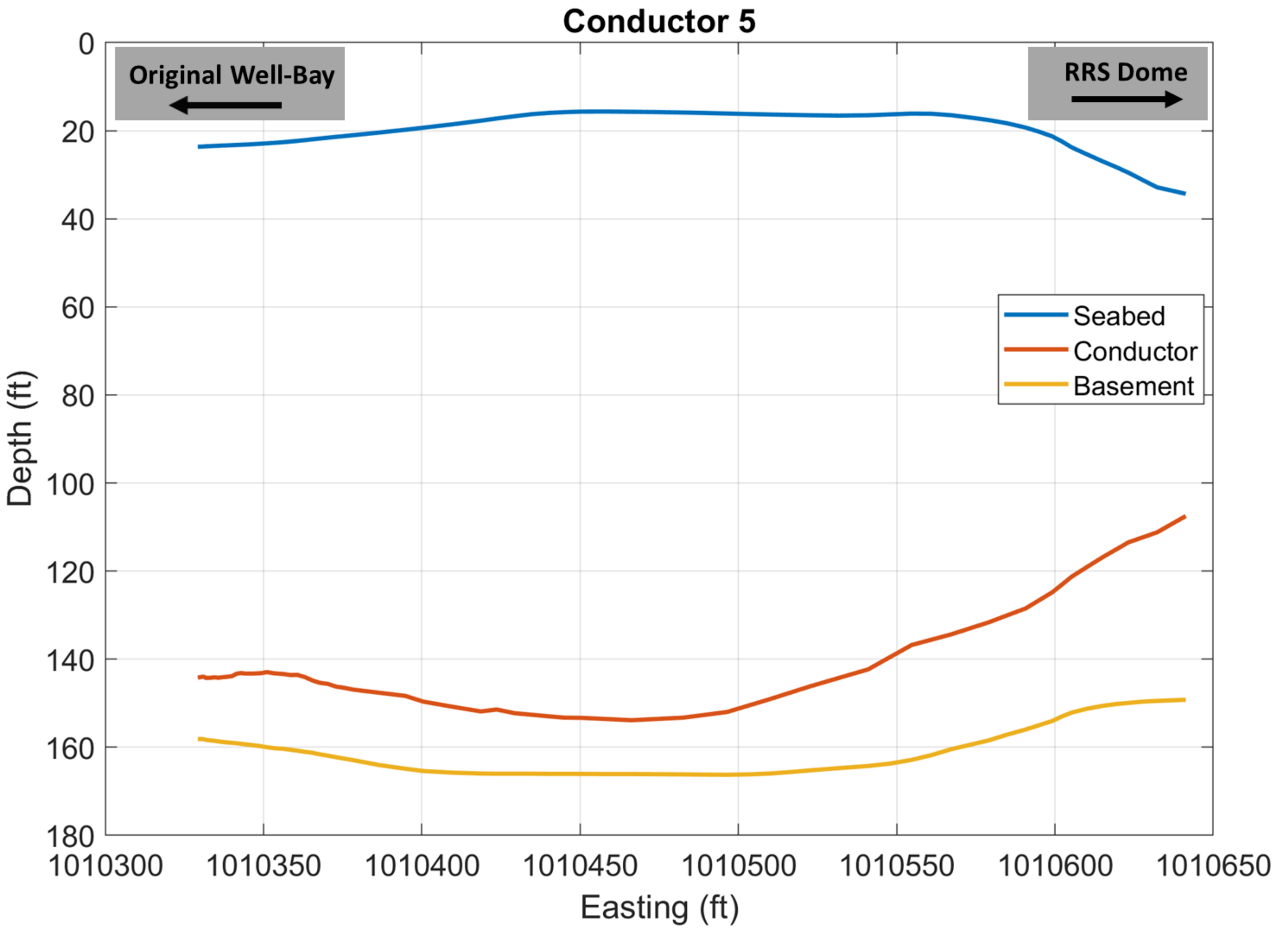

Figure 58 – 2D along-track visualization of the digitized conductor 5

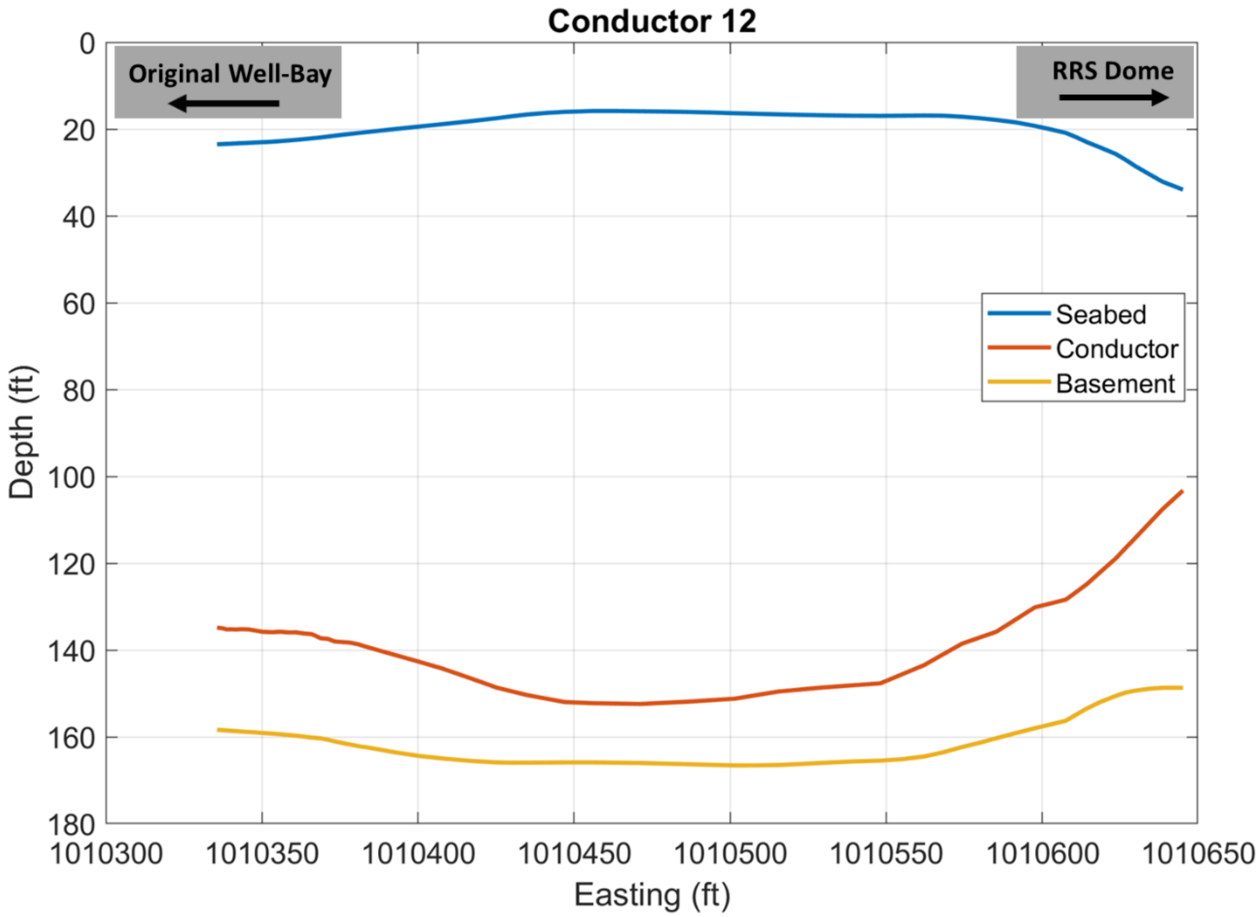

Figure 59 – 2D along-track visualization of the digitized conductor 12

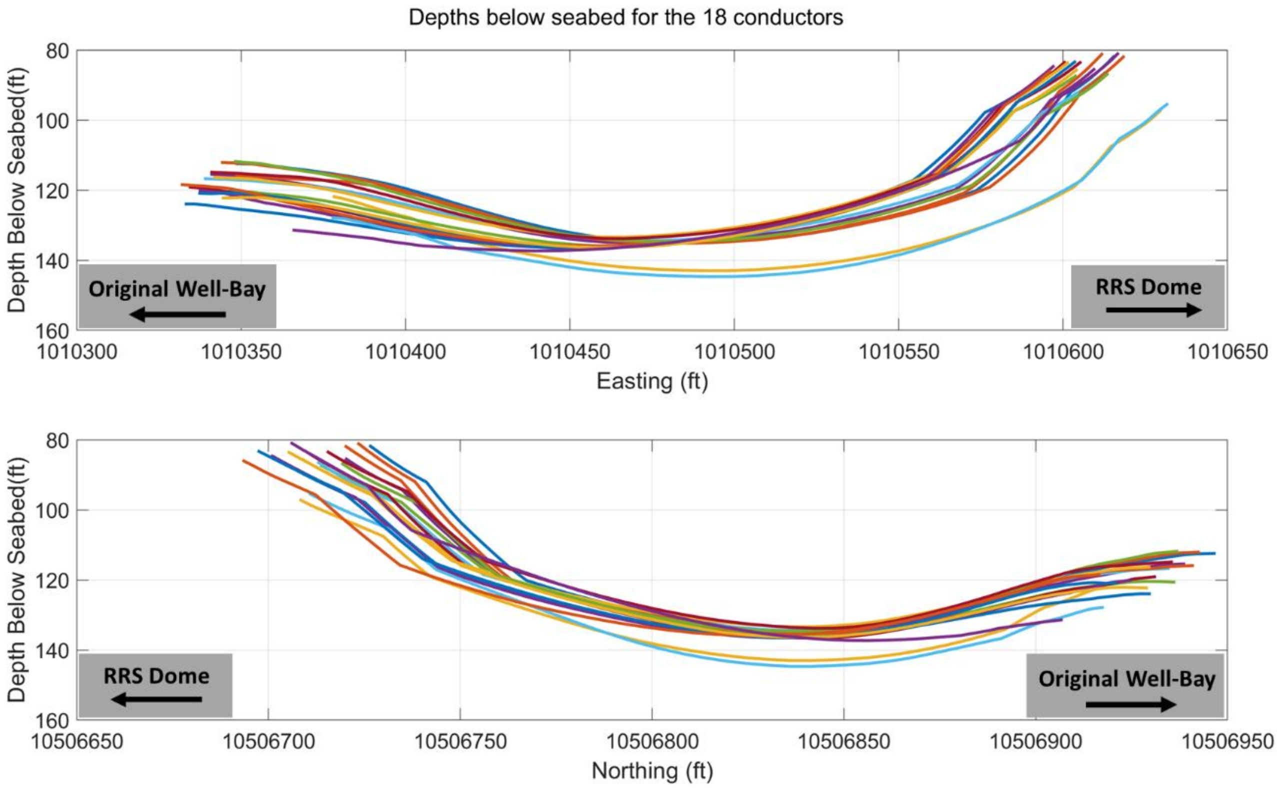

Figure 60 – Summary of all depths below seabed for the 18 conductors

Table 17 – Depth below seabed for Conductor 1

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010337.77	10506953.25	112.27
1010339.67	10506952.98	112.34
1010341.18	10506952.20	112.37
1010342.59	10506951.34	112.37
1010344.01	10506950.46	112.53
1010345.51	10506949.67	112.57
1010347.02	10506948.92	112.63
1010348.63	10506948.26	112.53
1010349.39	10506946.62	112.73
1010350.99	10506945.96	112.73
1010352.04	10506944.68	112.70
1010352.96	10506943.24	113.02
1010355.23	10506940.85	113.12
1010357.69	10506938.68	113.42
1010360.28	10506936.65	113.55
1010362.31	10506933.99	113.94
1010364.48	10506931.49	114.24
1010366.61	10506928.94	114.27
1010369.40	10506927.16	114.70
1010374.32	10506922.80	115.78

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010371.99	10506925.13	115.03
1010376.85	10506920.70	116.83
1010379.70	10506918.99	117.65
1010382.98	10506917.78	118.21
1010386.20	10506916.50	118.96
1010389.44	10506915.22	119.75
1010397.61	10506909.61	121.36
1010405.75	10506903.97	122.90
1010411.98	10506898.65	124.51
1010421.10	10506891.67	127.36
1010430.95	10506885.46	130.05
1010436.43	10506881.79	131.46
1010441.48	10506877.56	133.33
1010446.99	10506872.67	134.38
1010452.50	10506867.75	135.30
1010460.87	10506859.87	135.83
1010468.32	10506853.44	135.89
1010475.80	10506847.05	135.92
1010484.03	10506841.50	135.56
1010492.23	10506835.96	135.14
1010500.11	10506832.54	134.68
1010508.01	10506829.10	134.15
1010514.58	10506824.18	133.66
1010521.14	10506819.22	133.17
1010527.54	10506814.11	132.97
1010533.93	10506808.96	132.78
1010543.25	10506802.16	131.53
1010552.57	10506795.37	130.35
1010559.69	10506788.58	127.79
1010566.84	10506781.79	125.23
1010573.73	10506775.98	123.00
1010580.62	10506770.14	120.67
1010586.39	10506765.52	119.55
1010592.17	10506760.92	118.37
1010597.52	10506754.56	115.42
1010602.86	10506748.19	112.27
1010607.59	10506743.63	109.91
1010612.28	10506739.04	107.51
1010616.38	10506733.73	103.97
1010620.45	10506728.41	100.39
1010623.63	10506719.52	95.90
1010626.78	10506710.63	91.34
1010630.16	10506704.53	87.34

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010633.57	10506698.42	83.23
1010636.92	10506689.76	77.17
1010640.26	10506681.07	71.13
1010643.64	10506672.44	64.96

Table 18 – Depth below seabed for Conductor 2

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010333.63	10506949.42	111.92
1010334.97	10506948.47	111.89
1010336.81	10506948.08	112.00
1010337.57	10506946.46	112.09
1010339.07	10506945.69	112.10
1010341.38	10506945.85	112.42
1010342.50	10506944.64	112.28
1010343.97	10506943.83	112.41
1010345.17	10506942.71	112.50
1010345.80	10506940.93	112.40
1010346.99	10506939.80	112.53
1010348.29	10506938.79	112.56
1010350.99	10506936.90	112.90
1010354.15	10506935.54	113.15
1010357.18	10506934.02	113.35
1010360.10	10506932.38	113.73
1010362.19	10506929.78	114.15
1010364.59	10506927.54	114.29
1010367.18	10506925.52	114.69
1010369.94	10506923.70	115.09
1010372.04	10506921.11	115.67
1010375.10	10506919.64	117.09
1010378.04	10506918.02	117.39
1010380.21	10506915.52	117.75
1010383.02	10506913.75	117.82
1010386.13	10506912.33	118.40
1010394.54	10506907.01	120.87
1010402.96	10506901.70	123.30
1010410.02	10506897.32	125.32
1010418.54	10506889.62	127.95
1010427.47	10506882.39	131.22
1010432.35	10506878.01	132.73
1010437.08	10506873.44	133.80
1010442.96	10506868.95	134.68
1010448.84	10506864.47	135.44
1010457.39	10506856.80	136.20

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010464.94	10506850.48	136.50
1010472.49	10506844.16	136.73
1010480.67	10506838.57	136.29
1010488.85	10506832.99	135.81
1010496.69	10506829.51	135.16
1010504.53	10506826.04	134.46
1010511.31	10506821.35	133.93
1010518.09	10506816.65	133.41
1010524.61	10506811.64	133.08
1010531.12	10506806.63	132.75
1010540.30	10506799.70	131.68
1010549.49	10506792.76	130.70
1010556.55	10506785.88	128.63
1010563.61	10506779.00	126.54
1010569.67	10506772.21	123.70
1010575.73	10506765.43	120.69
1010581.59	10506760.92	119.60
1010587.46	10506756.42	118.48
1010593.84	10506751.26	116.19
1010600.22	10506746.10	113.65
1010605.04	10506741.64	110.79
1010609.87	10506737.18	107.79
1010612.71	10506730.43	104.12
1010615.55	10506723.69	100.31
1010619.89	10506716.17	95.72
1010624.24	10506708.65	90.99
1010626.43	10506701.14	86.34
1010628.61	10506693.64	81.51
1010632.76	10506685.89	75.73
1010636.91	10506678.14	70.01
1010642.47	10506674.54	65.97

Table 19 – Depth below seabed for Conductor 3

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010336.95	10506945.74	118.68
1010344.20	10506941.58	119.10
1010351.45	10506937.43	119.53
1010358.58	10506933.13	120.34
1010365.71	10506928.84	121.25
1010373.31	10506922.58	122.92
1010381.01	10506916.44	125.04
1010388.72	10506910.30	127.13
1010396.42	10506904.16	129.19

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010403.65	10506897.48	131.69
1010412.75	10506892.96	133.70
1010421.85	10506888.44	135.68
1010427.15	10506884.52	137.30
1010429.94	10506882.73	138.21
1010433.19	10506881.49	139.03
1010440.18	10506876.18	140.64
1010447.16	10506870.88	142.14
1010454.14	10506865.58	143.50
1010464.57	10506859.25	144.26
1010475.00	10506852.93	144.82
1010485.43	10506846.60	145.40
1010491.76	10506841.37	145.12
1010498.08	10506836.14	144.84
1010507.21	10506831.65	144.42
1010516.34	10506827.16	144.00
1010524.24	10506821.26	143.09
1010532.15	10506815.35	142.21
1010538.62	10506810.29	141.22
1010545.08	10506805.23	140.22
1010553.60	10506797.53	138.60
1010562.12	10506789.83	136.93
1010568.77	10506784.98	135.61
1010575.42	10506780.12	134.27
1010584.51	10506773.08	131.64
1010588.62	10506767.80	129.88
1010592.72	10506762.51	128.05
1010600.77	10506756.77	125.25
1010605.23	10506746.88	121.52
1010609.15	10506741.37	119.28
1010613.07	10506735.87	116.93
1010617.42	10506730.87	114.49
1010621.77	10506725.87	112.05
1010625.38	10506720.01	109.11
1010628.98	10506714.14	106.13
1010634.42	10506707.89	102.94
1010639.86	10506701.64	99.57
1010640.74	10506692.62	95.50
1010641.62	10506683.60	91.44
1010642.43	10506675.76	87.57
1010643.25	10506667.92	84.18

Table 20 – Depth below seabed for Conductor 4

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010330.01	10506945.23	115.33
1010331.14	10506944.03	115.23
1010332.83	10506943.47	115.34
1010334.45	10506942.84	115.60
1010335.79	10506941.89	115.84
1010336.96	10506940.73	115.55
1010338.50	10506940.00	115.55
1010340.08	10506939.32	115.57
1010341.87	10506938.88	115.88
1010343.34	10506938.08	116.09
1010344.47	10506936.87	115.95
1010345.79	10506935.90	115.97
1010348.58	10506934.11	116.17
1010351.49	10506932.45	116.40
1010354.34	10506930.74	116.54
1010357.06	10506928.87	116.70
1010359.78	10506926.99	117.21
1010362.66	10506925.31	117.80
1010364.86	10506922.84	118.25
1010367.22	10506920.54	118.65
1010369.46	10506918.12	119.38
1010371.84	10506915.86	120.37
1010374.14	10506913.50	121.42
1010377.11	10506911.92	121.97
1010379.72	10506909.93	122.24
1010382.38	10506907.98	122.56
1010390.87	10506902.76	124.00
1010399.37	10506897.53	125.45
1010405.80	10506892.43	126.78
1010415.00	10506885.52	129.32
1010423.33	10506877.60	131.63
1010428.57	10506873.62	132.34
1010433.64	10506869.46	133.53
1010439.36	10506864.79	134.97
1010445.08	10506860.11	136.29
1010453.99	10506852.85	136.07
1010462.04	10506847.13	136.28
1010470.10	10506841.40	136.41
1010477.98	10506835.46	135.96
1010485.85	10506829.51	135.49
1010492.76	10506824.96	134.93
1010499.66	10506820.41	134.33
1010506.51	10506815.79	132.88

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010513.36	10506811.17	131.42
1010520.73	10506807.16	131.00
1010528.10	10506803.14	130.59
1010537.87	10506796.88	129.72
1010547.64	10506790.62	128.91
1010553.71	10506782.60	128.12
1010559.79	10506774.57	127.40
1010566.11	10506768.10	123.70
1010572.44	10506761.62	119.77
1010578.23	10506757.02	118.83
1010584.01	10506752.43	117.80
1010590.22	10506747.07	114.83
1010596.43	10506741.71	111.66
1010600.98	10506736.94	109.55
1010605.54	10506732.17	107.38
1010608.84	10506725.96	104.53
1010612.14	10506719.74	101.63
1010616.95	10506712.76	97.26
1010621.77	10506705.79	92.88
1010625.31	10506699.85	89.78
1010628.85	10506693.91	86.55
1010632.68	10506685.80	81.83
1010636.51	10506677.69	77.20
1010644.43	10506669.28	71.48

Table 21 – Depth below seabed for Conductor 5

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010329.27	10506944.37	120.53
1010331.11	10506943.99	120.36
1010331.74	10506942.21	120.70
1010333.09	10506941.27	120.73
1010334.48	10506940.36	120.66
1010335.71	10506939.28	120.80
1010337.00	10506938.26	120.72
1010338.44	10506937.42	120.67
1010340.01	10506936.73	120.57
1010341.53	10506935.98	120.06
1010342.89	10506935.05	119.95
1010344.23	10506934.09	120.11
1010346.63	10506931.85	120.20
1010349.01	10506929.58	120.22
1010351.11	10506927.00	120.07
1010353.42	10506924.66	120.46

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010356.27	10506922.93	120.75
1010358.49	10506920.48	121.13
1010360.72	10506918.05	121.25
1010363.06	10506915.73	121.92
1010365.54	10506913.58	122.90
1010367.75	10506911.13	123.58
1010370.38	10506909.15	124.03
1010372.96	10506907.12	124.83
1010375.77	10506905.35	125.33
1010378.55	10506903.55	125.92
1010386.64	10506897.86	127.21
1010394.73	10506892.17	128.53
1010400.42	10506886.21	130.30
1010409.46	10506879.10	132.19
1010418.64	10506872.17	134.12
1010423.66	10506867.94	134.20
1010429.25	10506864.37	135.53
1010434.91	10506859.63	136.39
1010440.57	10506854.89	137.05
1010444.85	10506852.32	137.47
1010450.49	10506848.81	137.65
1010458.36	10506842.86	137.94
1010466.23	10506836.92	138.15
1010474.42	10506831.34	137.79
1010482.60	10506825.75	137.39
1010489.55	10506821.25	136.65
1010496.50	10506816.74	135.87
1010503.24	10506812.00	134.30
1010509.98	10506807.25	132.73
1010516.36	10506802.09	131.19
1010522.75	10506796.94	129.65
1010531.87	10506789.93	127.65
1010540.99	10506782.93	125.81
1010547.86	10506775.82	123.23
1010554.73	10506768.72	120.66
1010561.01	10506762.18	119.41
1010567.28	10506755.64	117.87
1010573.13	10506751.12	116.00
1010578.97	10506746.59	114.07
1010584.84	10506740.84	111.76
1010590.71	10506735.09	109.20
1010594.93	10506729.93	106.42
1010599.15	10506724.78	103.54

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010602.22	10506718.30	100.57
1010605.29	10506711.81	97.45
1010610.19	10506704.94	93.64
1010615.10	10506698.07	89.83
1010619.18	10506692.75	86.92
1010623.26	10506687.44	83.89
1010627.79	10506680.13	81.08
1010632.32	10506672.83	78.31
1010641.31	10506665.67	73.17

Table 22 – Depth below seabed for Conductor 6

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010327.00	10506941.75	116.59
1010328.27	10506940.70	116.56
1010329.95	10506940.14	116.59
1010331.64	10506939.59	116.77
1010333.12	10506938.79	116.80
1010334.73	10506938.15	116.82
1010335.77	10506936.84	116.70
1010337.17	10506935.95	116.77
1010338.79	10506935.32	117.11
1010340.15	10506934.39	117.15
1010341.81	10506933.80	117.18
1010342.73	10506932.35	117.28
1010345.43	10506930.46	117.11
1010348.38	10506928.86	117.20
1010351.07	10506926.95	117.98
1010353.21	10506924.40	117.91
1010355.48	10506922.02	117.54
1010357.93	10506919.83	117.30
1010361.05	10506918.43	117.73
1010363.87	10506916.67	118.32
1010366.59	10506914.80	118.96
1010369.49	10506913.14	119.60
1010372.15	10506911.20	120.16
1010375.13	10506909.63	120.59
1010377.95	10506907.88	121.06
1010380.97	10506906.35	121.60
1010389.76	10506901.47	123.72
1010398.55	10506896.59	125.85
1010404.40	10506890.82	127.16
1010413.95	10506884.30	130.24
1010422.73	10506876.91	132.19

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010427.74	10506872.66	133.16
1010432.97	10506868.67	133.98
1010438.80	10506864.14	135.59
1010444.64	10506859.60	137.08
1010453.36	10506852.13	136.33
1010461.04	10506845.96	136.59
1010468.71	10506839.79	136.78
1010476.76	10506834.05	136.25
1010484.81	10506828.31	135.67
1010491.76	10506823.81	135.22
1010498.71	10506819.31	134.72
1010505.09	10506814.15	133.60
1010511.47	10506808.98	132.49
1010518.47	10506804.54	130.98
1010525.47	10506800.09	129.48
1010535.05	10506793.62	128.07
1010544.64	10506787.15	126.77
1010551.09	10506779.56	124.72
1010557.54	10506771.98	122.72
1010564.06	10506765.71	121.27
1010570.57	10506759.45	119.58
1010576.52	10506755.05	118.77
1010582.47	10506750.65	117.92
1010588.93	10506745.57	115.20
1010595.38	10506740.49	112.29
1010600.52	10506736.40	110.36
1010605.65	10506732.31	108.37
1010608.60	10506725.68	105.55
1010611.55	10506719.05	102.64
1010615.62	10506711.22	97.67
1010619.70	10506703.40	92.74
1010623.03	10506697.21	89.26
1010626.36	10506691.03	85.71
1010630.77	10506683.58	81.84
1010635.18	10506676.14	78.03
1010640.27	10506670.75	75.48
1010645.37	10506665.35	73.30

Table 23 – Depth below seabed for Conductor 7

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010323.83	10506938.08	118.65
1010325.41	10506937.40	118.21
1010326.35	10506935.97	118.85

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010327.74	10506935.08	119.18
1010329.52	10506934.63	119.22
1010330.59	10506933.35	119.12
1010332.31	10506932.83	119.61
1010333.70	10506931.94	119.74
1010335.17	10506931.13	119.88
1010336.47	10506930.12	119.99
1010337.96	10506929.34	120.18
1010339.17	10506928.23	120.25
1010341.61	10506926.03	120.62
1010344.26	10506924.09	120.86
1010346.72	10506921.92	121.11
1010349.25	10506919.83	121.55
1010351.76	10506917.71	121.63
1010354.35	10506915.69	121.78
1010356.79	10506913.50	121.79
1010359.44	10506911.55	122.30
1010362.34	10506909.88	123.12
1010365.15	10506908.11	123.66
1010367.97	10506906.36	124.29
1010370.85	10506904.68	124.80
1010373.62	10506902.87	125.36
1010375.98	10506900.57	125.88
1010383.92	10506894.71	127.90
1010391.87	10506888.85	129.94
1010398.33	10506883.79	131.63
1010407.49	10506876.83	133.39
1010415.56	10506868.60	134.96
1010420.92	10506864.77	136.03
1010426.51	10506861.20	137.01
1010432.32	10506856.63	137.62
1010438.13	10506852.07	138.06
1010447.45	10506845.29	138.35
1010455.58	10506839.65	138.31
1010463.72	10506834.01	138.17
1010471.85	10506828.37	137.93
1010479.99	10506822.73	137.69
1010486.97	10506818.27	137.01
1010493.96	10506813.80	136.31
1010500.95	10506809.36	134.95
1010507.95	10506804.91	133.60
1010514.36	10506799.78	132.06
1010520.77	10506794.65	130.51

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010529.49	10506787.18	128.64
1010538.21	10506779.70	126.94
1010545.77	10506773.40	125.46
1010553.33	10506767.09	123.97
1010558.80	10506759.62	121.51
1010564.27	10506752.16	118.62
1010569.70	10506747.15	116.77
1010575.14	10506742.15	114.87
1010581.33	10506736.77	112.66
1010587.52	10506731.39	110.29
1010591.53	10506725.99	107.38
1010595.53	10506720.59	104.35
1010598.37	10506713.84	101.29
1010601.22	10506707.09	98.13
1010606.29	10506700.42	94.04
1010611.36	10506693.74	90.05
1010615.92	10506688.98	86.46
1010620.49	10506684.23	82.85
1010625.66	10506677.67	77.34
1010630.83	10506671.11	71.90
1010636.98	10506660.66	65.34

Table 24 – Depth below seabed for Conductor 8

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010323.63	10506937.84	123.79
1010325.32	10506937.29	123.71
1010326.46	10506936.10	123.82
1010327.51	10506934.80	123.93
1010328.54	10506933.50	124.01
1010329.64	10506932.25	124.16
1010330.82	10506931.12	124.17
1010332.02	10506930.00	124.15
1010333.76	10506929.49	123.97
1010335.28	10506928.75	123.91
1010336.53	10506927.69	123.83
1010337.04	10506925.76	124.75
1010339.68	10506923.80	125.07
1010342.21	10506921.71	125.10
1010344.67	10506919.54	125.22
1010347.14	10506917.38	125.37
1010349.31	10506914.87	125.65
1010351.17	10506912.00	125.65
1010353.22	10506909.37	126.01

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010355.28	10506906.73	126.24
1010357.16	10506903.88	126.53
1010359.31	10506901.35	127.19
1010361.95	10506899.39	127.68
1010364.24	10506897.02	128.11
1010366.90	10506895.08	128.46
1010369.74	10506893.35	128.89
1010377.97	10506887.82	130.07
1010386.20	10506882.30	131.29
1010393.33	10506878.00	132.35
1010402.52	10506871.07	133.66
1010410.69	10506862.96	135.09
1010416.01	10506859.08	135.97
1010423.19	10506857.36	136.51
1010429.06	10506852.86	137.22
1010434.94	10506848.37	137.84
1010445.28	10506842.77	138.09
1010452.87	10506836.51	138.11
1010460.47	10506830.25	138.05
1010468.40	10506824.37	137.67
1010476.33	10506818.49	137.32
1010483.15	10506813.84	136.69
1010489.97	10506809.19	136.06
1010496.88	10506804.64	135.33
1010503.79	10506800.09	134.60
1010509.85	10506794.56	133.24
1010515.91	10506789.02	131.88
1010524.91	10506781.88	129.55
1010533.92	10506774.74	127.47
1010541.37	10506768.31	125.84
1010548.82	10506761.87	124.16
1010554.34	10506754.46	122.19
1010559.85	10506747.04	119.84
1010565.35	10506742.12	118.34
1010570.85	10506737.19	116.73
1010576.33	10506730.98	114.02
1010581.81	10506724.77	111.09
1010585.17	10506718.63	108.55
1010588.53	10506712.49	105.85
1010592.31	10506706.82	102.95
1010596.08	10506701.15	99.98
1010601.04	10506694.34	95.72
1010606.00	10506687.54	91.57

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010610.20	10506682.36	88.18
1010614.41	10506677.19	84.78
1010619.76	10506670.84	80.88
1010625.10	10506664.48	77.06
1010631.06	10506653.81	71.95

Table 25 – Depth below seabed for Conductor 9

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010337.53	10506948.92	115.94
1010339.22	10506948.36	115.92
1010340.38	10506947.20	115.91
1010341.64	10506946.15	115.82
1010342.97	10506945.17	115.74
1010344.11	10506943.99	115.95
1010345.65	10506943.26	116.26
1010346.98	10506942.30	116.20
1010348.22	10506941.22	116.23
1010349.57	10506940.27	116.29
1010351.91	10506937.97	116.73
1010354.69	10506936.16	116.71
1010357.46	10506934.35	116.54
1010360.18	10506932.47	116.68
1010362.80	10506930.50	116.76
1010365.47	10506928.56	117.08
1010368.25	10506926.76	117.51
1010370.86	10506924.77	117.45
1010373.42	10506922.71	117.16
1010376.22	10506920.93	117.40
1010378.82	10506918.92	117.74
1010382.19	10506917.81	117.89
1010385.38	10506916.48	118.55
1010388.61	10506915.20	119.71
1010396.73	10506909.54	121.59
1010404.84	10506903.88	123.44
1010411.49	10506899.02	125.34
1010420.07	10506891.39	127.81
1010429.82	10506885.11	130.53
1010435.07	10506881.14	131.90
1010439.93	10506876.73	133.37
1010445.25	10506871.61	134.47
1010450.58	10506866.48	135.46
1010458.60	10506858.20	136.21
1010466.16	10506851.89	136.53

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010473.72	10506845.58	136.77
1010482.02	10506840.14	136.16
1010490.33	10506834.69	135.52
1010498.45	10506831.56	135.06
1010506.58	10506828.42	134.56
1010513.20	10506823.54	134.00
1010519.83	10506818.66	133.45
1010526.10	10506813.37	132.52
1010532.37	10506808.08	131.59
1010541.72	10506801.34	131.24
1010551.07	10506794.60	130.93
1010558.32	10506787.93	128.55
1010565.57	10506781.27	126.11
1010571.63	10506774.48	123.92
1010577.68	10506767.68	121.60
1010583.70	10506763.36	120.59
1010589.72	10506759.04	119.56
1010595.63	10506753.33	117.01
1010601.54	10506747.63	114.23
1010606.25	10506743.04	111.76
1010610.96	10506738.45	109.22
1010613.99	10506731.92	105.83
1010617.01	10506725.38	102.33
1010621.97	10506718.58	98.28
1010626.93	10506711.77	94.20
1010629.29	10506704.46	90.34
1010631.64	10506697.15	86.30
1010636.54	10506690.27	81.49
1010641.43	10506683.39	76.59
1010644.29	10506677.91	73.10
1010647.15	10506672.43	69.83

Table 26 – Depth below seabed for Conductor 10

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010330.02	10506937.72	116.18
1010331.37	10506936.76	116.28
1010332.47	10506935.53	116.29
1010333.92	10506934.70	116.21
1010335.05	10506933.50	116.33
1010336.71	10506932.91	116.33
1010338.27	10506932.21	116.51
1010339.74	10506931.40	116.70
1010341.11	10506930.47	116.64

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010343.98	10506928.79	116.87
1010347.07	10506927.34	116.83
1010349.71	10506925.37	116.82
1010352.18	10506923.22	116.76
1010354.02	10506920.33	117.03
1010356.53	10506918.21	117.26
1010359.27	10506916.37	117.52
1010362.70	10506915.31	117.84
1010365.45	10506913.48	118.62
1010368.08	10506911.51	119.17
1010370.66	10506909.47	119.73
1010373.42	10506907.65	120.27
1010376.07	10506905.70	121.08
1010378.91	10506903.97	121.72
1010387.51	10506898.86	123.88
1010396.10	10506893.75	126.05
1010401.62	10506887.60	127.14
1010411.08	10506880.98	129.24
1010420.74	10506874.60	131.83
1010426.12	10506870.78	133.10
1010431.54	10506867.03	133.79
1010437.21	10506862.30	134.26
1010442.89	10506857.57	134.60
1010451.82	10506850.35	135.15
1010459.50	10506844.18	135.00
1010467.17	10506838.01	134.76
1010474.65	10506831.61	134.62
1010482.13	10506825.21	134.46
1010488.91	10506820.51	133.79
1010495.68	10506815.80	133.11
1010501.85	10506810.39	131.94
1010508.01	10506804.98	130.78
1010514.18	10506799.58	129.62
1010520.36	10506794.17	128.45
1010528.78	10506786.36	126.77
1010537.21	10506778.55	125.28
1010544.14	10506771.51	123.43
1010551.06	10506764.48	121.56
1010557.26	10506757.84	120.00
1010563.45	10506751.21	117.99
1010568.48	10506745.74	116.07
1010573.51	10506740.27	114.09
1010579.55	10506734.72	111.77

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010585.59	10506729.16	109.24
1010590.28	10506724.55	105.86
1010594.97	10506719.93	102.36
1010598.04	10506713.46	99.21
1010601.12	10506706.98	95.96
1010606.18	10506700.29	92.23
1010611.24	10506693.60	88.59
1010614.95	10506687.86	85.67
1010618.66	10506682.11	82.72
1010622.44	10506673.94	78.20
1010626.22	10506665.77	73.83
1010633.84	10506657.02	69.99

Table 27 – Depth below seabed for Conductor 11

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010326.33	10506933.44	119.42
1010327.53	10506932.32	119.51
1010328.35	10506930.77	119.67
1010330.08	10506930.25	119.97
1010331.35	10506929.21	120.20
1010332.76	10506928.33	120.56
1010334.20	10506927.49	120.65
1010335.59	10506926.59	120.73
1010337.03	10506925.75	120.83
1010339.71	10506923.84	121.21
1010342.18	10506921.67	121.54
1010344.65	10506919.52	121.69
1010346.96	10506917.17	122.21
1010348.97	10506914.47	122.64
1010351.51	10506912.40	123.38
1010354.54	10506910.89	124.00
1010357.55	10506909.36	124.68
1010360.26	10506907.47	125.24
1010362.71	10506905.29	125.77
1010365.08	10506903.02	126.31
1010367.79	10506901.14	126.92
1010370.42	10506899.16	127.45
1010373.17	10506897.33	128.17
1010380.98	10506891.30	129.57
1010388.78	10506885.28	131.01
1010395.43	10506880.43	132.23
1010404.11	10506872.91	133.66
1010412.64	10506865.22	135.58

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010417.14	10506860.40	136.20
1010424.19	10506858.51	136.63
1010430.19	10506854.17	137.27
1010436.20	10506849.83	137.79
1010446.04	10506843.66	138.19
1010453.71	10506837.48	138.14
1010461.38	10506831.30	138.01
1010469.35	10506825.47	137.55
1010477.32	10506819.64	137.10
1010484.47	10506815.37	136.54
1010491.61	10506811.09	135.97
1010498.72	10506806.77	134.88
1010505.82	10506802.44	133.76
1010511.98	10506797.02	132.64
1010518.14	10506791.60	131.50
1010526.65	10506783.90	129.38
1010535.17	10506776.19	127.48
1010542.49	10506769.61	125.86
1010549.81	10506763.03	124.21
1010555.43	10506755.73	121.99
1010561.05	10506748.43	119.40
1010566.56	10506743.52	117.81
1010572.07	10506738.61	116.15
1010577.96	10506732.87	113.66
1010583.85	10506727.14	110.93
1010586.86	10506720.59	107.66
1010589.87	10506714.04	104.23
1010592.78	10506707.36	100.62
1010595.68	10506700.68	96.91
1010600.41	10506693.61	92.92
1010605.14	10506686.55	89.06
1010609.07	10506681.06	86.00
1010613.00	10506675.57	82.94
1010618.02	10506668.83	79.14
1010623.04	10506662.10	75.45
1010625.32	10506657.20	73.19

Table 28 – Depth below seabed for Conductor 12

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010335.62	10506944.20	111.35
1010337.21	10506943.53	111.51
1010338.72	10506942.77	111.84
1010340.17	10506941.94	111.87

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010341.66	10506941.15	111.97
1010343.00	10506940.20	111.96
1010344.46	10506939.37	112.00
1010345.86	10506938.49	112.10
1010347.49	10506937.86	112.35
1010350.16	10506935.94	112.78
1010353.13	10506934.36	112.97
1010355.96	10506932.61	113.02
1010358.33	10506930.34	113.30
1010360.89	10506928.27	113.44
1010363.57	10506926.36	113.89
1010366.02	10506924.18	114.22
1010368.84	10506922.42	115.35
1010371.12	10506920.04	115.71
1010373.31	10506917.56	116.51
1010375.57	10506915.15	116.83
1010378.08	10506913.05	117.15
1010380.87	10506911.25	117.78
1010384.17	10506910.06	118.77
1010392.44	10506904.57	121.09
1010400.70	10506899.08	123.39
1010407.66	10506894.59	125.36
1010416.80	10506887.60	128.33
1010425.23	10506879.79	131.18
1010429.77	10506875.02	132.39
1010434.96	10506870.99	133.74
1010440.94	10506866.62	134.89
1010446.93	10506862.25	135.94
1010455.95	10506855.12	136.41
1010463.63	10506848.96	136.50
1010471.31	10506842.79	136.53
1010479.14	10506836.80	136.18
1010486.98	10506830.82	135.81
1010494.25	10506826.69	135.35
1010501.52	10506822.57	134.86
1010508.50	10506818.09	133.90
1010515.47	10506813.61	132.95
1010522.40	10506809.09	132.39
1010529.33	10506804.57	131.83
1010538.73	10506797.88	131.24
1010548.13	10506791.20	130.72
1010555.12	10506784.23	128.66
1010562.11	10506777.27	126.60

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010568.20	10506770.51	124.09
1010574.28	10506763.74	121.39
1010579.78	10506758.82	119.69
1010585.28	10506753.89	117.91
1010591.43	10506748.47	114.54
1010597.59	10506743.05	110.93
1010602.59	10506738.80	109.25
1010607.59	10506734.55	107.49
1010610.92	10506728.37	104.72
1010614.25	10506722.18	101.85
1010618.90	10506715.02	97.53
1010623.56	10506707.86	93.13
1010626.65	10506701.40	89.50
1010629.73	10506694.93	85.70
1010634.13	10506687.48	80.56
1010638.52	10506680.02	75.45
1010645.04	10506669.99	69.31

Table 29 – Depth below seabed for Conductor 13

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010337.29	10506946.13	126.04
1010344.47	10506941.90	126.40
1010351.66	10506937.67	126.77
1010359.00	10506933.62	127.29
1010366.34	10506929.57	127.91
1010374.66	10506924.15	128.75
1010381.58	10506917.10	129.43
1010388.49	10506910.04	130.06
1010395.41	10506902.99	130.64
1010401.28	10506894.74	134.34
1010410.22	10506890.02	136.42
1010419.15	10506885.31	138.50
1010424.77	10506881.77	139.67
1010428.72	10506881.33	139.46
1010431.96	10506880.06	140.23
1010439.25	10506875.12	141.71
1010446.54	10506870.17	143.05
1010453.83	10506865.22	144.24
1010463.72	10506858.27	145.12
1010473.61	10506851.32	145.81
1010483.51	10506844.37	146.52
1010491.08	10506840.59	147.16
1010498.66	10506836.81	147.80

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010508.32	10506832.94	147.14
1010517.97	10506829.06	146.47
1010525.83	10506823.10	145.39
1010533.69	10506817.14	144.35
1010540.00	10506811.90	143.18
1010546.31	10506806.66	142.01
1010555.78	10506800.06	139.90
1010565.26	10506793.45	137.73
1010571.66	10506788.32	136.09
1010578.06	10506783.19	134.44
1010586.72	10506775.64	130.74
1010595.01	10506765.72	128.33
1010602.23	10506758.46	125.29
1010603.28	10506752.15	122.44
1010604.33	10506745.84	119.44
1010609.25	10506741.48	116.80
1010614.16	10506737.13	114.08
1010618.88	10506732.56	111.57
1010623.61	10506728.00	109.00
1010627.36	10506722.30	106.53
1010631.11	10506716.60	104.02
1010636.09	10506709.83	100.75
1010641.08	10506703.06	97.26
1010642.86	10506695.08	93.65
1010644.64	10506687.10	89.97
1010646.14	10506680.04	86.55
1010647.63	10506672.99	83.45

Table 30 – Depth below seabed for Conductor 14

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010329.48	10506942.11	114.48
1010330.88	10506941.22	114.52
1010332.30	10506940.35	114.64
1010333.60	10506939.34	114.74
1010335.32	10506938.83	114.94
1010336.99	10506938.26	115.13
1010338.12	10506937.06	115.09
1010339.68	10506936.35	115.14
1010341.26	10506935.67	115.45
1010342.85	10506935.00	115.33
1010343.90	10506933.71	115.28
1010346.85	10506932.10	115.69
1010349.82	10506930.52	115.71

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010352.58	10506928.70	115.58
1010355.41	10506926.96	115.82
1010357.80	10506924.70	115.79
1010360.14	10506922.39	115.89
1010362.45	10506920.04	115.79
1010365.34	10506918.37	115.89
1010368.44	10506916.95	116.10
1010371.29	10506915.22	116.56
1010374.24	10506913.62	117.08
1010377.06	10506911.86	117.49
1010379.49	10506909.67	117.50
1010381.70	10506907.19	118.39
1010389.61	10506901.30	120.78
1010397.53	10506895.41	123.19
1010404.49	10506890.92	125.47
1010414.18	10506884.57	128.80
1010422.56	10506876.70	131.34
1010427.67	10506872.58	132.54
1010433.01	10506868.72	133.24
1010438.67	10506863.98	134.78
1010444.33	10506859.24	136.20
1010453.36	10506852.13	135.65
1010461.31	10506846.27	135.85
1010469.25	10506840.41	135.97
1010477.12	10506834.47	135.45
1010485.00	10506828.53	134.90
1010491.84	10506823.90	134.39
1010498.69	10506819.28	133.82
1010504.57	10506813.54	132.54
1010510.45	10506807.81	131.26
1010517.68	10506803.63	129.57
1010524.91	10506799.45	127.89
1010533.91	10506792.30	126.64
1010542.91	10506785.14	125.53
1010549.57	10506777.80	124.32
1010556.23	10506770.45	123.12
1010562.50	10506763.92	120.64
1010568.78	10506757.38	117.91
1010575.19	10506753.51	115.86
1010581.60	10506749.63	113.82
1010587.27	10506743.65	110.93
1010592.94	10506737.67	107.82
1010596.80	10506732.10	105.36

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010600.66	10506726.53	102.75
1010603.68	10506719.99	100.13
1010606.70	10506713.44	97.38
1010611.75	10506706.75	93.51
1010616.81	10506700.05	89.62
1010620.65	10506694.46	86.28
1010624.49	10506688.87	82.84
1010628.99	10506681.53	77.66
1010633.49	10506674.18	72.55
1010637.71	10506664.01	66.73

Table 31 – Depth below seabed for Conductor 15

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010324.84	10506929.21	120.65
1010326.18	10506928.24	120.92
1010327.61	10506927.39	121.03
1010329.02	10506926.52	120.89
1010330.32	10506925.51	120.96
1010331.46	10506924.32	120.85
1010333.21	10506923.84	120.72
1010334.99	10506923.40	120.83
1010337.79	10506921.61	121.21
1010340.68	10506919.94	121.29
1010342.86	10506917.44	121.36
1010344.98	10506914.88	120.59
1010347.25	10506912.49	120.20
1010350.58	10506911.32	120.20
1010353.20	10506909.34	120.28
1010356.42	10506908.05	120.91
1010359.34	10506906.41	121.77
1010362.38	10506904.90	122.64
1010365.21	10506903.16	123.34
1010368.21	10506901.62	123.89
1010371.33	10506900.22	124.44
1010373.60	10506897.81	125.16
1010381.80	10506892.25	127.98
1010390.00	10506886.69	130.82
1010396.62	10506881.81	131.84
1010405.52	10506874.55	133.55
1010414.63	10506867.52	135.49
1010419.72	10506863.38	136.02
1010425.34	10506859.85	136.87
1010431.17	10506855.31	137.43

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010437.00	10506850.76	137.85
1010446.75	10506844.48	138.22
1010454.71	10506838.64	138.19
1010462.67	10506832.80	138.04
1010470.63	10506826.95	137.58
1010478.58	10506821.10	137.11
1010485.79	10506816.89	136.48
1010493.00	10506812.69	135.82
1010499.99	10506808.24	134.51
1010506.99	10506803.79	133.19
1010513.21	10506798.45	132.21
1010519.44	10506793.11	131.22
1010528.18	10506785.66	129.06
1010536.92	10506778.21	127.10
1010544.12	10506771.50	125.65
1010551.33	10506764.78	124.18
1010556.91	10506757.44	121.87
1010562.49	10506750.10	119.13
1010568.09	10506745.28	117.38
1010573.69	10506740.47	115.61
1010579.66	10506734.84	113.06
1010585.63	10506729.20	110.30
1010589.27	10506723.38	107.54
1010592.91	10506717.55	104.64
1010595.87	10506710.95	101.35
1010598.84	10506704.34	97.96
1010603.93	10506697.68	94.28
1010609.02	10506691.03	90.65
1010612.30	10506684.80	87.26
1010615.59	10506678.56	83.85
1010620.02	10506671.14	81.13
1010624.45	10506663.72	78.51
1010627.01	10506657.90	75.90
1010629.56	10506652.07	73.51

Table 32 – Depth below seabed for Conductor 16

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010320.47	10506924.14	118.10
1010321.42	10506922.74	118.08
1010322.74	10506921.76	118.22
1010324.34	10506921.10	118.37
1010325.64	10506920.10	118.58
1010326.96	10506919.12	118.70

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010328.16	10506918.00	118.67
1010330.43	10506918.11	119.22
1010333.37	10506916.50	119.70
1010335.87	10506914.37	119.77
1010337.23	10506913.44	120.07
1010342.01	10506911.44	121.17
1010344.69	10506909.53	120.90
1010350.49	10506906.20	122.39
1010356.28	10506902.87	123.94
1010358.22	10506900.10	124.14
1010367.55	10506893.33	125.98
1010376.88	10506886.56	127.87
1010379.33	10506884.38	128.53
1010384.70	10506880.55	129.47
1010391.82	10506876.25	131.38
1010399.36	10506867.41	133.36
1010408.26	10506860.14	134.74
1010414.15	10506856.93	135.53
1010421.97	10506855.95	136.20
1010427.83	10506851.44	136.66
1010433.69	10506846.93	137.00
1010443.04	10506840.18	137.12
1010450.84	10506834.16	136.94
1010458.64	10506828.13	136.67
1010466.50	10506822.17	136.43
1010474.36	10506816.21	136.20
1010481.30	10506811.70	135.57
1010488.23	10506807.18	134.93
1010495.03	10506802.50	134.48
1010501.82	10506797.81	134.04
1010507.91	10506792.31	133.11
1010514.00	10506786.82	132.18
1010523.49	10506780.23	129.79
1010532.97	10506773.65	127.63
1010540.36	10506767.14	126.18
1010547.74	10506760.63	124.66
1010553.17	10506753.11	122.70
1010558.61	10506745.60	120.35
1010564.24	10506740.83	118.31
1010569.87	10506736.06	116.18
1010575.13	10506729.59	112.91
1010580.38	10506723.13	109.42
1010583.34	10506716.52	107.60

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010586.30	10506709.91	105.57
1010588.92	10506702.90	101.66
1010591.54	10506695.89	97.64
1010596.27	10506688.82	93.77
1010601.00	10506681.74	89.99
1010606.00	10506677.50	87.51
1010611.01	10506673.25	85.11
1010615.00	10506665.33	81.18
1010619.00	10506657.41	77.48
1010625.27	10506647.11	74.20

Table 33 – Depth below seabed for Conductor 17

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010334.33	10506940.20	122.21
1010335.34	10506938.85	122.28
1010335.62	10506936.67	122.43
1010336.60	10506935.29	122.29
1010337.64	10506933.99	122.21
1010338.80	10506932.82	122.28
1010340.26	10506932.00	122.33
1010341.56	10506931.00	122.28
1010344.11	10506928.93	122.04
1010346.57	10506926.76	122.05
1010349.36	10506924.97	122.03
1010351.69	10506922.65	121.85
1010354.10	10506920.42	121.56
1010356.58	10506918.27	121.56
1010359.00	10506916.06	121.96
1010361.71	10506914.17	122.39
1010364.18	10506912.01	123.09
1010366.63	10506909.82	123.65
1010369.14	10506907.72	124.26
1010372.08	10506906.10	124.90
1010374.78	10506904.21	125.36
1010377.68	10506902.55	126.23
1010382.54	10506898.13	127.36
1010387.40	10506893.72	128.48
1010392.77	10506889.90	129.23
1010399.68	10506885.35	131.33
1010408.31	10506877.78	133.27
1010416.63	10506869.84	134.42
1010421.58	10506865.53	135.48
1010427.65	10506862.51	136.31

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010433.49	10506857.99	137.12
1010439.34	10506853.47	137.74
1010448.55	10506846.56	138.25
1010456.83	10506841.09	138.26
1010465.11	10506835.62	138.17
1010473.03	10506829.72	137.91
1010480.94	10506823.83	137.65
1010487.97	10506819.42	136.84
1010495.00	10506815.01	136.02
1010501.93	10506810.49	134.86
1010508.87	10506805.97	133.70
1010515.35	10506800.92	132.20
1010521.83	10506795.88	130.67
1010530.78	10506788.67	128.42
1010539.73	10506781.47	126.32
1010546.55	10506774.31	123.67
1010553.38	10506767.15	121.02
1010559.75	10506760.73	120.10
1010566.12	10506754.30	118.84
1010571.29	10506749.00	117.26
1010576.47	10506743.70	115.58
1010582.72	10506738.38	113.44
1010588.97	10506733.06	111.12
1010593.32	10506728.07	107.93
1010597.67	10506723.07	104.63
1010601.25	10506717.17	101.66
1010604.83	10506711.27	98.54
1010609.04	10506703.60	94.77
1010613.25	10506695.93	91.04
1010617.48	10506690.79	87.47
1010621.72	10506685.66	83.84
1010625.51	10506677.50	79.90
1010629.31	10506669.34	76.07
1010632.55	10506663.06	71.99

Table 34 – Depth below seabed for Conductor 18

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010333.34	10506934.03	129.83
1010338.36	10506928.54	130.15
1010343.37	10506923.06	130.49
1010347.78	10506920.63	130.65
1010354.02	10506915.30	131.32
1010360.25	10506909.98	132.07
1010366.68	10506904.87	132.88

Easting (ft)	Northing (ft)	Depth Below Seabed (ft)
1010372.97	10506900.86	133.56
1010379.26	10506896.85	134.26
1010388.47	10506889.94	135.16
1010397.68	10506883.03	136.10
1010405.60	10506877.14	136.90
1010412.76	10506872.89	137.58
1010419.93	10506868.64	138.32
1010427.44	10506864.79	138.71
1010434.95	10506860.93	138.98
1010442.07	10506856.62	136.78
1010445.87	10506853.50	137.28
1010451.70	10506850.21	137.83
1010459.43	10506844.11	137.96
1010467.17	10506838.01	138.01
1010476.12	10506832.06	137.47
1010485.07	10506826.11	136.89
1010491.00	10506821.67	135.76
1010496.93	10506817.24	134.60
1010503.47	10506812.27	132.80
1010510.02	10506807.31	130.99
1010516.20	10506801.91	129.96
1010522.38	10506796.51	128.91
1010530.98	10506788.90	126.32
1010539.58	10506781.30	123.90
1010547.74	10506775.69	121.76
1010555.90	10506770.08	119.58
1010562.91	10506764.38	118.28
1010569.91	10506758.69	116.73
1010576.68	10506755.23	114.80
1010583.45	10506751.78	112.87
1010589.04	10506745.70	110.15
1010594.62	10506739.62	107.19
1010598.68	10506734.27	104.42
1010602.73	10506728.92	101.53
1010606.54	10506723.30	99.01
1010610.36	10506717.68	96.47
1010615.28	10506710.83	92.54
1010620.21	10506703.98	88.67
1010623.15	10506697.36	84.17
1010626.10	10506690.73	79.61
1010629.64	10506682.28	73.48
1010633.19	10506673.84	67.47
1010642.06	10506666.55	63.92

7 CONCLUSION

PanGeo Subsea carried out sixty-three (63) Acoustic CorerTM (AC) surveys for Couvillion Group in support of the decommissioning of the Mississippi Canyon Site 20 (MC-20) platform, which was overturned from a mudslide in 2004. The AC surveys were carried out from May 18th – July 8th, 2022. All equipment was mobilized onto the MSV*Ocean Evolution*, a vessel managed by Couvillion.

JYG-Cross acoustic core data was acquired at seven (7) Sites: C04, A06, C09, A11, C14, A16, and AP12. In addition, high and low frequency (HF and LF) and Innomar/Parametric SAS surveys were acquired at sixty-three (63) Sites: B09, C04, A06, C09, A11, C14, A16, B08, B10, A03, A04, A05, A09, A10, A12, A07, A08, A17, B17, C17, C08, C07, B07, B06, B05, C06, C05, B04, B03, C03, AP10, AP09, AP08, AP06, AP07, C02, B02, A02, C01, B01, A01, AP01, AP02, AP03, AP04, AP05, AP11, AP12, B12, B11, AP13, AP14, B14, A13, X01, X02, X03, X04, BP01, B13, AP0, B15, and AP15. Fieldwork was carried out with the support of Couvillion. The working relationship between Couvillion and PanGeo was collaborative, which was to the benefit of the project.

The results highlighted chaotic mud slide clay blocks interspersed within a depositional distribution of weak unconsolidated bounded very fine sediments dispersed in the upper seabed region. A more densely consolidated geological dominant basement was revealed sloping from a depth of approximately 136ft to 165 ft across the region. Of significance were smooth and continuous linear conductors reposing onto this basement geology. The initial interpretation of the Acoustic Corer data sets resulted in the identification of 307 linear features, which are discontinuous and continuous elongated features representative of conductor pipes, and 482 anomalies. Upon further analysis of the unified migrated volume, these linear features were interpreted to be eighteen (18) continuous conductor pipes from the collector dome towards the conductor bay.

Post-processing and analysis of these features showed a conductor bundle primarily in Rows AP and A running from beneath the RRS collection dome to Row 11 of the survey field where it appears to terminate abruptly. These conductors are found between approximately 91ft to 158ft depth, with the greatest concentration appearing between 130ft to 155ft depth. The shallowest conductor appears at 91ft depth, trending downwards from the collection dome. A cross-sectional analysis of the conductors' bundle positively identified eighteen (18) of the twenty-eight (28) conductors. The remaining ten (10) conductors may be encased within the conductor bundle but are not detectable due to the shielding effect of the compactness of the conductors blocking the imaging signals.

In addition to the conductors being continuous, there is evidence of potential collector wall leakage at a few locations. The three sites (AP08, AP01, and AP0) where gas anomalies are observed emanated from minor localized conductor wall damage. Typically, the acoustic responses from these three distinct targets reveal a vertical, highly contained flow. The flow is not noted to be volatile or holding a plume-spreading presence. AP0 is right at the containment dome region where the skirt of the containment resides. The AP0 gas/oil presence is propagating within the edges of the containment dome system, which further supports that the oil and gas being captured are propagating through the conductors. Based on the field survey conclusions and oil collection observations, it is likely that most of the oil and gas is contained within the conductors, and a small percentage is seeping into the sub-seabed due to the conductor wall damage.

A noticeable characteristic of the conductors is how they manifest themselves directly across from the containment dome to the location of the original well-bay, following the basement slope closely. The Row 11 pipes' endings show an abrupt spread-out termination with an undulating humped, slightly down-looking character. This may be due to the pipes being kinked and going downward at a sharp angle so that we cannot pick up the conductors with the acoustics. On the other hand, it may be that the conductors are broken at Row 11 and 10" liners or smaller bore tubing feed oil and gas into the conductor and cannot be seen due to their smaller diameter size. In the region around Row 11, gas-laden soil inhibited the acoustic ability to get a return and collect data. In contrast, the central zone presents the conductors as intact, held together in a symmetrical bundle.

What was also noticed was the presence of gas in the sediments after Row 11; a masking effect is observed when viewing the upper sedimentary stratigraphy. In addition, at the mudline in the locations after Row 11 heading to Row 16, there exists a strong presence of entrapped embedded gas in the shallow mudline zone. The reflectivity variance with high-intensity signatures at the mudline to the lower 10ft at A11, A12, and A13 indicates suspended or entrapped gas in the weakly consolidated clay sediment. Hence, the termination imagery noted in Row 11 is being influenced or constrained by the gas in the sediments. This is also where the conductors are potentially bending downwards.

As the conductors rise towards the containment dome, the bundled pipes splay or spread apart, directly ending at the dome edge. The acoustic data acquisition was physically constrained in approach to the dome; however, it appears that the conductors continue under the dome region. The fact that the dome and conductors exactly coexist in position indicates their relationship with transporting the oil and gas to the dome capture area from the original well site.

Full details of identified linear features and anomalies are provided in Table 14 and Table 16 within the main body of the report (See Section 6.2). These details include X-Y-Z positions along the linear features along with size data and uncertainties and X-Y-Z coordinates of the top centre of the anomaly together with size data and suggestive interpretation. In addition, interpretive charts of each site are presented in Volume II of this report.

8 DECLARATION

I, Professor Jacques Yves Guigné, am confirming that all geoscience-based information and responses and opinions provided in this report have been carefully considered and are underpinned by documented data evidenced.

Professor Jacques Yves Guigné, DSc., Ph.D., P.Geo. – Professional Geoscientist

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