



SOFIA **OFFSHORE** **WIND FARM**

MARINE ARCHAEOLOGICAL TECHNICAL REPORT

NON-OFTO

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[Provided in supporting document (Document Reference: 003870387-01)]

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Sheet 1	ID 70636 – Unknown

1. INTRODUCTION

1.1 RELEVANT DOCUMENTS

1.1.1 This report forms a suite of archaeological documents reporting on the findings from the Sofia offshore site investigation campaign in 2020.

DOCUMENT REFERENCE	DOCUMENT TITLE
003797748	OFTO Stage 1 & 2 geoarchaeological assessment of geotechnical data
003876549	OFTO Stage 1 & 2 geoarchaeological assessment of geotechnical data – Supporting Figures
003848720	Non-OFTO Stage 1 & 2 geoarchaeological assessment of geotechnical data
003876544	Non-OFTO Stage 1 & 2 geoarchaeological assessment of geotechnical data – Supporting Figures
003815261	OFTO Marine Archaeological Technical Report
003870389	OFTO Marine Archaeological Technical Report – Supporting Figures
003820093 [This report]	Non-OFTO Marine Archaeological Technical Report
003870387 [Supporting figures to this report]	Non-OFTO Marine Archaeological Technical Report – Supporting Figures
003744026	Doggerbank Offshore Wind Farm C and Sofia Offshore Wind Farm Intertidal Zone maritime heritage walkover survey
003034372	Offshore Archaeological Written Scheme of Investigation [update to approved management plan]

1.2 PROJECT BACKGROUND

1.2.1 Wessex Archaeology was commissioned by Innogy Renewables UK Limited (now RWE), under the subsidiary Sofia Offshore Wind Farm Limited (SOWFL), to prepare a marine archaeological Technical Report for the Sofia Offshore Wind Farm (SOWF) offshore generation assets (non-OFTO) ahead of the proposed development. The assessment has been undertaken in accordance with the revised Offshore Written Scheme of Investigation (Wessex Archaeology 2019d) and Protocol for Archaeological Discoveries (PAD) for the Sofia Offshore Wind Farm Limited (SOWFL) developments.

- 1.2.2 Wessex Archaeology has previously undertaken archaeological assessments of the non-OFTO (then the Teesside B cable corridor) and the Dogger Bank Round 3 Zone (Tranches A and B) as part of the original Round 3 Zone assessments. The following unpublished reports compiled by Wessex Archaeology have been consulted in order to compile this assessment:
- ✦ Dogger Bank Tranche A (Creyke Beck) Environmental Impact Assessment, Archaeology and Cultural History Technical Report (2013);
 - ✦ Dogger Bank Teesside A & B, Marine and Coastal Archaeology Environmental Impact Assessment Technical Report (2014);
 - ✦ Sofia Offshore Wind Farm (OCP Area) – Archaeological Assessment of Geophysical Data (2019);
 - ✦ Sofia Offshore Wind Farm (Perimeter Area) – Archaeological Assessment of Geophysical Data (2019);
 - ✦ Sofia Offshore Wind Farm (Updated OCP Area) – Archaeological Assessment of Geophysical Data (2019);
 - ✦ Sofia Offshore Wind Farm Offshore Archaeological Written Scheme of Investigation (2019; Doc. Ref. 003034372); and
 - ✦ Sofia OWF – Archaeological Assessment of Geophysical Data, Interim Statement for OCP (2020) DW/211053/18.06.20.

1.3 DEVELOPMENT PROPOSAL

- 1.3.1 The non-OFTO development comprises:
- ✦ Up to 200 wind turbines and supporting tower structures;
 - ✦ Wind turbine foundations and associated support and access structures;
 - ✦ Subsea inter-array cables (950 km maximum);
 - ✦ Array cable protection measures (where necessary);
 - ✦ The 66kV switchgear and the control and protection panels located at the Offshore Converter Platform (OCP);
 - ✦ Associated balance of plant at the OCP;
 - ✦ Up to five offshore meteorological monitoring stations (these are unlikely to have a dedicated foundation but could be installed on other infrastructure, such as wind turbines);
 - ✦ Protection against scour and subsea foundation damage (where necessary); and
 - ✦ Up to ten vessel mooring buoys.
- 1.3.2 The SOWF non-OFTO layout has a relatively dense perimeter of wind turbine generators (WTGs) around the boundary of the site area, and a widely spaced grid of WTGs in the centre. The OCP is in a broadly central location. One spare WTG location has been identified,

near the northern corner of the array. This optional spare location has no structures planned for it but is available in the event that a serious obstruction is identified at another WTG location. The overall windfarm layout SOF97-100 includes 102 locations in total:

- ✦ 100 WTG (wind turbine generator) locations;
 - ✦ One OCP location; and
 - ✦ One spare location (potential alternative WTG location).
- 1.3.3 Array cable layout SOF97-100-IA-1 includes:
- ✦ 18 strings of array cables linked in pairs into nine loops by interlink cables;
 - ✦ Eight of those strings contain 5 WTGs;
 - ✦ Ten of those strings contain 6 WTGs;
 - ✦ Allowance for a single optional spare WTG location (at location A12) which is crossed by array cable G5: A13-A11; and
 - ✦ It is noted that the export cables exit the WTG array between WTGs J01 and K01.

1.4 SCOPE OF DOCUMENT

- 1.4.1 The study area for the Technical Report comprises the non-OFTO assets and also the area surveyed for the OCP as this will include areas where array cables are due to be laid (**Figure 1**), therefore there will be duplication in both the OFTO (Document reference: 003815261) and non-OFTO reports of the data in relation to the OCP area. This assessment was requested by SOWFL in order to determine, as far as is possible from existing information and recent survey data, the nature, extent and significance of the known and potential marine archaeological resource within the boundary of the proposed Project.
- 1.4.2 This document will not include the ongoing geoarchaeological assessment. That is included in the separate report *Sofia Offshore Wind Farm – Array: Stage 1 & 2 geoarchaeological assessment of geotechnical data* (Document Reference: 003848720).

1.5 AIMS AND OBJECTIVES

- 1.5.1 The aim of this marine archaeological Technical Report is to summarise the known and potential archaeological baseline within the Project to subsequently inform the updated Written Scheme of Investigation (WSI) and mitigation strategy therein.
- 1.5.2 The specific objectives of this assessment are to:
- ✦ Provide details of relevant legislation, national and local planning policy, and best practice guidance;
 - ✦ Outline the known and potential marine heritage assets within the study area based on a review of existing information within a defined study area; and
 - ✦ Assess the significance of known and potential heritage assets through weighted consideration of their valued components.

1.6 COPYRIGHT



- 1.6.1 This report may contain material that is non-Wessex Archaeology copyright (e.g. Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which Wessex Archaeology are able to provide for limited reproduction under the terms of our own copyright licenses, but for which copyright itself is non-transferable by Wessex Archaeology. Users remain bound by the conditions of the Copyright, Designs and Patents Act 1988 with regard to multiple copying and electronic dissemination of the report.

2. LEGISLATION, GUIDANCE AND POLICY

2.1 MARINE POLICY

- 2.1.1 The following section provides a summary of the national, regional and local planning and legislative framework that governs the treatment of the marine historic environment in the planning process. More comprehensive details are provided in **Appendix B**.

2.2 MARINE LEGISLATION AND POLICY

- 2.2.1 The Marine and Coastal Access Act 2009 (MCAA) is the primary legislation relevant to marine development plans. Under this legislation, marine plans must be consistent with the Marine Policy Statement (MPS; Department for Environment, Food and Rural Affairs 2011) and fully reflect the requirements of the MPS at a local level. Marine plans must also be in accordance with other UK national policy, including the National Planning Policy Framework (NPPF; Department for Communities and Local Government 2012). The MCAA will be incorporated within the requirements of the project's Development Consent Order necessary under the provisions of the Planning Act 2008.
- 2.2.2 Under the MCAA, the UK was divided into marine planning regions, with an associated authority responsible for preparing a Marine Plan for that area. The MPS sets out the framework for preparing Marine Plans and making decisions affecting the marine environment. The MPS also states that Marine Plans must ensure a sustainable marine environment that will protect heritage assets.
- 2.2.3 In England, the MMO have divided the inshore and offshore waters into 11 plan areas for which marine plans are to be produced. The non-OFTO is within England's North East Marine Plan – the North East Inshore and North East Offshore plan areas, with a Draft Plan last revised in the Spring 2020. Available here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/857072/Revised_SPP_NE_Clean.pdf, accessed 09/11/2020).
- 2.2.4 The primary planning framework relevant to SOWF is the National Planning Policy Framework (NPPF) published in March 2012 and replacing previous Planning Policy Statement 5 in England (Department for Communities and Local Government 2012) and revised in February 2019. As with the Marine Policy Statement, a core planning principle is to “conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations”.
- 2.2.5 The Government's policy for the delivery of major energy infrastructure is set out in the Overarching National Policy Statement for Energy (EN-1) (Department of Energy & Climate Change (DECC) 2011a), and the National Policy Statement for Renewable Energy Infrastructure (EN-3) (DECC 2011b). These include statements about potential effects on cultural heritage.
- 2.2.6 The following legislation applies to marine heritage and designation within UK Territorial Waters:
-  Protection of Wrecks Act 1973: Section One and Two;
 -  Ancient Monuments and Archaeological Areas Act 1979 (as amended);

- ☛ Protection of Military Remains Act 1986; and
 - ☛ Merchant Shipping Act 1995.
- 2.2.7 The above legislation provides protection for wrecks of high historical, archaeological or artistic value, as well as allowing military wrecks and aircraft remains to be protected. Ownership of any wreck remains is determined in accordance with the Merchant Shipping Act 1995.
- 2.2.8 More information regarding details of each piece of legislation is presented in **Appendix B**.

2.3 INTERNATIONAL CONVENTIONS

- 2.3.1 The UNESCO Convention on the Protection of Underwater Cultural Heritage was concluded in 2001 and is a comprehensive attempt to codify the law internationally, with regards to underwater cultural heritage. The UK abstained in the vote on the final draft of the Convention, however it has stated that it has adopted the Annex of the Convention, which governs the conduct of archaeological investigations, as best practice for archaeology. Although the UK is not a signatory, the Convention entered into force on 2 January 2009, having been accepted or ratified by 60 member states (as of 27/04/2018).

2.4 MARINE GUIDANCE

- 2.4.1 The following Marine Guidance documents were adhered to in the production of this report:
- ☛ Standard and Guidance for Archaeological Advice by Historic Environment Services (ClfA 2020);
 - ☛ Code of Conduct (ClfA 2014, revised 2019);
 - ☛ Regulations for Professional Conduct (ClfA 2019);
 - ☛ National Policy Statement for Energy (EN-1), London, TSO (Department of Energy & Climate Change 2011);
 - ☛ Military Aircraft Crash Sites – Archaeological Guidance on their Significance and Future Management (English Heritage (now Historic England) 2002);
 - ☛ Managing Significance in Decision-Taking in the Historic Environment ((English Heritage (now Historic England) 2015a);
 - ☛ Management of Research Projects in the Historic Environment: the MoRPHE Project Managers' Guide ((English Heritage (now Historic England) 2015b);
 - ☛ Preserving Archaeological Remains: Decision-Taking for Sites under Development ((English Heritage (now Historic England) 2016);
 - ☛ Deposit Modelling and Archaeology. Guidance for Mapping Buried Deposits, Historic England, Swindon ((English Heritage (now Historic England) 2020);
 - ☛ Code of Practice for Seabed Development (Joint Nautical Archaeology Policy Committee (JNAPC) 2006);

- ☞ Guidance on the Use of the Protocol for Reporting Finds of Archaeological Interest in Relation to Aircraft Crash Sites at Sea (Wessex Archaeology 2008);
- ☞ Our Seas - A shared resource: High level marine objectives (DEFRA 2009);
- ☞ Offshore Geotechnical Investigations and Historic Environment Analysis: Guidance for the Renewable Energy Sector (COWRIE 2011);
- ☞ COWRIE Historic Environment Guidance for the Offshore Renewable Energy Sector (Wessex Archaeology 2007);
- ☞ Ships and Boats: Prehistory to Present - Designation Selection Guide (English Heritage (now Historic England) 2012);
- ☞ Standard and Guidance for Historic Environment Desk-based Assessment (ClfA 2014, updated 2017);
- ☞ Marine Geophysics Data Acquisition, Processing and Interpretation Guidance Notes (Bates, R, Dix, J K, Plets, R 2013);
- ☞ Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record (English Heritage (now Historic England) 2015c);
- ☞ Model Clauses for Archaeological Written Schemes of Investigation: Offshore Renewables Projects. (The Crown Estate 2010) (hereafter referred to as 'Model Clauses'); and
- ☞ Protocol for Archaeological Discoveries: Offshore Renewables Projects (ORPAD) (The Crown Estate 2014).



3. METHODOLOGY

3.1 STUDY AREA

- 3.1.1 The study area is located within the southern North Sea and comprises a roughly north-west to south-east orientated rectangular area covering approximately 593 square km, and once constructed will contain 100 Wind Turbine Generators (WTGs) plus all associated Inter-Array Cables (IACs) and the Offshore Converter Platform (OCP) (**Figure 1**).
- 3.1.2 The geophysical study area as used in this assessment are a series of nine survey blocks (designated H, J, K, M, N, P, Q, R, S, and T), aligned along rows of proposed WTGs. These are of varying length and are all 500 m wide. These survey blocks contain additional 500 x 500 m WTG areas, centred on each of the 100 proposed WTG locations (plus one spare location), and 100 m IAC corridors centred on the proposed IAC locations.
- 3.1.3 Additional 100 m IAC survey corridors have been assessed where the planned IACs cross between survey blocks, as well as a 2.5 x 2.5 km area surrounding the proposed OCP location. A detailed outline of the geophysical study areas used for this assessment is illustrated in **Figure 1**.
- 3.1.4 This geophysical assessment is in addition to the previously provided summary report for the Sofia OWF OCP area (Wessex Archaeology 2019a & 2019c), and contains both the previously provided results and any additional results from the added IAC cross lines (which were not available during the initial OCP assessment). The previously provided results (Wessex Archaeology 2019a & 2019c) have been updated based on new data where appropriate.
- 3.1.5 It should be noted that the OCP results have also been presented here, as well as in the accompanying OFTO assessment report (Document reference: 003815261), because some array cables will be laid within the OCP survey area.

3.2 ARCHAEOLOGICAL DESK-BASED ASSESMENT

KEY THEMES

- 3.2.1 The methodology follows the best practice professional guidance outlined by the Chartered Institute for Archaeologists' (CIfA) Standard and Guidance for Historic Environment Desk-Based Assessment (2014, updated 2017).
- 3.2.2 The marine themes relevant to marine archaeological baseline as assessed in this report are:
-  Seabed prehistory (for example, palaeochannels and other features that contain prehistoric sediment, and derived Palaeolithic artefacts e.g. handaxes); and
 -  Seabed features, including maritime sites (such as shipwrecks and associated material including cargo, obstructions and fishermen's fasteners) and aviation sites (aircraft crash sites and associated debris).

DATA SOURCES

- 3.2.3 Several sources of information were consulted in order to compile this Technical Report. Data generated from marine geophysical surveys were a main component of the data and are discussed further in **Section 3.3**. The following data sources were consulted in order to compile the desk-based element of the assessment:
- ☞ Recorded wreck and obstruction data acquired via the United Kingdom Hydrographic Office (UKHO);
 - ☞ Geophysical survey data supplied by Fugro GB Marine Limited (Fugro 2020);
 - ☞ Previous investigations from the Study Area (Wessex Archaeology 2013; 2014);
 - ☞ Written Scheme of Investigation (WSI) data sets (Wessex Archaeology 2019d);
 - ☞ The National Record of the Historic Environment (NRHE) maintained by Historic England, comprising data for marine archaeological sites, find spots and archaeological events;
 - ☞ Historic Environment Records (HER) held by Redcar and Cleveland Borough Council;
 - ☞ Relevant mapping including Admiralty Charts, British Geological Survey (BGS), Ordnance Survey and historic maps; and
 - ☞ Relevant primary and secondary sources and grey literature held in Wessex Archaeology's own library, and those available through the Archaeology Data Service and other websites (presented in the 'References').

DATA STRUCTURE

- 3.2.4 In order to compile the marine archaeological baseline as presented in this report, where possible, the sources in **Section 3.2.3** of this document were incorporated into a project Geographic Information System (GIS) using ArcGIS 10.6.1, enabling the data to be spatially analysed. The data were subsequently compiled into gazetteers of maritime and aviation resources within the study area; these were used to inform the archaeological assessment of geophysical data that are presented in **Sections 4 and 5**.
- 3.2.5 Within this assessment, the gazetteer is compiled and presented in Universal Transverse Mercator (UTM) Zone 31 North projected from a World Geodetic System (WGS) 1984 datum.
- 3.2.6 Information relating to the archaeological and cultural heritage that did not include location or positional information were also used to inform the marine archaeological baseline assessment where relevant.
- 3.2.7 The HER records have been discriminated between records for which there is known material on the seabed and 'recorded losses' (vessels that are known to have been lost, but do not, except by chance, have material on the seabed at their recorded loss location).
- 3.2.8 For archaeological sites that were recorded in both the UKHO and HER datasets, the co-ordinates from the UKHO are the ones used in the gazetteer and GIS. As these relate to surveyed co-ordinates and supporting survey metadata, they are judged likely to be more accurate (unless other verifiable spatial data is available).

CHRONOLOGY

- 3.2.9 Archaeological material is generally studied within a framework of ‘periods’ or ‘ages’ that reflect the activities and cultural changes taking place over time. All dates are referred to as BCE (Before Common Era), BP (Before Present) or AD (Anno Domini) within the text. BCE refers to calibrated radiocarbon chronology that can be considered equivalent to calendar years. BP dates are used for periods of time older than circa 10,000 years ago.
- 3.2.10 A list of the main archaeological periods of the British Isles is referred to in the text, along with their broadly defined dates, are presented in **Appendix A** which reflects the archaeological record recorded from coastal and marine contexts.

SEABED PREHISTORY

- 3.2.11 A marine archaeological baseline summary and baseline environment assessment has been included as part of the SOWF Offshore Archaeological WSI (Wessex Archaeology 2019d). These assessments have identified key areas of archaeological and geoarchaeological potential associated with palaeolandscape features identified during earlier geotechnical and geophysical investigations.
- 3.2.12 The results of the assessments, where relevant to palaeolandscape features of archaeological potential, are described in **Section 4**, with full-size figures included in the SOWF Offshore Archaeological WSI (Wessex Archaeology 2019d).
- 3.2.13 Further geoarchaeological studies have been conducted for SOWFL and are reported separately as *Sofia Offshore Wind Farm – Array: Stage 1 & 2 geoarchaeological assessment of geotechnical data* (Document Reference: 003848720).

SEABED FEATURES: MARITIME AND AVIATION ARCHAEOLOGY

- 3.2.14 The sources of data for maritime and aviation history and archaeology listed in **Section 3.2.3** above have been collated and summarised in order to develop a baseline of marine cultural heritage for the study area, and assess the potential for encountering unknown shipwreck and aircraft crash sites (**Section 4**). Sources of the most data relevant to maritime and aviation archaeology are the UKHO, NRHE and local HERs.
- 3.2.15 The data obtained were reviewed and those located within the study area were extracted and compiled to form a gazetteer as part of the known maritime and aviation baseline. These records were combined with the geophysical dataset (**Appendix C**) and were added to the project GIS.
- 3.2.16 Data relating to Recorded Losses were also extracted from the NRHE, HER and UKHO data sources. Recorded Losses are records for ships or aircraft that are known to have wrecked or crashed offshore, but for which the exact locations are not known. The positional data of these records is unreliable and serves only to provide an indication of the types of vessels that passed through the area and the wrecking incidents that are known to have occurred in the general region. Whilst the remains of these vessels and aircraft are expected to exist somewhere on the seafloor, their location is unknown. As such, they signify the potential maritime and aviation resource.
- 3.2.17 Details regarding maritime and aviation Recorded Losses are presented in a gazetteer format (**Appendix D**). These records have retained their original identification assigned by the UKHO, NRHE or HER for ease of cross-referencing. Where records are duplicated between

datasets all corresponding identification numbers have been included but are referred to in the text by the HER Monument ID if one exists. The gazetteer does not include positional data due to the inaccuracies therein

- 3.2.18 The baseline assessment of maritime and aviation archaeology was further supplemented by a review of relevant primary and secondary source material in order to provide an indication on the nature of maritime and aviation activity across the region. As well as summarising the known archaeological resource, the baseline assessment underlines the potential for encountering unknown shipwreck and aircraft crash sites within the study area (English Heritage 2002; Wessex Archaeology 2008a; 2008b).

3.3 GEOPHYSICAL METHODOLOGY

INTRODUCTION

- 3.3.1 This report consists of an assessment of geophysical survey data comprising sidescan sonar (SSS), magnetometer (Mag.) and multibeam echosounder (MBES) datasets. The data were acquired by Fugro in 2020.
- 3.3.2 The survey data were acquired in WGS 1984 UTM Zone 31N projected coordinates, and the results are presented in the same system.

AIMS AND OBJECTIVES

- 3.3.3 The aims and objectives of the geophysical assessment are:
- ☞ confirm the presence of known or previously located marine sites of archaeological potential and to comment on their apparent character;
 - ☞ identify, locate and characterise hitherto unrecorded marine sites of archaeological potential;
 - ☞ comment on the potential effects of development on known archaeological sites; and
 - ☞ provide recommendations for archaeological mitigation.

DATA SOURCES

- 3.3.4 A number of data sources were consulted during this assessment, including:
- ☞ Geophysical survey datasets (SSS, MBES and Mag.) acquired by Fugro in 2020;
 - ☞ Recorded wreck and obstruction data acquired via the UKHO;
 - ☞ Relevant background mapping from the area, e.g. Admiralty Charts received via MarineFind;
 - ☞ Previous geophysical results and archaeological desk-based assessments (DBA) associated with the Dogger Bank Round 3 Zone (Wessex Archaeology 2013; 2014); and
 - ☞ Client supplied mobilisation and survey reports (Fugro 2020a; 2020b).

TECHNICAL SPECIFICATIONS

3.3.5 Geophysical data were acquired by Fugro using the *Fugro Venturer*, which collected SSS, MBES and Mag. datasets at a line spacing of 50 m. The *Fugro Pioneer* was used to acquire additional magnetometer data along the centre of the survey blocks only at a line spacing of 10 m. The *Fugro Pioneer* also acquired sub-bottom profiler (SBP) and ultra-high resolution (UHR) seismic data; however, these were not required as part of the current assessment. Further details on the equipment used is in **Table 1**.

Table 1 Summary of Survey Equipment.

SURVEY COMPANY	SURVEY VESSEL	DATA TYPE	EQUIPMENT	DATA FORMAT
Fugro	<i>Fugro Venturer</i>	MBES	Dual head Kongsberg EM2040	.xyz
		SSS	EdgeTech 4205 (230 / 550 kHz), 65 m range	.xtf
		Mag.	Geometrics G-882	.csv
		Positioning	Fugro StarFix GNSS Fugro Starfix.G2+ positioning solution, with backups from Starfix.XP2 and Starfix.HP positioning solutions	N/A
	<i>Fugro Pioneer</i>	Mag.	Geometrics G-882	.xls
		Positioning	Fugro StarFix GNSS	N/A

PROCESSING

3.3.6 A number of datasets were assessed over the study area; each dataset was processed separately using the following software **Table 2**.

Table 2 Software used for geophysical assessment.

DATASET	PROCESSING SOFTWARE	INTERPRETATION AND RATIONALISATION
MBES	QPS Fledermaus v7.8.2	ArcMap v10.6
SSS	CodaOctopus Survey Engine v5.11	
Mag.	MagPick v3.25	

- 3.3.7 The MBES data were analysed to identify any unusual seabed structures that could be shipwrecks or other anthropogenic debris. The data were gridded at 0.25 m and analysed using QPS Fledermaus software, which enables a 3-D visualisation of the acquired data and geo-picking of seabed anomalies.
- 3.3.8 The high frequency .xtf SSS data files were converted into .cod format and processed using CodaOctopus Survey Engine Sidescan+ software. This allowed the data to be replayed with various gain settings in order to optimise the quality of the images. The data were interpreted for any objects of possible anthropogenic origin. This involves creating a database of anomalies within Coda by tagging individual features of possible archaeological potential, recording their positions and dimensions, and acquiring an image of each anomaly for future reference.
- 3.3.9 A mosaic of the SSS data is produced during this process to assess the quality of the sonar towfish positioning. This process allows the position of anomalies to be checked between different survey lines and for the positioning to be further refined if necessary.
- 3.3.10 The form, size, and/or extent of an anomaly is a guide to its potential to be an anthropogenic feature and therefore of archaeological interest. A single small but prominent anomaly may be part of a much more extensive feature that is largely buried. Similarly, a scatter of minor anomalies may be unrelated individual features, define the edges of a buried but intact feature, or may be all that remains as a result of past impacts from, for example, dredging or fishing. Assessment is made of such groups of anomalies during data interpretation to determine which of these alternatives is the most likely.
- 3.3.11 The magnetometer data were processed and interpreted using a combination Geometrics MagPick and Wessex Archaeology proprietary software in order to identify any discrete magnetic contacts which could represent buried ferrous debris or structures such as wrecks.
- 3.3.12 These software packages enable both the visualisation of individual lines of data and gridding of data to produce a magnetic anomaly map. The data were first smoothed to try and eliminate any spiking. A trend was then fitted to the resulting data, and the trend values subtracted from the smoothed values. This was carried out to remove natural variations in the data (such as diurnal variation in magnetic field strength and changes in geology). The processed data were then gridded to produce a map of magnetic anomalies, and individual anomalies tagged based on the grid and individual profile lines. Images are taken in a similar process to that of the SSS data.
- 3.3.13 For the purposes of this assessment, any identified magnetic anomalies have been classified depending on their amplitude as small (5 nT to 49 nT), medium (50 nT to 99 nT), or large (>100 nT).

DATA QUALITY

- 3.3.14 Once processed, the geophysical data sets were individually assessed for quality and their suitability for archaeological purposes and rated using the following criteria **Table 3**.

Table 3 Criteria for assigning data quality rating.

DATA QUALITY	DESCRIPTION
Good	Data which are clear and unaffected or only slightly affected by weather conditions, sea state, background noise or data artefacts. Seabed datasets are suitable for the interpretation of upstanding and partially buried wrecks, debris fields, and small individual anomalies. The structure of wrecks is clear, allowing assessments on wreck condition to be made. Subtle reflectors are clear within SBP data. These data provide the highest probability that anomalies of archaeological potential will be identified.
Average	Data which are moderately affected by weather conditions, sea state and noise. Seabed datasets are suitable for the identification of upstanding and partially buried wrecks, the larger elements of debris fields and dispersed sites, and larger individual anomalies. Dispersed and/or partially buried wrecks may be difficult to identify. Interpretation of continuous reflectors in SBP data is problematic. These data are not considered to be detrimentally affected to a significant degree.
Below Average	Data which are affected by weather conditions, sea state and noise to a significant degree. Seabed datasets are suitable for the identification of relatively intact, upstanding wrecks and large individual anomalies. Dispersed and/or partially buried wrecks, or small isolated anomalies may not be clearly resolved. Small palaeogeographic features, or internal structure may not be resolved in SBP data.

- 3.3.15 The MBES data were rated as ‘Average’ using the above criteria. The data quality and resolution of 0.25 m was found to be of a good standard and suitable for archaeological assessment of objects and debris over 0.5 m in size. Some weather noise (roll effects) were visible on most lines of data, but were not deemed to detrimentally affect the data to a significant degree.
- 3.3.16 The SSS data have been rated as ‘Average’ using the above criteria table. Some weather effects were identified on some survey lines, but this was not deemed to detrimentally affect the data to a significant degree and the data are considered suitable for archaeological assessment.
- 3.3.17 The Magnetometer data have been rated as ‘Average’ using the above criterial table. The data acquired by the Fugro Pioneer was found to contain regular (approximately 0.7 Hz), uniform spiking of approximately 1 nT in amplitude. This was confirmed by Fugro to be the result of simultaneous operation of a sparker for the UHR seismic data acquisition. This spiking was able to be filtered out during data processing.
- 3.3.18 The Magnetometer data acquired by the *Fugro Pioneer* had a relative low signal strength value, regularly dropping below the minimum specification required by the client. This data was still deemed to be fit for purpose following conversations with other data users and the magnetometer manufacturer, and a technical memo stating such was issued by Fugro (Fugro 2020c).
- 3.3.19 Following processing, neither of the above issues were found to detrimentally affect the Magnetometer data to a significant degree, and the data were deemed suitable for archaeological assessment.

ANOMALY GROUPING AND DISCRIMINATION

- 3.3.20 The previous section describes the initial interpretation of all available geophysical datasets which were conducted independently of one another. This inevitably leads to the possibility of any one object being the cause of numerous anomalies in different datasets and apparently overstating the number of archaeological features in the exploration area.
- 3.3.21 To address this fact the anomalies were grouped together; allowing one ID number to be assigned to a single object for which there may be, for example, a UKHO record, a MBES anomaly, and multiple SSS anomalies.
- 3.3.22 Once all the geophysical anomalies and desk-based information have been grouped, a discrimination flag is added to the record in order to discriminate against those which are not thought to be of an archaeological concern. For anomalies located on the seabed, these flags are ascribed as follows, **Table 4**.

Table 4 Criteria discriminating relevance of identified features to proposed scheme.

OVERVIEW CLASSIFICATION	DISCRIMINATION	CRITERIA	DATA TYPE
Archaeological	A1	Anthropogenic origin of archaeological interest	MBES, SSS, Mag.
Archaeological	A2	Uncertain origin of possible archaeological interest	MBES, SSS, Mag.
Archaeological	A3	Historic record of possible archaeological interest with no corresponding geophysical anomaly	MBES, SSS, Mag.
Non-archaeological	U1	Not of anthropogenic origin	MBES, SSS, Mag.
Non-archaeological	U2	Known non-archaeological feature / Feature of non-archaeological interest	MBES, SSS, Mag.
Non-archaeological	U3	Recorded loss	MBES, SSS, Mag.
Non-impact	O1	Outside horizontal footprint of study area	MBES, SSS, Mag.
Non-impact	O3	Area subsequently cleared after data acquired, anomaly/object recovered	MBES, SSS, Mag.

- 3.3.23 The grouping and discrimination of information at this stage is based on all available information and is not definitive. It allows for all features of potential archaeological interest to be highlighted, while retaining all the information produced during the course of the geophysical interpretation and desk-based assessment for further evaluation should more information become available.

- 3.3.24 Any anomalies located outside of the defined study areas, either previously recorded in known databases (e.g. UKHO) or identified during this geophysical assessment, are deemed beyond the scope of the current assessment and are consequently not included in this report.

3.4 IMPACT ASSESSMENT CRITERIA

ASSET SENSITIVITY

- 3.4.1 In order to assess the potential impacts of a development upon marine cultural heritage, the conceptual approach known as the 'source-pathway-receptor' model is adopted. This approach is based on the identification of the source (i.e. the origin of a potential impact), the pathway (i.e. the means by which the effect of the activity could impact a receptor) and the receptor that may be impacted (e.g. known/potential heritage assets). For the significance of any given impact to be fully understood and for appropriate mitigation to be proposed, the sensitivity of any marine cultural heritage assets that may be impacted need to be considered. This section outlines how the sensitivity of marine heritage assets is ascertained.
- 3.4.2 The capability of an asset to accommodate change and its ability to recover if affected is a function of its sensitivity. Asset sensitivity is typically assessed via the following factors:
- ✦ Adaptability - the degree to which an asset can avoid or adapt to an effect;
 - ✦ Tolerance - the ability of an asset to accommodate temporary or permanent change without significant adverse impact;
 - ✦ Recoverability - the temporal scale over and extent to which an asset will recover following an effect; and
 - ✦ Value - a measure of the asset's importance, rarity and worth.
- 3.4.3 Archaeological and cultural heritage assets cannot typically adapt, tolerate or recover from physical impacts resulting in material damage or loss caused by development. Consequently, the sensitivity of each asset is predominantly quantified only by its value.

VALUE OF AN ASSET

- 3.4.4 Based on Historic England's Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (English Heritage (now Historic England) 2008, 21), the significance of a historic asset 'embraces all the diverse cultural and natural heritage values that people associate with it, or which prompt them to respond to it'.
- 3.4.5 Within this document, significance is weighed by consideration of the potential for the asset to demonstrate the following value criteria:
- ✦ Evidential value – deriving from the potential of a place to yield evidence about past human activity;
 - ✦ Historical value – deriving from the ways in which past people, events and aspects of life can be connected through a place to the present. It tends to be illustrative or associative;
 - ✦ Aesthetic value – deriving from the ways in which people draw sensory and intellectual stimulation from a place; and

- ✦ Communal value – deriving from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory. Communal values are closely bound up with historical (particularly associative) and aesthetic values but tend to have additional and specific aspects.
- 3.4.6 With regards to assessing the value of shipwrecks, the following criteria listed in English Heritage’s Ships and Boats: Prehistory to Present – Designation Selection Guide (English Heritage (now Historic England) 2012) can be used to assess an asset in terms of its value:
- ✦ Period;
 - ✦ Rarity;
 - ✦ Documentation;
 - ✦ Group value;
 - ✦ Survival/condition; and
 - ✦ Potential.
- 3.4.7 These aspects help to characterise each asset whilst also comparing them to other similar assets. The criteria also enable the potential to contribute to knowledge, understanding and outreach to be assessed. The value of known archaeological and cultural heritage assets were assessed on a five-point scale using professional judgement informed by criteria provided in **Table 5** below.
- 3.4.8 Furthermore, On the Importance of Shipwrecks (Wessex Archaeology 2006) suggests importance can be assessed through the following criteria: build, use, loss, survival and investigation.
- 3.4.9 To further supplement this approach, the ALSF-funded Marine Class Description and principles of selection for aggregate producing areas project (ALSF 5383), undertaken by Wessex Archaeology (2008b), proposed a composite timeline that considers wrecks in five distinct date ranges. The timeline considers the broad chronology of shipbuilding, thus drawing out generalisations regarding the age and special value of sites. The timeline is summarised as follows:
- ✦ Pre- 1500 AD: this covers the period from the earliest Prehistoric evidence for human maritime activity to the end of the medieval period, c. 1508. Little is known of watercraft or vessels from this period and archaeological evidence of them is so rare that all examples of craft are likely to be of special value;
 - ✦ 1500 to 1815: this encompasses the Tudor and Stuart periods, the English Civil War, the Anglo-Dutch Wars and later the American Independence and French Revolutionary Wars. Wreck and vessel remains from this date are also quite rare, and can be expected to be of special value;
 - ✦ 1816 to 1913: this period witnessed great changes in the way in which vessels were built and used, corresponding with the introduction of metal to shipbuilding, and steam to propulsion technology. Examples of watercraft from this period are more numerous and as such, it is those that specifically contribute to an understanding of these changes that should be regarded as having special value;

- ☛ 1914 to 1945: this period encompasses the First World War (WWI), the Interwar years and the Second World War (WWII). This date range contains Britain's highest volume of recorded boat and ships losses. Those which might be regarded as having special interest are likely to relate to technological changes and to local and global activities during this period; and
- ☛ Post 1945: the final period extends from 1946 through the post-war years to the present day. Vessels from this date range would have to present a strong case if they are to be considered of special interest.

Table 5 Criteria to assess the archaeological value of marine assets.

VALUE	DEFINITION
High	<p>Best known, only example or above average example and / or significant or high potential to contribute to knowledge and understanding and / or outreach. Assets with a demonstrable international or national dimension to their importance are likely to fall within this category.</p> <p>Wrecked ships and aircraft that are protected under the Protection of Wrecks Act 1973, Ancient Monuments and Archaeological Areas Act 1979 or Protection of Military Remains Act 1986 with an international dimension to their importance, plus as-yet undesignated sites that are demonstrably of equivalent archaeological value.</p> <p>Known submerged prehistoric sites and landscapes with the confirmed presence of largely <i>in situ</i> artefactual material or palaeogeographic features with demonstrable potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape.</p>
Medium	<p>Average example and / or moderate potential to contribute to knowledge and understanding and / or outreach.</p> <p>Includes wrecks of ships and aircraft that do not have statutory protection or equivalent significance, but have moderate potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.</p> <p>Prehistoric deposits with moderate potential to contribute to an understanding of the palaeoenvironment.</p>
Low	<p>Below average example and / or low potential to contribute to knowledge and understanding and / or outreach.</p> <p>Includes wrecks of ships and aircraft that do not have statutory protection or equivalent significance, but have low potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.</p> <p>Prehistoric deposits with low potential to contribute to an understanding of the palaeoenvironment.</p>
Negligible	<p>Poor example and / or little or no potential to contribute to knowledge and understanding and / or outreach. Assets with little or no surviving archaeological interest.</p>
Unknown	<p>There is not presently enough information available about the site to assess its value.</p>

3.4.1 The perceived value of each marine archaeological asset is generally assessed and assigned on a site-by-site basis, depending on the criteria listed in **Table 5**. The UK Marine Policy Statement (DEFRA 2011, 90) describes a heritage asset as holding a degree of significance. Significance relates to the heritage interest of an asset that may be archaeological, architectural, artistic or historic.

3.5 ASSUMPTIONS AND LIMITATIONS

ARCHAEOLOGICAL DATA

- 3.5.1 Data used to compile this report consists of primary geophysical survey data and secondary information derived from a variety of sources, only some of which have been directly examined for the purposes of this assessment. The assumption is made that the secondary data, as well as that derived from other secondary sources, are reasonably accurate.
- 3.5.2 The records held by the UKHO, NRHE, HER and the other sources used in this assessment are not a record of all surviving cultural heritage assets, rather a record of the discovery of a wide range of archaeological and historical components of the marine historic environment. The information held within these is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown. In particular, this relates to buried archaeological features.

4. MARITIME AND AVIATION ARCHAEOLOGY BASELINE

4.1 INTRODUCTION

- 4.1.1 The following assessment of the maritime resource is based on records of known shipwrecks, aircraft crash sites and obstructions combined with recent archaeological assessment of geophysics data. A marine archaeological assessment of palaeogeography is presented in *Sofia Offshore Wind Farm – Array: Stage 1 & 2 geoarchaeological assessment of geotechnical data* (Document Reference: 003848720)..

4.2 DESIGNATED SITES

- 4.2.1 There are currently no sites within the study area that are subject to statutory protection from the Protection of Wrecks Act 1973, the Protection of Military Remains Act 1986 or the Ancient Monuments and Archaeological Areas Act 1979; the three legislative acts that could be used to protect marine archaeological sites.

4.3 KNOWN MARITIME AND AVIATION SITES

- 4.3.1 There are no charted wreck sites or known aircraft crash sites located within the study area. The potential for the discovery of previously unknown shipwrecks sites and aircraft crash sites and material is discussed below.

4.4 GEOPHYSICAL SEABED FEATURES ASSESSMENT

- 4.4.1 The geophysical data were assessed to identify features of archaeological potential relating to maritime and aviation activity. The results of this assessment are collated in gazetteer format detailed in **Appendix C**, and the identified anomaly distribution illustrated in **Figures 2a-2h**.
- 4.4.2 As part of the assessment, the interpretation was cross-correlated with the results from previous phases of work associated with the Dogger Bank Round 3 Zone (Wessex Archaeology 2013; 2014), and with previous assessments of the perimeter area and potential OCP locations (Wessex Archaeology 2019a; 2019b; 2019c) . Where anomalies from previous work have been identified and retained, they also retain their original ID number (although dimensions and descriptions are updated to reflect the new data where appropriate). Some anomalies have been reinterpreted based on the new geophysical data; where these are now deemed to be natural or otherwise not of archaeological potential, they have been removed from the final gazetteer.
- 4.4.3 The survey data were acquired, processed, and interpreted in nine separate survey blocks, plus individual IACs and the OCP. However, for the purposes of this report, all of these are considered to be a single study area. The block, IAC, and WTG location within which each anomaly was identified is detailed in the gazetteer in **Appendix C**.

4.4.4 A total of 347 anomalies within the array study area and 10 anomalies within the OCP study area have been identified as being of possible archaeological potential. These have been discriminated as shown in **Table 6**:

Table 6 Anomalies of archaeological potential within the study area.

ARCHAEOLOGICAL DISCRIMINATION	QUANTITY: ARRAY AREA	QUANTITY: OCP AREA	INTERPRETATION
A1	3	0	Anthropogenic origin of archaeological interest
A2	344	10	Uncertain origin of possible archaeological interest
A3	0	0	Historic record of possible archaeological interest with no corresponding geophysical anomaly
Total	347	10	

4.4.5 Furthermore, these anomalies can be classified by probable type, which can further aid in assigning archaeological potential and importance in **Table 7**.

Table 7 Types of anomaly identified.

ANOMALY CLASSIFICATION	DEFINITION	NUMBER OF ANOMALIES: ARRAY AREA	NUMBER OF ANOMALIES: OCP AREA
Wreck	Areas of coherent structure including wrecks of ships, submarines and some aircraft (where coherent structure survives)	1	0
Debris Field	A discrete area containing numerous individual debris items that are potentially anthropogenic, and can include dispersed wreck sites for which no coherent structure remains	1	0
Debris	Distinct objects on the seabed, generally exhibiting height or with evidence of structure, that are potentially anthropogenic in origin	22	1
Seabed disturbance	An area of disturbance without individual, distinct objects. Potentially indicates wreck debris or other anthropogenic	18	1

ANOMALY CLASSIFICATION	DEFINITION	NUMBER OF ANOMALIES: ARRAY AREA	NUMBER OF ANOMALIES: OCP AREA
	features buried just below the seabed.		
Bright reflector	Individual objects or areas of low reflectivity, characteristic of materials that absorb acoustic energy, such as waterlogged wood or synthetic materials. Precise nature is uncertain	3	0
Dark reflector	Individual objects or areas of high reflectivity, displaying some anthropogenic characteristics. Precise nature is uncertain	35	0
Mound	A mounded feature with height not considered to be natural. Mounds may form over wreck sites or other debris.	3	0
Magnetic	No associated seabed surface expression, and have the potential to represent possible buried ferrous debris or buried wreck sites	264	8
Total		347	10

SEABED FEATURES ASSESSMENT RESULTS – ARRAY

- 4.4.6 One potential wreck, **70636**, has been identified within the geophysical data (**Sheet 1; Figure 2h**). This has been identified during previous phases of work within the Dogger Bank Round 3 Zone but does not have a corresponding UKHO record.
- 4.4.7 The feature is visible as distinct, elongate mound identified within both the SSS and MBES datasets, measuring 15.1 x 3.6 x 0.9 m and trending approximately north-east to south-west. The mound is situated in a depression, with a localised area of sand ripples immediately to the east, within an area of otherwise featureless seabed. No upstanding features suggesting structure are visible on the surface of the mound. The feature was not covered by the most recent Magnetometer data, but previous assessments have shown a large negative magnetic monopole of 149 nT at the location, indicating ferrous content.
- 4.4.8 The exact nature of this feature is uncertain, but it is interpreted as a possible wreck. During the 2012 assessment it was noted that, based on its dimensions, it may be a possible small wreck such as a fishing vessel. If this is the case, as there is not clear internal structure

identified in the geophysical dataset, it is possible that the wreck may be upturned but otherwise relatively intact.

- 4.4.9 However, the feature could also represent a mound of cargo or ballast. In this case, the original surrounding wreck structure has completely disintegrated and become dispersed, and any surviving remains are either buried or without surface expression. The possible exception is a short, straight, linear dark reflector with small shadow, measuring 5.3 x 0.3 x 0.1 m, that has been identified within the sand ripples approximately 9 m to the east of the wreck (**7313**). This is interpreted as possible associated wreck debris, and as such has been assigned an A1 archaeological potential rating.
- 4.4.10 It should be noted that both **70636** and **7313** are both situated outside the study area. However, they are retained in this report as the recommended archaeological exclusion zone (AEZ) around these features will encroach upon the study area (see **Section 6.2**).
- 4.4.11 One further feature, debris field **7266**, has been assigned an A1 archaeological potential rating. This is visible in the SSS data as an area of distinct, irregular, linear and angular dark reflectors in random orientations, measuring 19.0 x 13.5 x 0.3 m in size (**Figure 3**). It is visible in the MBES data as an indistinct rounded mound at a general depth of -30.1 m, with a secondary mound to the immediate south-east which is possibly related. A large, complex magnetic anomaly measuring 154 nT in amplitude has been associated with the feature, suggesting ferrous content.
- 4.4.12 This has been interpreted as a debris field. The exact nature of the debris is unknown; however, it has the potential of being wreck remains or other similar debris, and so is considered of high archaeological potential. Visual inspection is needed to confirm the nature of the feature, and therefore determine its archaeological potential. SOWFL will undertake an ROV inspection in 2021 to confirm the nature of the feature, and report the findings subsequently. This feature is situated approximately 16 m WSW of the proposed location of WTG T15 (**Figure 2d**; **Figure 3**).
- 4.4.13 The remaining 344 identified anomalies have all been assigned an A2 archaeological potential rating. Of these, a total of 21 anomalies (in addition to **7313**, see **Appendix C** for full list) have been interpreted as individual pieces of debris. These are generally elongate dark reflectors with shadows, ranging from 0.7 x 0.2 x 0.1 m (**7352**) to 17.2 x 1.7 x 0.0 m (**7004**) in size. Six of these anomalies (**7069**, **7074**, **7111**, **7237**, **7252**, and **7384**) have been associated with distinct magnetic anomalies, suggesting they are at least partially ferrous. The remaining anomalies have not been associated with a magnetic anomaly, indicating that they are non-ferrous in nature.
- 4.4.14 A total of five of these interpreted items of debris (**7003**, **7004**, **7005**, **70628**, and **70639**) have been previously identified using 2012 data and reported during previous phases of work. The remainder have been newly identified within the 2020 data.
- 4.4.15 A total of three anomalies (**7156**, **7158**, and **7159**) have been classified as mounds. These have all been identified in the MBES data only, and range in size from 1.8 x 1.4 x 0.1 m (**7158**) to 4.9 x 1.8 x 0.1 m (**7156**). Two of these anomalies, **7158** and **7159**, are situated approximately 3 m apart and may be related. All three mounds are of uncertain origin and could represent debris covered by seabed sediment or be natural features. No magnetic anomalies were associated with any of the mounds, and so any debris at these locations is likely to be non-ferrous.
- 4.4.16 All the identified mound anomalies have been newly identified within the 2020 geophysical data.

- 4.4.17 A total of 18 anomalies (see **Appendix C** for full list) have been classified as seabed disturbances. These are generally areas containing numerous small, irregular dark reflectors with shadows, often within small depressions. The anomalies range from 1.8 x 0.9 x 0.1 m (**7303**) to 39.2 x 19.2 x 0.3 m (**7007**) in size, and 17 have not been associated with a magnetic anomaly. The exception is **7122**, which has been associated with an 11 nT magnetic anomaly, suggesting either partially ferrous debris or a natural feature containing a relatively high fraction of ferrous minerals.
- 4.4.18 These areas of seabed disturbance are uncertain in nature and could represent areas of debris buried just below the seabed or natural features. Two of the seabed disturbance anomalies (**7007** and **7008**) were identified during the OCP assessment using 2012 data and have been reported previously; the remaining anomalies have been newly identified within the 2020 data. Anomaly **7007** was originally report as possible debris but has been reclassified as a seabed disturbance based on its visible characteristics within the 2020 data set.
- 4.4.19 Seabed disturbance anomaly **7007**, originally identified as two separate features within the initial OCP assessment (Wessex Archaeology 2019a), is much more extensive and well defined within the 2020 data compared with the 2012 data (**Figure 4**). As more of the feature is now exposed, this suggests sediment movement occurs over time within the study area, despite the seabed being generally featureless. The lack of mobile sediment structures (e.g. sand ripples) potentially indicate this is occasional redistribution during storm events, rather than gradual continuous movement. However, it suggests there is the potential for material to be buried within the seabed sediment outside of areas of obvious mobile sediment.
- 4.4.20 A total of three anomalies (**7029**, **7083**, and **7345**) have been classified as bright reflectors. These are relatively short, linear features without shadows or associated magnetic anomalies, ranging from 4.8 x 0.8 x 0.0 m (**7083**) to 12.3 x 0.5 x 0.0 m (**7345**) in size. These anomalies potentially represent pieces of debris that absorb rather than reflect acoustic waves, such as waterlogged wood or synthetic material, or seabed scars. Anomaly **7029** was identified during the OCP assessment using 2012 data and has been reported previously; **7083** and **7345** have been newly identified within the 2020 data.
- 4.4.21 A total of 35 anomalies (see **Appendix C** for full list) have been classified as dark reflectors. These range from 0.7 x 0.6 x 0.1 m (**7356**) to 18.3 x 0.4 x 0.1 m (**7110**) in size, and are generally isolated, irregular features without associated magnetic anomalies.
- 4.4.22 These anomalies could either be individual pieces of debris or natural features; ground truthing would be needed to further determine their archaeological potential. Just one of these anomalies, **7030**, was identified during the OCP assessment using 2012 data and has been reported previously; the remaining anomalies have been newly identified within the 2020 data.
- 4.4.23 The remaining 264 anomalies (see **Appendix C** for full list) are solely magnetic in nature, without any associated SSS or MBES contacts. These range from 5 nT (**7121**, **7380**, and **7383**) to 651 nT (**7153**) in amplitude and indicate potential ferrous debris that is either buried or without surface expression. All of the magnetic anomalies have been newly identified within the 2020 data, probably due to the higher resolution and tighter line spacing of the data relative to that acquired in 2012.
- 4.4.24 Anomaly **7153** is the only magnetic anomaly in excess of 500 nT and is situated at the proposed location of WTG E09. It is known that geotechnical investigations were undertaken at this location, and so it is possible some equipment (e.g. a core barrel or CPT cone) was lost on the seabed during geotechnical operations. However, the anomaly is retained here as a precaution due to its amplitude.

SEABED FEATURES ASSESSMENT RESULTS – OCP

- 4.4.25 No anomalies of high archaeological potential (A1) have been identified within the OCP study area.
- 4.4.26 A total of 10 anomalies have been identified as being of uncertain origin of possible archaeological interest (A2) within the OCP study area. These consist of debris (**7041**), seabed disturbance (**7047**) and eight magnetic anomalies (**7040, 7042-7046, 7170, 7648**).
- 4.4.27 One anomaly (**7041**) has been classified as debris. This is a short, linear dark reflector with a small but distinct shadow, measuring 4.2 x 0.9 x 0.2 m. No magnetic anomaly has been associated with the anomaly, so it is potentially non-ferrous in nature.
- 4.4.28 One anomaly (**7047**) has been classified as an area of seabed disturbance. This is characterised as a shallow, east-west trending depression, approximately 17.7 x 9.9 x 0.2 m in size, contain numerous small dark reflectors and two short, parallel linear ridges. No magnetic anomaly has been associated with this feature, and it could indicate partially buried non-ferrous debris or be a natural exposure of the underlying geology.
- 4.4.29 The remaining eight anomalies (**7040, 7042, 7043, 7044, 7045, 7046, 7170, and 7648**) are solely magnetic in nature, without any associated SSS or MBES contacts. These range from 6 nT (7046) to 106 nT (7044) in amplitude and indicate possible ferrous debris that is either buried or without surface expression.
- 4.4.30 No recorded wrecks or obstructions have been identified in the UKHO database from within the OCP study area.

4.5 ARCHAEOLOGICAL POTENTIAL

SUBMERGED PREHISTORIC POTENTIAL

- 4.5.1 There are no known seabed prehistoric sites within the study area. However, the palaeogeographic assessment of the geophysical data has demonstrated the potential for the presence of as yet undiscovered *in situ* prehistoric sites and finds.
- 4.5.2 The values of these potential sites and features are detailed in **Section 5.2** below.

NAVIGATIONAL HAZARDS

- 4.5.3 A project entitled Enhancing our Understanding: Mapping Navigational Hazards as areas of Maritime Archaeological Potential, undertaken by Bournemouth University (Merritt *et al.* 2007) assessed historical records of navigational hazards to interpret and characterize the marine historic environment. Areas assessed to be hazardous were considered alongside a model of the preservation potential of marine sediments with the purpose of identifying areas where there was not only a high potential for ship losses, but where there was also a high potential for the preservation of archaeological remains. These areas were coined as Areas of Maritime Archaeological Potential (AMAPs).
- 4.5.4 The non-OFTO truncates one AMAP: the offshore area Dogger Bank. The potential for maritime archaeological material pertaining to shipwrecks is particularly high here.

RECORDED LOSSES

- 4.5.5 As discussed in **Section 3.2**, Recorded Losses are records for ships or aircraft that are known to have wrecked or crashed offshore, but for which the exact locations are not known.
- 4.5.6 Recorded Losses can be considered as an indication of the potential for archaeological maritime remains to exist within the study area and the type and number of wrecks that could be present. These records relate to vessels reportedly lost or for which no physical wreck remains have ever been identified. **Table 8** shows the distribution of these documented losses according to the date of loss for those records whose position falls within the study area. Details regarding these losses are presented in **Appendix D**.

Table 8 Recorded Losses based on NRHE and HER data.

PERIOD	NUMBER OF LOSSES
1900 – present	1
Unknown	3

- 4.5.7 There are four recorded losses within the study area, none of which were found to be at the UKHO coordinates in 2013 (Wessex Archaeology 2013). These include a German submarine, U66, which was sunk by gunfire from a British Destroyer in 1917; *William and John* which sprung a leak whilst voyaging from Harwich to Norway, and later towed to Norway and wrecked there; a possible aircraft reported in 1969 (UKHO No. 4949) and a recorded wreck which was later deleted from records (UKHO No.4829).

OVERVIEW OF MARITIME ARCHAEOLOGICAL POTENTIAL

- 4.5.8 The assessment of potential for the discovery of shipwreck and shipwreck-derived material within the study area draws on the results of the geophysical survey and desk-based research combined with further research of the wider area.
- 4.5.9 There is potential for discoveries of maritime craft from the Mesolithic to the modern period. Post-medieval and modern wrecks, as they were generally made of more substantial material, are more likely to have been discovered through surveys undertaken by UKHO and others, and thus recorded in the archaeological record. However, there is still potential for discovery of previously unrecorded wreck sites, particularly of wooden wrecks, broken up wrecks or partially buried wrecks that are more difficult to detect through geophysical survey.
- 4.5.10 There is also potential for 20th century aircraft, particularly in relation to Second World War. Aircraft crash sites are also difficult to identify through archaeological assessments of geophysical survey, although past experience indicates material from the seabed, such as engines or other material may be recorded as small obstructions or anomalies.
- 4.5.11 A small number of wrecks are included as recorded losses for the study area, therefore material associated with these has the potential to be discovered. These have been discussed further above in **section 4.4.25**.
- 4.5.12 The key areas of potential are summarised in Table 9 below.

Table 9 Summary of key areas of maritime potential.

PERIOD	SUMMARY
Pre-1500 AD	Low potential for material associated with prehistoric maritime activities. Prehistoric maritime activities include coastal travel, fishing and the exploitation of other marine and coastal resources. Vessels of this period include rafts, hide covered watercraft and log boats.
	Low potential for material associated with later prehistoric maritime activities, including seaworthy watercraft suitable for overseas voyages to facilitate trade and the exploitation of deep water resources. Such remains are likely to comprise larger boat types, including those representing new technologies such as the Bronze Age sewn plank boats which are associated with a growing scale of seafaring activities.
	Low potential for material of Romano-British date, associated with the expansion and diversification of trade with the Continent. Watercraft of this period, where present, may be representative of a distinct shipbuilding tradition known as 'Romano-Celtic' shipbuilding, often considered to represent a fusion of Roman and northern European methods.
	Low potential for material associated with coastal and seafaring activity in the 'Dark Ages', associated with the renewed expansion of trade routes and Germanic and Norse invasion and migration. Vessels of this period may be representative of new shipbuilding traditions such as the technique.
	Low potential for material associated with medieval maritime activity, including that associated with increasing trade between the UK and Europe, the development of established ports around the southern North Sea and the expansion of fishing fleets and the herring industry. Vessels of this period are representative of a shipbuilding industry which encompassed a wide range of vessel types (comprising both larger ships and vernacular boats). Such wrecks may also be representative of new technologies (e.g. the use of flush-laid strakes in construction), developments in propulsion, the development of reliable navigation techniques and the use of ordnance.
1500 to 1815	Medium potential for post-medieval shipwrecks representative of continuing technological advances in the construction, fitting and arming of ships, and in navigation, sailing and steering techniques. Vessels of this period continued to variously represent both the clinker techniques and construction utilising the flush-laid strakes technique.
	Medium potential for post-medieval shipwrecks associated with the expansion of transoceanic communications and the opening up of the New World.
	Medium potential for post-medieval shipwrecks associated with the establishment of the Royal Navy during the Tudor period and the increasing scale of battles at sea.
1816 to 1913	Higher potential for the discovery of shipwrecks associated with the introduction of iron and later steel in shipbuilding techniques. Such vessels may also be representative of other fundamental changes associated with the industrial revolution, particularly with regards to propulsion and the emergence of steam propulsion and the increasing use of paddle and screw propelled vessels.
	Higher potential for the discovery of shipwrecks demonstrating a diverse array of vernacular boat types evolved for use in specific environments.

PERIOD	SUMMARY
	Higher potential for wrecks associated with large scale worldwide trade, the fishing industry or coastal maritime activity including marine exploitation.
1914 to 1945	Higher potential for the discovery of shipwrecks associated with the two world wars including both naval vessels and merchant ships. Wrecks of this period may also be associated with the increased shipping responding to the demand to fulfil military requirements. A large number of vessels dating to this period were lost as a result of enemy action.
Post-1946	Potential for wrecks associated with a wide range of maritime activities, including military, commerce, fishing and leisure. Although ships and boats of this period are more numerous, losses decline due to increased safety coupled with the absence of any major hostilities. Vessels dating to this period are predominantly lost as a result of any number of isolated or interrelated factors including human error, adverse weather conditions, collision with other vessels or navigational hazards or mechanical faults.

AVIATION ARCHAEOLOGICAL BASELINE AND POTENTIAL

- 4.5.13 The assessment of potential for the discovery of aircraft crash sites and aircraft derived material within the study area draws on the results of the geophysical survey and desk-based research combined with further research of the wider area.
- 4.5.14 Although there is just one possible recorded losses, there is still the potential for the discovery of previously unknown aircraft material dating from the early 20th century until more recent times, with a concentration dating to the World Wars and in particular to the Second World War (Wessex Archaeology 2008a). Discoveries may occur anywhere within the study area.
- 4.5.15 The key areas of aviation potential that may be uncovered within the study area are summarised in **Table 10**.

Table 10 Summary of key areas of aviation potential.

PERIOD	SUMMARY
Pre- 1939	Minimum potential for material associated with the early development of aircraft. Aircraft of this period may represent early construction techniques (e.g. those constructed of canvas covered wooden frames) or may be associated with the mass-production of fixed wing aircraft in large numbers during WWI.
	Minimum potential for material associated with the development of civil aviation during the 1920s and 1930s, associated with the expansion of civilian flight from the UK to a number of European and worldwide destinations.
1939 to 1945	Very high potential for WWII aviation remains, particularly as the east coast acted as a hub for hostile activity. Aircraft of this period are likely to be representative of technological innovations propelled by the necessities of war which extended the reliability and range of aircraft. This potential is signified by the 21 aircraft Recorded Losses outlined above.
Post- 1945	Potential for aviation remains associated with military activities dominated by the Cold War, the evolution of commercial travel and recreational flying and the intensification

PERIOD	SUMMARY
	of offshore industry (including helicopter remains). Aircraft of this period may be representative of advances in aerospace engineering and the development of the jet engine

5. VALUE AND SENSITIVITY

5.1 INTRODUCTION

- 5.1.1 In order to assess the potential impacts of the Project upon archaeological and cultural heritage assets, the methods in **Section 3.4** will be used. Sensitivity of an asset to impacts is gauged on adaptability, tolerance, recoverability and value, but archaeological assets cannot typically adapt, tolerate or recover from physical impacts, and so sensitivity is predominantly quantified only by value.
- 5.1.2 The perceived value of each marine archaeological asset is generally assessed and assigned on a site-by-site basis, depending on the criteria listed in **Table 5**.

5.2 SEABED PREHISTORY

- 5.2.1 There are no known seabed prehistory sites within the study area. However, the palaeogeographic assessment of the geophysical data has demonstrated the potential for the presence of as yet undiscovered *in situ* prehistoric sites and finds.
- 5.2.2 A comprehensive seabed prehistory assessment is presented in *Sofia Offshore Wind Farm – Array: Stage 1 & 2 geoarchaeological assessment of geotechnical data* (Document Reference: 003848720).
- 5.2.3 The values assigned to any potential heritage assets are outlined in **Table 11**.

Table 11 Value of seabed prehistory heritage assets.

ASSET TYPE	DEFINITION	VALUE
Potential <i>in situ</i> prehistoric sites	Primary context features and associated artefacts and their physical setting (if found).	High
	Known submerged prehistoric sites and landscape features with the demonstrable potential to include artefactual material.	High
Potential submerged landscape features	Other known submerged palaeolandscape features and deposits likely to date to periods of prehistoric archaeological interest with the potential to contain <i>in situ</i> material.	High
Potential derived prehistoric finds	Isolated discoveries of prehistoric archaeological material discovered within secondary contexts.	Medium
Potential palaeoenvironmental evidence	Isolated examples of palaeoenvironmental material	Low
	Palaeoenvironmental material associated with specific palaeolandscape features or archaeological material	High

- 5.2.1 On the basis of age and the rarity of Palaeolithic and Mesolithic finds underwater, if any sites or material was discovered, it would likely be of high, probably national archaeological importance. A guidance note published by English Heritage (now Historic England) *Identifying and Protecting Palaeolithic Remains: archaeological guidance for planning authorities and developers* (1998) indicated that sites containing Palaeolithic features are so rare in Britain that they should be regarded as of **national importance** and wherever possible should remain undisturbed.
- 5.2.2 In the event that prehistoric archaeological material discovered offshore is found *in situ* it should be considered of particularly high archaeological importance (Bailey *et al.* 2020). As such, the features and deposits that have the potential to contain within them *in situ* material should be considered as **high value** assets.
- 5.2.3 Prehistoric archaeological material discovered within secondary contexts also has the potential to provide valuable information on patterns of human land use and demography in a field of study that is still little understood and rapidly evolving (Hosfield *et al.* 2007). They are, however, by their very nature derived and, as such, isolated prehistoric finds should be regarded as **medium value** assets.
- 5.2.4 Palaeoenvironmental evidence in the context of an *in situ* prehistoric site (if found) will be of high value. More widely, palaeoland surfaces and palaeolandscape features will be considered of high value for the purpose of this assessment owing to the Quaternary scientific potential of such sedimentary sequences, to contextualise the wider early prehistoric palaeogeography and the potential of palaeolandscape features to preserve *in situ* artefacts and sites (Bicket and Tizzard 2015). Palaeoenvironmental evidence from isolated contexts will be regarded as **low value**.

5.3 SEABED FEATURES: MARITIME

- 5.3.1 There are no wrecks with statutory designations within the study area.
- 5.3.2 There is 1 wreck site and 2 features within the non-OFTO study area which are judged to be of anthropogenic origin of archaeological interest and therefore classed as A1. These are considered as **high value** assets.
- 5.3.3 For all A2 anomalies, there is insufficient data to assess the value of each individual anomaly at this point. As such, all A2 anomalies must be considered to potentially have archaeological value, to a greater or lesser degree and, in accordance with the precautionary principle, are considered as **high value** assets.

5.4 SEABED FEATURES: AVIATION

- 5.4.1 There are no known aircraft crash sites within the study area. Nonetheless, there is the potential for aircraft or aircraft related debris to exist on the seafloor within the study area. Any aircraft remains that may be discovered in the study area, particularly relating to the Second World War, would likely be protected under PMRA 1986 and therefore would be of **high value**.

6. POTENTIAL IMPACTS AND RECOMMENDATIONS

6.1 POTENTIAL IMPACTS

- 6.1.1 This impact assessment refers to guidance developed for the Offshore Renewable Energy sector (COWRIE 2007; 2011). The assessment has also been based on professional archaeological judgement and best practice that has been applied to other consented cable routes.
- 6.1.2 Offshore developments can affect heritage assets in two ways:
- ✦ from the direct effect of the physical siting of the project; and
 - ✦ from indirect changes to the physical marine environment.
- 6.1.1 Impacts to heritage assets and their historic environment occur as a result of changes to their physical environment in terms of loss and/or degradation, which can subsequently reduce the significance of a heritage asset and its wider historic environment. The management and mitigation of such change is based on the principle that archaeological assets are finite, non-renewable and cannot adapt, tolerate or recover from direct impacts.
- 6.1.2 Heritage assets may be buried within seabed sediments or may rest upon the seafloor, either with or without height. As such, direct impacts to such assets can occur during any development or related activity that makes contact with the seafloor or cuts through seabed deposits. Heritage assets with height, such as wrecks, may also be impacted by development or activities that occur within the water column.
- 6.1.3 The implementation of the marine element of the project is anticipated to entail the following sources of ground disturbance:
- ✦ Seabed preparation prior to substructure installation and subsea inter-array cable laying;
 - ✦ Survey and clearance of unexploded ordnance (UXO) and boulders;
 - ✦ Laying of turbine foundations;
 - ✦ Laying of inter-array cables (methods include ploughing, jet trenching, dredging, mass flow excavation and / or mechanical trenching);
 - ✦ Backfilling of cable trenches and protection/stabilisation of surface laid marine cables (options include rock placement, concrete/frond mattresses, or uraduct);
 - ✦ Scour associated with the disturbances listed above; and
 - ✦ Seabed contact by legs of jack-up vessels and/or anchors on vessels associated with the installation, maintenance and decommissioning phases of the Project.
- 6.1.1 The activities listed above may result in impacts that have potential direct and/or indirect effects on marine archaeological heritage assets. The activities and anticipated effects are summarised as follows (**Table 12**):

Table 12 Impact types and potential effects on marine archaeological heritage assets.

ACTIVITY	ANTICIPATED EFFECTS ON ARCHAEOLOGICAL ASSET	IMPACT TYPE
Seabed preparation	Direct damage/destruction to assets lying on the seafloor and buried within the shallower seabed sediments	Direct
UXO survey and clearance	Direct damage to assets located within close proximity to UXO	Direct
Installation of turbine foundations and placing of scour protection	Direct damage/destruction to assets lying on the seafloor and buried within the shallower seabed sediments.	Direct
Installation of ancillary infrastructure	Direct damage/destruction to assets lying on the seafloor and buried within the shallower seabed sediments.	Direct
Cable burial whereby seabed is truncated	Direct damage/destruction to assets, and / or their physical setting, lying on the seafloor and buried within the seabed sediments.	Direct
Cable laying on the seabed	Direct damage/destruction to assets lying on the seafloor.	Direct
Installation of cable protection (where burial is not possible)	Direct damage/destruction to assets, and / or their physical setting, lying on the seafloor and buried within the seabed sediments.	Direct
	Potential scour and plume effects resulting in increased protection to, or deterioration of, assets in the vicinity.	Indirect
Seabed contact by legs of jack-up vessels and/or anchors on vessels during installation, scheduled and unplanned maintenance works and decommissioning works.	Localised damage/destruction to assets, and/or their physical setting, lying on the seafloor and buried within the seabed sediments.	Direct
Deployment of large vessels during construction and decommissioning phases	Potential displacement of sediment either affording increased protection to, or deterioration of, assets in the vicinity.	Indirect
Changes to the hydrodynamic and sedimentary regimes due to spoil removal and distribution caused by installation of foundations and trenching operations.	Increased protection to, or deterioration of, assets resulting in a beneficial or adverse effect on assets in the vicinity.	Indirect
Changes to hydrodynamic and sedimentary regimes resulting from the removal of turbines and cables and associated scour protection as part of decommissioning works.	Increased protection to, or deterioration of, assets resulting in a beneficial or adverse effect on marine archaeological assets in the vicinity.	Indirect

6.2 RECOMMENDATIONS

- 6.2.1 Typically, adequate and appropriate mitigation is required to ensure that the archaeological value of the baseline within this report is maintained. Recommendations for appropriate mitigation are set out below.
- 6.2.2 The assessment of the geophysical data within the study area resulted in a total of 347 anomalies within the array study area and 10 within the OCP study area identified as being of possible archaeological interest. These are summarised as follows:
- ✦ a total of 3 features were assigned an A1 archaeological rating, two of which (**70636** and **7313**) are located outside the survey area, and one (**7266**) close to WTG T15;
 - ✦ a total of 344 anomalies within the array study area and 10 within the OCP study area were assigned an A2 archaeological rating, of which 118 are located within 50 m of a proposed WTG, IAC, or the OCP; and
 - ✦ no recorded wrecks or obstructions were identified within the study area.

AVOIDANCE

- 6.2.3 The primary mitigation for the protection of known archaeological assets is avoidance. This is achieved through the implementation and monitoring of Archaeological Exclusion Zones (AEZs), which are proposed for identified high value seabed features of anthropogenic origin (i.e. A1 classified geophysical anomalies).
- 6.2.4 The mitigation will establish appropriately sized AEZs around assets which have been considered to be of high archaeological potential, in consultation with Historic England. These areas would be out of bounds to construction activities and to anchoring. Monitoring of any AEZs to ensure there is no disturbance to them will be part of this mitigation. This report is intended to inform the decision-making process for confirming the final AEZs and micro siting.
- 6.2.5 Currently, one AEZ is in place that directly affects the study area from the previous Round 3 Zone assessment. This is centred on potential wreck **70636** and comprises a 100 m buffer around the visible extents of the feature. It is recommended that this AEZ remains in place, although the exact extents have been altered slightly based on the more recent data.
- 6.2.6 It would also be recommended that, as possible associated wreck debris, an AEZ is also placed around anomaly **7313**. As a distinct, individual feature, an AEZ of 50 m around the anomaly position would be recommended. However, as this would be completely inside the AEZ from **70636**, it is deemed unnecessary at this point.
- 6.2.7 It is also recommended that a new AEZ of 50 m be placed around debris field **7266**. Due to its proximity to WTG T15, an ROV inspection survey will be undertaken in consultation with Historic England and reported separately, supported by a bespoke Method Statement (in Q1 2021).
- 6.2.8 A summary of the recommended AEZs is provided in **Table 13**.

Table 13 Recommended AEZ's within the study area reduction.

ID NUMBER	CLASSIFICATION	POSITION (WGS84 UTM31N)		STATUS	EXCLUSION ZONE
		Easting	Northing		
70636	Wreck	459221	6084897	Reviewed - retained unchanged	100 m buffer around current feature extent
7266	Debris field	465989	6093257	New	50 m buffer around current feature extent

- 6.2.9 For features assigned A2 archaeological discrimination rating, no AEZs are recommended at this time. However, avoidance of these features by micro-siting is recommended if they will be directly impacted by development in the future. If micro-siting is not possible, then further assessment to ascertain the nature of the features may be required.
- 6.2.10 It is recommended that if any objects of possible archaeological interest are recovered during any groundwork operations, that they should be reported using the established Protocol for Archaeological Discoveries: Offshore Renewables Projects (The Crown Estate 2014). This will establish whether the recovered objects are of archaeological interest and recommend appropriate mitigation measures.
- 6.2.11 Reduction of impact can be achieved by means of appropriate mitigation identified through potential opportunities for further investigation of assets (e.g. during UXO survey and clearance). Further investigations mean that anomalies can either have their archaeological value removed, if they prove to be of non-anthropogenic nature or modern, or their value as archaeological assets confirmed. If their value is confirmed, mitigation in the form of either avoidance (which may be enacted by the implementation of an AEZ) or through remedying or offsetting measures as identified through a Written Scheme of Investigation (WSI) which includes a Protocol for Archaeological Discoveries.

REMEDYING AND OFFSETTING

- 6.2.12 In cases where avoidance is either inappropriate or impossible, the damage to archaeological assets should be offset. In the case of seabed prehistoric features, this can be achieved by undertaking a palaeoenvironmental assessment of deposits with high geoarchaeological potential, principally peat deposits. Pollen and macrofossil assessment, supported by radiocarbon dating, will provide information on age and vegetation history of the terrestrial environment, providing a landscape context to any prehistoric activity within the area. Recovery of artefacts and/or other archaeological assets should be a final resort, when all other mitigation has failed. Any recovery should be completed under the supervision of an appropriately qualified and experienced marine archaeologist. Recovery methods are identified through the WSI. Due to the vast differences in practice and implementation between these methods, each will be covered by a specific Method Statement, approved by the Archaeological Curator, should they be implemented.

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APPENDIX A. TERMINOLOGY

List of Acronyms

AC	Alternating Current
AD	<i>Anno Domini</i>
ADS	Archaeological Data Service
ADU	Archaeological Diving Unit
AEZ	Archaeological Exclusion Zone
ALSF	Aggregate Levy Sustainability Fund
BCE	Before Common Era
BGS	British Geological Survey
BH	Borehole
BP	Before Present
BULSI	Build, Use, Loss, Survival and Investigation
CES	Crown Estate Scotland
CifA	Chartered Institute for Archaeologists
COWRIE	Collaborative Offshore Wind Research into the Environment
CPT	Cone Penetrometer Test
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DCLG	Department for Communities and Local Government
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ELCAS	East Lothian Council Archaeology Service
ES	Environmental Statement
GIS	Geographic Information System
HE	Historic England
HER	Historic Environment Record
HSC	Historic Seascape Characterisation
JCCC	Joint Casualty and Compassionate Centre
JNAPC	Joint Nautical Archaeology Policy Committee
MEDIN	Marine Environment Data and Information Network
MHWS	Mean High Water Springs
MMO	Marine Management Organisation

MoD	Ministry of Defence
MoRPHE	Management of Research Projects in the Historic Environment
MPS	Marine Policy Statement
N/A	Not applicable (not included in dataset)
NM	Nautical Miles
NRHE	National Record of the Historic Environment
OFTO	Offshore Transmission Owner
O&M	Operation and Maintenance
ORPAD	Offshore Renewables Protocol for Archaeological Discoveries
OSP	Offshore Substation Platform
PAD	Protocol for Archaeological Discoveries
PEIR	Preliminary Environmental Information Report
ROV	Remotely Operated Vehicle
SOWFL	Sofia Offshore Windfarm Limited
TCE	The Crown Estate
UKHO	United Kingdom Hydrographic Office
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
WA	Wessex Archaeology
WSI	Written Scheme of Investigation

Glossary

A.1 The terminology used in this assessment follows definitions contained within UK’s National Planning Policy Framework (Department for Communities and Local Government 2012, 50-57):

Archaeological interest	There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them.
Conservation (for heritage policy)	The process of maintaining and managing change to a heritage asset in a way that sustains and, where appropriate, enhances its significance.
Designated heritage assets	World Heritage Sites, Scheduled Monuments, Listed Buildings, Protected Wreck Sites, Registered Park and Gardens, Registered Battlefields and Conservation Areas designated under the relevant legislation.

Heritage asset	A building monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage assets include designated heritage assets and assets identified by the local planning authority (including local listing).
Historic environment	All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora.
Historic environment record	Information services that seek to provide access to comprehensive and dynamic resources relating to the historic environment of a defined geographic area for public benefit and use.
Setting of a heritage asset	The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.
Significance (for heritage policy)	The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.
Value	An aspect of worth or importance.

Chronology

A.2 Where referred to in the text, the main archaeological periods are broadly defined by the following date ranges:

Prehistoric		Historic	
Palaeolithic	970,000–9500 BC	Romano-British	AD 43–410
Early Post-glacial	9500–8500 BC	Saxon	AD 410–1066
Mesolithic	8500–4000 BC	Medieval	AD 1066–1500
Neolithic	4000–2400 BC	Post-medieval	AD 1500–1800
Bronze Age	2400–700 BC	19th century	AD 1800–1899
Iron Age	700 BC–AD 43	Modern	1900–present day

APPENDIX B. LEGISLATION POLICY AND GUIDANCE

Global Policy and Legislation

Legislation/Policy	Summary
The World Heritage Convention 1972	<p>The Convention provides for the identification, protection, conservation and presentation of cultural and natural sites of 'outstanding universal value' for inscription on the World Heritage List. The Convention sets out the duties of States Parties in identifying potential sites and their role in protecting and preserving them. By signing the Convention, each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage. The 1972 UNESCO World Heritage Convention was ratified by the UK in 1984 and the UK currently has 29 World Heritage Sites.</p>
The United Nations Convention on the Law of the Sea 1982	<p>UNCLOS 1982 was ratified by the UK in 1997. Article 149 applies only to those archaeological and historical objects that lie outside national jurisdiction and stipulates that 'all objects of an archaeological and historical nature found in the Area shall be preserved or disposed of for the benefit of mankind as a whole, particular regard being paid to the preferential rights of the State or country of origin, or the State of cultural origin, or the State of historical and archaeological origin'. Article 303 stipulates that 'states have the duty to protect objects of an archaeological and historical nature found at sea and shall co-operate for this purpose'. Article 303 also provides for coastal states to exert a degree of control over the archaeological heritage to 24 nm, though the UK has not introduced any measures to implement this right.</p>
International Council of Monuments and Sites Charter on the Protection and Management of Underwater Cultural Heritage 1996 (the Sofia Charter)	<p>The Charter upon which the Annex of the UNESCO Convention is largely based includes a series of statements regarding best practice, intending 'to ensure that all investigations are explicit in their aims, methodology and anticipated results so that the intention of each project is transparent to all'. The UK is a member of the International Council of Monuments and Sites.</p>
UNESCO Convention on the Protection of the Underwater Cultural Heritage (2001)	<p>The UNESCO Convention was concluded in 2001, and is a comprehensive attempt to codify the law internationally with regards to underwater archaeological heritage. The UK abstained in the vote on the final draft of the Convention, however, it has stated that it has adopted the Annex of the Convention, which governs the conduct of archaeological investigations, as best practice for archaeology. Although the UK is not a signatory, the convention entered into force on 2nd January 2009 having been signed or ratified by 60 member states.</p>

European Policy and Legislation

Legislation/Policy	Summary
The European Convention on the Protection of the Archaeological Heritage (Revised) 1992 (The Valletta Convention)	<p>The Articles of the Valletta Convention tackle various aspects. Article 1 deals with the inventorying and protection of sites and areas; Article 2 deals with the mandatory reporting of chance finds and providing for 'archaeological reserves' on land or underwater; Article 3 promotes high standards for all archaeological work undertaken by suitably qualified people; Article 4 requires the conservation of excavated sites and the safe-keeping of finds; and Article 5 is concerned with consultation that should take place between planning authorities and developers to avoid damage to archaeological remains.</p> <p>The Valletta Convention was ratified by the UK Government in 2000 and came into force in 2001. The convention binds the UK to implement protective measures for the archaeological heritage within the jurisdiction of each party, including sea areas. Insofar as the UK exerts jurisdiction over the Continental Shelf, then it would appear that the provisions of the Valletta Convention apply to that jurisdiction.</p>
The European Landscape Convention 2000	<p>The European Landscape Convention became binding on the UK from 1 March 2007. Its principal clauses require the Government to protect and manage landscapes and to integrate landscape into regional and town planning policies including its cultural, environmental, agricultural, social and economic policies. The Convention applies to the entire territory of the UK and includes land, inland water and marine areas. It is not regarded as applying to sea areas regulated by the UK that lie beyond territorial waters.</p>
European Directives for Environmental Impact Assessments (2014/52/EU)	<p>The EIA Directive entered into force on 15 May 2014 to simplify the rules for assessing the potential effects of projects on the environment. The newly amended directive replaces former directives (85/337/EEC; 97/11/EC; 2003/35/EC; 2009/31/EC; 2011/92/EU) and Member States applied these in May 2017.</p>

United Kingdom Policy and Legislation

Legislation/Policy	Summary
Ancient Monuments and Archaeological Areas Act 1979 (as amended)	<p>Scheduled Monuments and Archaeological Areas of Importance (AAs or their equivalent) are afforded statutory protection and the consent of Secretary of State (DCMS), as advised by Historic England, is required for any works. This Act is primarily used to protect terrestrial site, but has also been used to protect underwater sites.</p>
Protection of Wrecks Act 1973: Section Two	<p>This provides protection for wrecks that have been designated as dangerous due to their contents and is administered by the Maritime and Coastguard Agency through the Receiver of Wreck.</p>

Legislation/Policy	Summary
Protection of Military Remains Act 1986	<p>Under the Protection of Military Remains Act 1986, all aircraft that have crashed whilst in military service are automatically protected. Maritime vessels (e.g. ships and boats) lost during military service are not automatically protected, although the Ministry of Defence (MoD) has powers to protect any vessel that was in military service when lost. The MoD can designate wrecks whose position is known as ‘controlled sites’ and can designate named vessels whose location is unknown ‘protected places’. It is not necessary to demonstrate the presence of human remains for wrecks to be designated as either ‘controlled sites’ or ‘protected places’.</p>
Merchant Shipping Act 1995	<p>This Act sets out the procedures for determining the ownership of underwater finds classified as ‘wreck’; defined as any flotsam, jetsam, derelict and lagan found in or on the shores of the sea or any tidal water. It includes ship, aircraft, hovercraft, parts of these, their cargo or equipment. If any such finds are brought ashore, the salvor is required to give notice to the Receiver of Wreck that he/she has found or taken possession of them and, as directed by the Receiver, either hold them pending the Receiver’s order or deliver them to the Receiver.</p> <p>The Act is administered by the Maritime and Coastguard Agency. Beyond the 12 nm limit, the Merchant Shipping Act 1995 covers wreck found or taken into possession outside UK waters, and stipulates that if brought into UK waters, finds must be reported to the Receiver of Wreck. The provisions of the Protection of Military Remains Act 1986 regarding Controlled Sites are applicable in international waters, though they are only enforceable with respect to British-controlled ships, British citizens and British companies.</p>
Marine and Coastal Access Act 2009	<p>Under this Act the UK was divided into marine planning regions with an associated plan authority responsible for preparing a marine plan for that area.</p>
National Planning Policy Framework 2012	<p>The National Planning Policy Framework is a key part of reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth. A core planning principle is to, “conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations”. A draft revision of the policy framework was released on 24 July, 2018.</p> <p>A summary of the key paragraphs are included below.</p> <ul style="list-style-type: none"> • Paragraph 189. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets’ importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic

Legislation/Policy	Summary
	<p>environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk based assessment and, where necessary, a field evaluation.</p> <ul style="list-style-type: none"> • Paragraph 190. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposal. • Paragraph 193. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset’s conservation. The more important the asset, the greater the weight should be. • Paragraph 197. The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset. • Paragraph 199. Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably. • Paragraph 200. Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible.

Legislation/Policy	Summary
Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change 2011a)	This National Policy Statement (NPS) sets out national policy for energy infrastructure, and the importance of archaeological assessment in the development process.
National Policy Statement for Renewable Energy Infrastructure (EN-3) (Department of Energy and Climate Change 2011b)	This NPS, taken together with the overarching NPS (EN-1), provides the primary basis for decisions by the Planning Inspectorate on renewable energy infrastructure development applications. It sets out the importance of the historic environment and the ways it can be impacted by development, outlines guidance for application assessments, Planning Inspectorate decision making and mitigation measures.
National Policy Statement for Electricity Networks Infrastructure (EN-5) (Department of Energy and Climate Change 2011c)	This NPS, taken together with the overarching NPS (EN-1) provides for decision making on above ground electricity lines of 132kV and over and other electricity networks associated with a Nationally Significant Infrastructure Project e.g. substations and converted stations.
Marine Policy Statement 2011	The Marine Policy Statement was jointly published by all UK Administrations in March 2011 as part of a new system of marine planning being introduced across UK seas.

Professional Guidance

Code of Practice for Seabed Developers, Joint Nautical Archaeology Policy Committee (Joint Nautical Archaeology Policy Committee 2006)	This voluntary Code provides a framework for seabed developers similar to the principles found in current policy and practice on land. The aim of the Code is to ensure a best practice model for seabed development. The Code offers guidance to developers on issues such as risk management and legislative implications.
Standard and guidance for historic environment desk-based assessment (Chartered Institute for Archaeologists 2014, updated 2017)	This guidance seeks to define good practice for the execution and reporting of desk-based assessment, in line with the by-laws of the Chartered Institute for Archaeologists. The standard and guidance was formally adopted as approved practice at the Annual General Meeting of the Institute held on 14 October 1994. This revision recognises the new Chartered status of the Institute.

APPENDIX C. SEABED ANOMALIES OF ARCHAEOLOGICAL POTENTIAL

C.1 Seabed features of archaeological potential within the OCP area

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7040	Magnetic	451781	6095046	A2	-	-	-	12	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contact. Possible small piece of buried ferrous debris.	Mag.	Array 2020	OCP	-
7041	Debris	452279	6095643	A2	4.2	0.9	0.2	-	Short, linear dark reflector with small but distinct shadows at either end. Located in an area of generally featureless seabed. No associated magnetic anomaly. Possible non-ferrous debris.	SSS	Array 2020	OCP	-
7042	Magnetic	452259	6094366	A2	-	-	-	12	Small but distinct magnetic dipole identified on one survey line, but on overlapping data sets. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020, OFTO 2020	Block G/OCP	-
7043	Magnetic	452494	6094120	A2	-	-	-	27	Medium positive magnetic monopole identified on one survey line. No associated SSS or MBES contacts. Possible small piece of buried ferrous debris.	Mag.	Array 2020	OCP	-
7044	Magnetic	452655	6094439	A2	-	-	-	106	A large, distinct magnetic dipole identified on more than one survey line and on overlapping data sets. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020, OFTO 2020	Block G/OCP	-
7045	Magnetic	452816	6094440	A2	-	-	-	8	A small positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible small piece of buried ferrous debris, or a natural feature	Mag.	Array 2020	OCP	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7046	Magnetic	452840	6094417	A2	-	-	-	6	A small, broad magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible small piece of buried ferrous debris, or a natural feature	Mag.	Array 2020	OCP	-
7047	Seabed disturbance	452949	6094544	A2	17.7	9.9	0.2	-	Elongate area of seabed disturbance comprising numerous small dark reflectors, some with small shadows, and two distinct, parallel, linear ridges. Identified in the MBES data as an east-west trending shallow depression, with two NNW-SSE trending linear features at its eastern end. No associated magnetic anomaly. Located in an area of similar natural depressions and may be a natural feature, but the linear features may indicate possible debris.	SSS, MBES	Array 2020	OCP	-
7170	Magnetic	452749	6093650	A2	-	-	-	16	A small negative monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	OCP	-
7648	Magnetic	452586	6094570	A2	-	-	-	64	Medium negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	OFTO 2020	Block G/OCP	-

Notes

1. Co-ordinates are in WGS84 UTM31N
2. Positional accuracy estimated ± 5 m

C.2 Seabed features of archaeological potential within the Array area

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7048	Magnetic	433496	6096443	A2	-	-	-	41	Identified in the Mag data as a small dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, A01	-
7049	Magnetic	433907	6096449	A2	-	-	-	20	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, A01	-
7050	Magnetic	434647	6095360	A2	-	-	-	95	Identified in the Mag data as a medium, sharp dipole with peak and trough on one survey line. Broad, slightly complex trough. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, B01	-
7051	Magnetic	436646	6093394	A2	-	-	-	9	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H	-
7052	Magnetic	436687	6093421	A2	-	-	-	22	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H	-
7053	Seabed disturbance	438121	6091859	A2	9.3	4.6	0.2	-	Identified in the SSS data as a collection of closely spaced dark reflectors which cast relatively bright shadows. The features appear fairly angular and varies in height. No clear associated scour pattern. No corresponding magnetic or MBES contact. Possible partially buried items of non-ferrous debris, but could be a natural feature	SSS	Array 2020	Block H	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7054	Magnetic	438626	6091923	A2	-	-	-	19	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H	-
7055	Magnetic	438510	6091803	A2	-	-	-	13	Identified in the Mag data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, E01-F01	-
7056	Magnetic	438484	6091772	A2	-	-	-	20	Identified in the Mag data as a small dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, E01-F01	-
7057	Magnetic	441240	6089100	A2	-	-	-	34	Identified in the Mag data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, H01	-
7058	Magnetic	442420	6087627	A2	-	-	-	13	Identified in the Mag data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H	-
7059	Magnetic	443236	6086967	A2	-	-	-	7	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-
7060	Magnetic	443337	6087002	A2	-	-	-	8	Identified in the Mag data as a small, broad dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H, K01-L01	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7061	Magnetic	443549	6087106	A2	-	-	-	7	Identified in the Mag data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-
7062	Magnetic	443530	6087037	A2	-	-	-	28	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-
7063	Magnetic	443466	6087033	A2	-	-	-	11	Identified in the Mag data as a small dipole with peak and trough on one survey line. One of a close pair. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-
7064	Magnetic	443478	6087027	A2	-	-	-	11	Identified in the Mag data as a small dipole with peak and trough on one survey line. One of a close pair. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-
7065	Magnetic	443479	6087019	A2	-	-	-	7	Identified in the Mag data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-
7066	Magnetic	443529	6086977	A2	-	-	-	13	Identified in the Mag data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7067	Magnetic	443474	6086953	A2	-	-	-	7	Identified in the Mag data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H	-
7068	Magnetic	443522	6086867	A2	-	-	-	9	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. Located in an area of multiple anomalies which may be related. May represent possible ferrous debris with no surface expression, or be a natural feature.	Mag	Array 2020	Block H, K01-L01	-
7069	Debris	443883	6086686	A2	1.1	0.4	0.1	12	Identified in the SSS data as a small dark reflector which casts a narrow shadow. An associated scour pattern is visible. It is visible in the magnetometer data as a small anomaly indicating the presence of ferrous material. There is no corresponding MBES contact. Possible ferrous debris.	SSS, Mag	Array 2020	Block H	-
7070	Magnetic	443680	6086465	A2	-	-	-	8	Identified in the Mag data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H	-
7071	Magnetic	444210	6086218	A2	-	-	-	8	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, L01	-
7072	Magnetic	446253	6084181	A2	-	-	-	32	Identified in the Mag data as a small, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, N01	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7073	Magnetic	447076	6083333	A2	-	-	-	11	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, N01-P01	-
7074	Debris	447364	6082654	A2	1.7	0.2	0.1	8	Identified in the SSS data as a distinct short linear dark reflector which casts a bright shadow along its length. This is located in an area of featureless seabed. It is visible in the magnetometer data as a small anomaly indicating the presence of ferrous material. There is no corresponding MBES contact. Possible ferrous debris.	SSS, Mag	Array 2020	Block H	-
7075	Magnetic	448356	6082235	A2	-	-	-	32	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, Q01	-
7076	Magnetic	449229	6080907	A2	-	-	-	19	Identified in the Mag data as a small dipole with peak and trough on one survey line. Adjacent but separate to similar anomaly. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, R01	-
7077	Magnetic	449235	6080900	A2	-	-	-	19	Identified in the Mag data as a small dipole with peak and trough on one survey line. Adjacent but separate to similar anomaly. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, R01	-
7078	Magnetic	449735	6080952	A2	-	-	-	66	Identified in the Mag data as a medium negative monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, R01	-
7079	Magnetic	449802	6080648	A2	-	-	-	19	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7080	Magnetic	450135	6080044	A2	-	-	-	18	Identified in the Mag data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H	-
7081	Magnetic	450390	6080220	A2	-	-	-	16	Identified in the Mag data as a small dipole with peak and trough on one survey line. At end of line, possible data artefact although replicated on additional line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag	Array 2020	Block H, S01, S01-N03	-
7082	Magnetic	442344	6092648	A2	-	-	-	27	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block J	-
7083	Bright reflector	440797	6098248	A2	4.8	0.8	0.0	-	Short, linear bright reflector, identified cutting across sand ripples. No associated magnetic Anomaly. Possible partially buried non-ferrous debris, but could be a scar or object in the water column.	SSS	Array 2020	Block K	-
7084	Magnetic	441577	6097350	A2	-	-	-	15	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7085	Dark reflector	441686	6097120	A2	1.3	0.7	0.0	-	An elongate dark reflector with a bright narrow shadow, and possible secondary feature immediately to the north. No associated magnetic anomaly. Possible non-ferrous debris, or a natural feature.	SSS	Array 2020	Block K	-
7086	Dark reflector	441704	6097183	A2	4.0	0.4	0.1	-	An indistinct dark reflector with a bright shadow. It appears possibly elongate and the shadow seems to indicate multiple anomalies or is fragmented. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block K	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7087	Magnetic	442983	6095448	A2	-	-	-	103	Large, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7088	Magnetic	443274	6095337	A2	-	-	-	14	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7089	Magnetic	443248	6095324	A2	-	-	-	8	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7090	Magnetic	444024	6094665	A2	-	-	-	48	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Located in an area with numerous natural background anomalies, but appears distinct from the background signal. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7091	Magnetic	445371	6093497	A2	-	-	-	102	Large, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7092	Magnetic	445854	6093145	A2	-	-	-	52	Medium magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7093	Magnetic	445818	6093123	A2	-	-	-	16	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural features identified within the SSS or MBES data. Retained as a precaution.	Mag.	Array 2020	Block K	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7094	Magnetic	445788	6093086	A2	-	-	-	29	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural features identified within the SSS or MBES data. Retained as a precaution.	Mag.	Array 2020	Block K	-
7095	Magnetic	446989	6092019	A2	-	-	-	7	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7096	Magnetic	447201	6091682	A2	-	-	-	17	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7097	Magnetic	448704	6090105	A2	-	-	-	6	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7098	Magnetic	448854	6089909	A2	-	-	-	32	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7099	Magnetic	449851	6088681	A2	-	-	-	49	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural feature identified at this location. Retained as a precaution.	Mag.	Array 2020	Block K	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7100	Magnetic	450698	6088339	A2	-	-	-	37	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural feature identified at this location. Retained as a precaution.	Mag.	Array 2020	Block K, N05	-
7101	Magnetic	450664	6088302	A2	-	-	-	11	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural feature identified at this location. Retained as a precaution.	Mag.	Array 2020	Block K, N05	-
7102	Magnetic	450696	6088270	A2	-	-	-	52	Medium magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural feature identified at this location. Retained as a precaution.	Mag.	Array 2020	Block K, N05	-
7103	Magnetic	450603	6088214	A2	-	-	-	29	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural feature identified at this location. Retained as a precaution.	Mag.	Array 2020	Block K, N05	-
7104	Magnetic	450591	6088174	A2	-	-	-	163	Large, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Potentially part of a linear alignment, but no linear natural feature identified at this location. Retained as a precaution.	Mag.	Array 2020	Block K, N05	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7105	Magnetic	450528	6088012	A2	-	-	-	22	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K, N05	-
7106	Seabed disturbance	451924	6087139	A2	15.8	11.2	0.2	-	Irregular area of dark and bright reflectors, some with small shadows. No associated magnetic anomaly. Found by MBES data to be in an area of numerous similar natural depressions in the seabed sand containing exposed underlying till. However, this feature appears deeper, and more distinct. Possible non-ferrous debris in a scour, but may be a natural feature. Retained as a precaution.	SSS	Array 2020	Block K	-
7107	Seabed disturbance	451953	6087129	A2	5.5	4.3	0.0	-	Irregular area of dark and bright reflectors without an associated magnetic anomaly. Found by MBES data to be in an area of numerous similar natural depressions in the seabed sand containing exposed underlying till. However, this feature appears deeper, and more distinct. Possible non-ferrous debris in a scour, but may be a natural feature. Retained as a precaution.	SSS	Array 2020	Block K	-
7108	Magnetic	452004	6087041	A2	-	-	-	18	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7109	Dark reflector	451954	6086967	A2	10.7	0.3	0.1	-	Short, straight, linear dark reflector with small shadow but without an associated magnetic anomaly. Located in an area of numerous patches of exposed underlying till. Possible non-ferrous debris or a seabed scar. Located adjacent to similar feature 7110 and may be related.	SSS	Array 2020	Block K	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7110	Dark reflector	451961	6086970	A2	18.3	0.4	0.1	-	Curvilinear dark reflector with small shadow but without an associated magnetic Anomaly. Located in an area of numerous patches of exposed underlying till. Possible non-ferrous debris or a seabed scar. Located adjacent to similar feature 7109 and may be related.	SSS	Array 2020	Block K	-
7111	Debris	451987	6086911	A2	5.3	0.2	0.0	15	Distinct short, curved dark reflector without shadow, located within an area of natural seabed disturbance. Potentially associated with a small but distinct, complex magnetic dipole. Possible ferrous debris.	SSS, Mag.	Array 2020	Block K	-
7112	Seabed disturbance	451795	6086672	A2	10.0	6.2	0.0	-	Irregular area of dark and bright reflectors without an associated magnetic anomaly. Found by MBES data to be in an area of numerous similar natural depressions in the seabed sand containing exposed underlying till. However, this feature appears deeper, and more distinct. Possible non-ferrous debris in a scour, but may be a natural feature. Retained as a precaution.	SSS	Array 2020	Block K	-
7113	Seabed disturbance	451804	6086660	A2	14.0	6.2	0.0	-	Irregular area of dark and bright reflectors without an associated magnetic anomaly. Found within the MBES data to be in an area of numerous similar natural depressions in the seabed sand containing exposed underlying till. However, this feature appears deeper, and more distinct. Possible non-ferrous debris in a scour, but may be a natural feature. Retained as a precaution.	SSS	Array 2020	Block K	-
7114	Dark reflector	451979	6086666	A2	2.7	0.8	0.2	-	Indistinct, elongate dark reflector with small shadow, surrounded by a small area of seabed disturbance. No associated magnetic anomaly. Located in an area of numerous seabed depressions containing exposed underlying till. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block K	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7115	Dark reflector	452885	6086232	A2	8.1	0.2	0.1	-	Short, curvilinear dark reflector with small shadow, but without an associated magnetic anomaly. Located in an area of featureless seabed. Possible non-ferrous debris or a seabed scar.	SSS	Array 2020	Block K, Q05	-
7116	Seabed disturbance	453697	6085392	A2	4.2	2.1	0.0	-	Small, elongate area of mainly bright reflectors, appears to be more than just one single feature. No associated magnetic anomaly. Situated in a featureless area of seabed. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block K	-
7117	Seabed disturbance	453654	6085457	A2	9.2	8.2	0.0	-	Area of parallel, elongate bright reflectors, in a generally featureless area of seabed. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block K	-
7118	Magnetic	453497	6085133	A2	-	-	-	8	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7119	Magnetic	453808	6085032	A2	-	-	-	25	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K, Q05-S05	-
7120	Magnetic	454747	6083920	A2	-	-	-	23	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block K	-
7121	Magnetic	442500	6100606	A2	-	-	-	5	A small, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M, C07	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7122	Seabed disturbance	442754	6100390	A2	5.0	4.8	0.1	11	An area of small dark reflectors which cast small shadows and an adjacent mound. Associated with a small magnetic dipole with peak and trough on one survey line. No associated MBES contacts. Possible items of ferrous debris, or a natural feature containing a relatively high ferrous mineral content.	SSS, Mag.	Array 2020	Block M	-
7123	Magnetic	443348	6099240	A2	-	-	-	89	A medium, sharp magnetic dipole with peak and trough over two survey lines. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7124	Magnetic	444125	6098686	A2	-	-	-	44	A small, broad magnetic dipole with peak and trough over two survey lines. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M, C07-E07	-
7125	Magnetic	445202	6097620	A2	-	-	-	124	A large, sharp magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7126	Magnetic	445596	6097532	A2	-	-	-	14	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7127	Magnetic	446525	6096025	A2	-	-	-	21	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7128	Magnetic	446640	6095909	A2	-	-	-	19	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7129	Magnetic	447293	6095704	A2	-	-	-	12	A small negative magnetic monopole with peak and trough on one survey line. No associated MBES or magnetic contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7130	Magnetic	447919	6095156	A2	-	-	-	13	A small positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7131	Magnetic	448541	6094086	A2	-	-	-	8	A small, broad magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7132	Magnetic	449123	6093507	A2	-	-	-	11	A small, broad magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7133	Debris	449811	6093197	A2	4.1	1.3	0.1	-	A narrow, curvilinear dark reflector which casts a fairly bright shadow with two tapering projections. No associated MBES or magnetic contacts. Possible item of non-ferrous debris.	SSS	Array 2020	Block M	-
7134	Dark reflector	449810	6093182	A2	4.2	0.3	0.1	-	Curvilinear dark reflector which widens in the centre slightly and casts a small bright shadow. No associated MBES or magnetic contacts. Possible item of non-ferrous debris or a natural feature.	SSS	Array 2020	Block M	-
7135	Magnetic	450518	6092336	A2	-	-	-	7	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block M, L07	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7004	Debris	450594	6092271	A2	17.2	1.7	0.0	-	Straight, elongated linear dark reflector with no discernible height, identified during the OCP assessment of previous data. Feature is not particularly well-defined, but is similar to debris items 7005-7007 , which are located approximately 110 m to the south-west. No associated magnetic anomaly. Possible non-ferrous debris. Not identified within the 2020 geophysical data, and may be buried at present.	SSS	Tranche B 2012	Block M, L07	-
7005	Debris	450500	6092191	A2	7.3	0.9	0.0	-	Faint, poorly defined, elongated dark reflector with no discernible height, identified during the OCP assessment of previous data. In line with linear debris item 7006 , extending approximately 16 m to the north-east; possibly part of one, partially buried feature or a separate section of debris, although less distinct. No associated magnetic anomaly. Possible non-ferrous debris. Not identified within the 2020 geophysical data, and may be buried at present.	SSS	Tranche B 2012	Block M, L07	-
7007	Seabed disturbance	450484	6092162	A2	39.2	19.2	0.3	-	An irregular curvilinear seabed disturbance, located within a depression 0.9 m deep and adjacent to a slightly mounded area. Identified as more than one elongate dark reflectors during the OCP assessment of previous data, indicating possible sediment movement over time exposing more of the feature. Very similar to natural features in the area, but more isolated and defined. No associated magnetic contacts. Possible non-ferrous debris or a natural feature. Position, dimensions and classification updated to reflect 2020 geophysical data.	SSS, MBES	Tranche B 2012, Array 2020	Block M, L07	-
7136	Magnetic	450915	6092111	A2	-	-	-	42	A small, sharp magnetic dipole with peak and trough over two survey lines. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7137	Magnetic	450971	6092054	A2	-	-	-	61	A medium, sharp magnetic dipole with peak and trough on one survey line and seen on adjacent line of data. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7138	Magnetic	450995	6091863	A2	-	-	-	9	A small, broad magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7008	Seabed disturbance	451246	6091635	A2	9.0	7.0	0.0	-	Small patch of disturbed seabed comprised three slightly elongated areas of high reflectivity and some bright reflectors, identified during the OCP assessment of previous data. No associated magnetic anomaly. Possibly a natural feature, however looks anomalous and, as such, has been retained as potential archaeology as could indicate non-ferrous debris. Not identified within the 2020 geophysical data, and may be buried at present.	SSS	Tranche B 2012	Block M	-
7139	Magnetic	451718	6091486	A2	-	-	-	9	A small, broad magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7140	Magnetic	452090	6090994	A2	-	-	-	48	Small group of three magnetic anomalies, ranging from 8nT to 48nT in amplitude. No associated SSS or MBES contacts. Possibly associated with a broader, curvilinear trend, but this is uncertain. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block M	-
7141	Magnetic	452008	6090865	A2	-	-	-	74	Small alignment of three magnetic anomalies, ranging from 32 nT to 74 nT in amplitude. No associated SSS or MBES contacts. Possibly associated with a broader, curvilinear trend, but this is uncertain. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block M	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7142	Magnetic	451935	6090703	A2	-	-	-	205	Two closely spaced magnetic anomalies, ranging from 38 nT to 205 nT in amplitude. No associated SSS or MBES contacts. Possibly associated with a broader, curvilinear trend, but this is uncertain. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block M	-
7143	Magnetic	451940	6090625	A2	-	-	-	60	A medium, sharp dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possibly associated with a broader, curvilinear trend, but this is uncertain. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block M	-
7144	Magnetic	452604	6090122	A2	-	-	-	37	A small negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M, N07	-
7145	Magnetic	453165	6089522	A2	-	-	-	49	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7146	Magnetic	454486	6088559	A2	-	-	-	25	A small positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M, Q07-OCP	-
7147	Magnetic	454587	6088225	A2	-	-	-	45	A small, sharp magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M, Q07	-
7148	Magnetic	454715	6088033	A2	-	-	-	6	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block M	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7149	Magnetic	454809	6087958	A2	-	-	-	9	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7150	Magnetic	455900	6087329	A2	-	-	-	99	A medium negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7151	Magnetic	456178	6086588	A2	-	-	-	45	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block M	-
7152	Dark reflector	456597	6086140	A2	13.0	1.5	0.2	-	A narrow linear dark reflector adjacent to a narrow elongate dark reflector, either of which either cast bright shadow, or are adjacent to a depression. Located in an area of mega ripples. No associated MBES or magnetic contacts, but the approximate line of the anomaly is seen on the MBES data, although it is not continuous. Possible item of non-ferrous debris or a natural feature.	SSS	Array 2020	Block M, S07	-
70628	Debris	445328	6102018	A2	7.3	2.8	0.1	-	Area of dark reflectors with shadows, identified during previous phases of work. Located on a sandy and even area of the seabed, in proximity to an elongate, irregular depression, more distinct than the large numbers of other small depressions that exist across this area. No associated MBES or magnetic contacts were seen in the previous dataset. Previously interpreted as possible items of non-ferrous debris. Not identified within the 2020 geophysical data, and may be buried at present. Retained as a precaution.	SSS	Tranche B 2012	Block N	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7153	Magnetic	446347	6100666	A2	-	-	-	651	A very large positive monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression. Situated at a proposed WTG location and may be a result of geotechnical testing at this position, but retained as a precaution.	Mag.	Array 2020	Block N, E09, E09-C09, G09-E09	-
7154	Magnetic	446675	6100293	A2	-	-	-	18	A small positive monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, G09-E09	-
7155	Dark reflector	447097	6100157	A2	2.1	1.1	0.2	-	An elongated, distinct dark reflector which casts a small bright shadow. No associated MBES or magnetic contacts. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block N	-
7156	Mound	446864	6099882	A2	4.9	1.8	0.1	-	Very low mound, quite distinct and on a slightly different orientation from surrounding data artefacts. No associated SSS or magnetic contacts. Possible non-ferrous debris or a natural feature.	MBES	Array 2020	Block N	-
7157	Magnetic	447459	6099904	A2	-	-	-	8	A small dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-
7158	Mound	447629	6099615	A2	1.8	1.4	0.1	-	Distinct rounded mound with a low profile. Located 2.8 m northwest of 7159 , a possible linear mound and likely related. No associated SSS or magnetic contacts. Possible non-ferrous debris or a natural feature.	MBES	Array 2020	Block N	-
7159	Mound	447631	6099613	A2	3.9	1.6	0.1	-	Distinct short linear mound with a low profile. Unusual for the area. Located 2.8 m southeast of a rounded mound, 7158 and likely related. No associated SSS or magnetic contacts. Possible non-ferrous debris or a natural feature.	MBES	Array 2020	Block N	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7160	Magnetic	448288	6098756	A2	-	-	-	18	A small dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, G09, G09-E09	-
7161	Magnetic	448490	6098886	A2	-	-	-	10	A small dipole with peak and trough on one survey line. Complex with double trough. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, G09	-
7162	Magnetic	448534	6098783	A2	-	-	-	19	A small dipole with peak and trough on one survey line. Complex with double peak. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, G09	-
7163	Dark reflector	449757	6097179	A2	3.1	2.9	0.3	-	Angular dark reflector with some linear internal reflectors and near side scour. This casts a short, flat-ended shadow. Visible on the MBES data as a distinct mound, roughly rectangular in plan with an irregular and angular profile. This is located in an associated depression. No associated magnetic contacts. Possible non-ferrous debris or a natural feature.	SSS, MBES	Array 2020	Block N	-
7164	Magnetic	450945	6096429	A2	-	-	-	126	A large dipole with peak and trough over two survey lines. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-
7165	Magnetic	450952	6096221	A2	-	-	-	14	A small dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-
7166	Magnetic	450965	6096013	A2	-	-	-	100	A large dipole with peak and trough over two survey lines. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, OCP-J09	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7167	Magnetic	450975	6095746	A2	-	-	-	225	A large positive monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-
7168	Debris	451282	6095532	A2	7.6	1.0	0.3	-	Short linear dark reflector, angled in the centre which casts a short, sloped shadow. Possibly related to 7169. Visible on the MBES data as an area of disturbed seabed. No associated magnetic contacts. Possible item of non-ferrous debris.	SSS, MBES	Array 2020	Block N	-
7169	Seabed disturbance	451271	6095465	A2	7.3	3.8	0.0	-	Seabed disturbance seen as a slightly indistinct dark reflector with two projections and no discernible shadow. Some scour along long edge. Possibly related to 7168. No associated MBES or magnetic contacts, but the MBES data shows two linear depressions at this location. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block N	-
7040	Magnetic	451781	6095046	A2	-	-	-	12	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contact. Possible small piece of buried ferrous debris.	Mag.	Array 2020	Block N, OCP	-
7041	Debris	452279	6095643	A2	4.2	0.9	0.2	-	Short, linear dark reflector with small but distinct shadows at either end. Located in an area of generally featureless seabed. No associated magnetic anomaly. Possible non-ferrous debris.	SSS	Array 2020	Block N, OCP	-
7042	Magnetic	452259	6094366	A2	-	-	-	12	Small but distinct positive magnetic monopole identified on one survey line. No associated SSS or MBES contacts. Possible small piece of buried ferrous debris.	Mag.	Array 2020, OFTO 2020	Block N, OCP, J05-OCP	-
7043	Magnetic	452494	6094120	A2	-	-	-	27	Medium positive magnetic monopole identified on one survey line. No associated SSS or MBES contacts. Possible small piece of buried ferrous debris.	Mag.	Array 2020	Block N, OCP	-
7044	Magnetic	452655	6094439	A2	-	-	-	68	A medium negative magnetic monopole identified on more than one survey line. No associated SSS or MBES contacts. Possible buried ferrous debris.	Mag.	Array 2020, OFTO 2020	Block N, OCP, Q11-OCP, OCP-N09	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7045	Magnetic	452816	6094440	A2	-	-	-	8	A small positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible small piece of buried ferrous debris, or a natural feature	Mag.	Array 2020	Block N, OCP, Q11-OCP	-
7046	Magnetic	452840	6094417	A2	-	-	-	6	A small, broad magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible small piece of buried ferrous debris, or a natural feature	Mag.	Array 2020	Block N, OCP, Q11-OCP	-
7047	Seabed disturbance	452949	6094544	A2	17.7	9.9	0.2	-	Elongate area of seabed disturbance comprising numerous small dark reflectors, some with small shadows, and two distinct, parallel, linear ridges. Identified in the MBES data as an east-west trending shallow depression, with two NNW-SSE trending linear features at its eastern end. No associated magnetic anomaly. Located in an area of similar natural depressions and may be a natural feature, but the linear features may indicate possible debris.	SSS, MBES	Array 2020	Block N, OCP, OCP-N11	-
7648	Magnetic	452586	6094570	A2	-	-	-	64	Medium negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	OFTO 2020, Array 2020	Block G, Block N, OCP, OCP-J11, J13-OCP, OCP-L11	-
7170	Magnetic	452749	6093650	A2	-	-	-	16	A small negative monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, OCP	-
7171	Magnetic	454428	6092835	A2	-	-	-	43	A small dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7172	Magnetic	455795	6090980	A2	-	-	-	18	A small dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-
7173	Magnetic	457253	6089868	A2	-	-	-	12	A small dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, Q09-S09	-
7174	Magnetic	457333	6089522	A2	-	-	-	26	A small positive monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-
7175	Dark reflector	457856	6089496	A2	3.3	1.5	0.2	-	A slightly elongate, irregularly shaped dark reflector with a short, sharp shadow. The dark reflector extends beyond the area of shadow, indicating an object with varying heights or sediment build-up. Some scour present. Some slightly irregular internal reflections. Visible on the MBES data as a mound, squared in plan with an angular profile. Present in a scour 0.3 m deep. No associated magnetic contacts. Possible non-ferrous debris or a natural feature.	SSS, MBES	Array 2020	Block N	-
7176	Magnetic	457835	6089294	A2	-	-	-	47	A small positive monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, Q09-S09	-
7177	Magnetic	458330	6088853	A2	-	-	-	19	A small dipole with peak and trough over two survey lines. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N	-
7178	Magnetic	458982	6088363	A2	-	-	-	73	A medium, sharp dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	Block N, S09	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7179	Magnetic	446901	6104602	A2	-	-	-	14	Identified in the magnetometer data as a small negative monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7180	Magnetic	450117	6101136	A2	-	-	-	17	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7181	Magnetic	450747	6100373	A2	-	-	-	17	Identified in the magnetometer data as a small yet complex dipole visible over multiple survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7182	Magnetic	451310	6099951	A2	-	-	-	80	Identified in the magnetometer data as a medium, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7183	Dark reflector	451855	6099061	A2	1.7	0.4	0.1	-	Identified in the SSS data as a short, straight dark reflector, slightly indistinct, with a slight shadow. No corresponding magnetic or MBES contact. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block P	-
7184	Magnetic	452477	6098719	A2	-	-	-	109	Identified in the magnetometer data as a large magnetic monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P, J11, J11-E13	-
7185	Magnetic	452727	6098511	A2	-	-	-	143	Identified in the magnetometer data as a large positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P, J11	-
7186	Magnetic	453480	6097793	A2	-	-	-	28	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7187	Magnetic	455637	6095835	A2	-	-	-	17	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7188	Magnetic	456583	6094744	A2	-	-	-	130	Identified in the magnetometer data as a large, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P, N11	-
7189	Magnetic	456978	6094507	A2	-	-	-	31	Identified in the magnetometer data as a small magnetic monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P, N11, N11-Q13	-
7190	Magnetic	457574	6093569	A2	-	-	-	37	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7191	Magnetic	457583	6093546	A2	-	-	-	67	Identified in the magnetometer data as a medium positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7192	Magnetic	459291	6092043	A2	-	-	-	40	Identified in the magnetometer data as a small negative monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7193	Magnetic	460209	6091110	A2	-	-	-	85	Identified in the magnetometer data as a medium positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7194	Magnetic	460379	6090965	A2	-	-	-	11	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P	-
7195	Magnetic	461000	6090503	A2	-	-	-	42	Identified in the magnetometer data as a small, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris with no surface expression.	Mag.	Array 2020	Block P, S11	-
7196	Dark reflector	450389	6104945	A2	3.6	3.4	0.2	-	Identified in the SSS data as an irregular dark reflector with a slight shadow. There is some associated scour. No corresponding magnetic or MBES contact. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block Q, E13	-
7197	Magnetic	450475	6104790	A2	-	-	-	13	Small but distinct magnetic dipole, identified on overlapping data sets. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression, or a natural feature.	Mag.	Array 2020	Block Q, E13, E13-E15, J11-E13	-
7198	Magnetic	451705	6103687	A2	-	-	-	28	Identified in the magnetometer data as a small, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7199	Dark reflector	452127	6103430	A2	1.4	1.2	0.1	-	Identified in the SSS data as a sub-rounded dark reflector with a tapered shadow. It appears ring-shaped which possibly indicates a hollow anomaly. There is scour visible. No corresponding magnetic or MBES contact. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block Q	-
7200	Debris	452435	6102908	A2	2.7	0.6	0.1	-	Identified in the SSS data as a distinct curvilinear dark reflector with a bright shadow. No corresponding magnetic or MBES contact. Possible item of non-ferrous debris.	SSS	Array 2020	Block Q, G13	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7201	Magnetic	452784	6102560	A2	-	-	-	209	Identified in the magnetometer data as a large, sharp dipole with peak and trough on one survey line. It is in a noisy area but appears sharp and distinct. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q, G13-J13	-
7202	Magnetic	453589	6101955	A2	-	-	-	33	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7203	Magnetic	453483	6101959	A2	-	-	-	29	Identified in the magnetometer data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7204	Magnetic	453281	6101877	A2	-	-	-	17	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7205	Dark reflector	453488	6101717	A2	2.8	2.1	0.2	-	Identified in the SSS data as an angular dark reflector with a bright shadow. No corresponding magnetic or MBES contact. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block Q	-
7206	Magnetic	453618	6101615	A2	-	-	-	120	Identified in the magnetometer data as a large, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7207	Magnetic	453673	6101562	A2	-	-	-	12	Identified in the magnetometer data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7208	Magnetic	453918	6101441	A2	-	-	-	8	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q, G13-J13	-
7209	Debris	454739	6100581	A2	2.4	1.1	0.3	-	Identified in the SSS data as a small angular dark reflector with a slight shadow. No corresponding magnetic or MBES contact. Possible non-ferrous debris.	SSS	Array 2020	Block Q, J13	-
7210	Magnetic	455205	6100431	A2	-	-	-	15	Identified in the magnetometer data as a small negative monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7211	Magnetic	455443	6100247	A2	-	-	-	8	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7212	Seabed disturbance	456181	6099327	A2	15.2	2.8	0.1	-	Identified in the SSS data as a small curved area of short straight dark reflectors approximately 2.4 x 0.4 x 0.1 m. No corresponding magnetic or MBES contact. Possible area of partially buried debris or a natural feature.	SSS	Array 2020	Block Q	-
7213	Seabed disturbance	456082	6099273	A2	7.7	2.7	0.1	-	Identified in the SSS data as two parallel curvilinear dark reflectors with a sub-rounded object in the centre. No corresponding magnetic or MBES contact. Possible area of partially buried debris or a natural feature.	SSS	Array 2020	Block Q	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7214	Magnetic	456229	6099174	A2	-	-	-	21	Identified in the magnetometer data as a small, broad dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7215	Magnetic	456834	6098285	A2	-	-	-	11	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7216	Magnetic	456921	6098441	A2	-	-	-	20	Identified in the magnetometer data as a small dipole, with a complex double peak, identified on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7217	Magnetic	457492	6097623	A2	-	-	-	7	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7218	Magnetic	457719	6097641	A2	-	-	-	35	Identified in the magnetometer data as a small dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7219	Magnetic	458279	6097136	A2	-	-	-	6	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7220	Magnetic	458620	6097027	A2	-	-	-	17	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7221	Magnetic	461293	6094087	A2	-	-	-	14	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q, Q13-S13	-
7222	Magnetic	462036	6093045	A2	-	-	-	11	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q	-
7223	Magnetic	462758	6092557	A2	-	-	-	17	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag	Array 2020	Block Q, S13, Q13-S13	-
7224	Magnetic	451814	6107818	A2	-	-	-	6	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7225	Magnetic	451691	6107623	A2	-	-	-	11	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7226	Magnetic	451895	6107515	A2	-	-	-	14	Identified in the magnetometer data as a small, broad dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, E15-D15	-
7227	Magnetic	452049	6107349	A2	-	-	-	17	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. Complex with double peak. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, E15-D15	-
7228	Magnetic	452124	6107008	A2	-	-	-	28	Identified in the magnetometer data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7229	Magnetic	452948	6106805	A2	-	-	-	9	Identified in the magnetometer data as a small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7230	Debris	453799	6105801	A2	2.6	1.7	0.2	-	Identified in the SSS data as a small, angular dark reflector with a short shadow. Slightly irregular, and may be two adjacent objects. There is a small area of scour visible. Observed in MBES data as a distinct angular mound within associated scour. No corresponding magnetic anomaly. Possible non-ferrous debris.	SSS, MBES	Array 2020	Block R, F15	-
7231	Magnetic	453746	6105739	A2	-	-	-	8	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, F15, G15-F15	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7232	Magnetic	453911	6105363	A2	-	-	-	6	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7233	Magnetic	454647	6105143	A2	-	-	-	16	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, G15	-
7234	Debris	454631	6104524	A2	3.5	3.2	0.4	-	Identified in the SSS as a distinct sub-rounded dark reflector with a short tapered shadow. It is poorly defined which could indicate it is partially broken up. It is visible in the MBES data as an irregular mound within a sloped area of scour. There is no corresponding magnetic anomaly. Possible item or items of non-ferrous debris.	SSS, MBES	Array 2020	Block R, G15	-
7235	Magnetic	454936	6104560	A2	-	-	-	14	Identified in the magnetometer data as a small, broad dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, G15, H15-G15	-
7236	Magnetic	455648	6104097	A2	-	-	-	11	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, H15	-
7237	Debris	456442	6103116	A2	2.3	1.6	0.4	112	Identified in the SSS data as a slightly curved dark reflector with a short rounded shadow. It is visible in the MBES data as a distinct angular mound within defined scour. In the magnetometer data it is visible as a large, sharp dipole over multiple survey lines. Possible ferrous debris.	SSS, MBES, Mag.	Array 2020	Block R	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7238	Magnetic	456522	6102643	A2	-	-	-	40	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, J15	-
70639	Debris	457356	6102050	A2	3.4	1.6	0.4	-	Medium sized piece of possible debris identified during the Tranche B data assessment. The feature is reported as being a dark reflector with strong shadow, located on the edge of a rocky/gravelly outcrop, and interpreted as being an item of debris. Not identified in the 2020 geophysical data, and may be buried at present. The feature has been retained based on its original description and interpretation.	SSS	Tranche B 2012	Block R	-
7239	Magnetic	457675	6102130	A2	-	-	-	48	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. Located in the SSS and MBES data at the edge of an area of exposed bedrock but no distinct anomaly visible. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7240	Magnetic	457926	6101642	A2	-	-	-	24	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7241	Magnetic	458273	6100904	A2	-	-	-	13	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7242	Dark reflector	459584	6099713	A2	3.0	0.7	0.1	-	Distinct, short curvilinear dark reflector with small shadow. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block R, M15	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7243	Magnetic	460447	6099327	A2	-	-	-	9	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7244	Magnetic	460720	6098771	A2	-	-	-	91	Identified in the magnetometer data as a medium, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, N15	-
7245	Magnetic	460739	6098799	A2	-	-	-	20	Identified in the magnetometer data as a small negative monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, N15	-
7246	Magnetic	460953	6098860	A2	-	-	-	151	Identified in the magnetometer data as a large dipole with peak and trough on two survey lines, identified on a number of lines and may represent a short, linear feature. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, N15	-
7247	Magnetic	461455	6098041	A2	-	-	-	10	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, P15-N15	-
7248	Magnetic	461511	6097984	A2	-	-	-	20	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, P15-N15	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7249	Magnetic	461632	6098002	A2	-	-	-	56	Identified in the Mag. Data as a medium positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7250	Magnetic	461568	6097892	A2	-	-	-	36	A small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, P15-N15	-
7251	Magnetic	461572	6097816	A2	-	-	-	41	A small positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7252	Debris	462377	6096916	A2	1.5	0.4	0.0	-	Identified in the SSS data as a short, straight, linear dark reflector with a very short shadow. There is some minor scour visible. No corresponding Mag. or MBES contact. Possible non-ferrous debris.	SSS	Array 2020	Block R	-
7253	Magnetic	462924	6096790	A2	-	-	-	10	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, Q15	-
7254	Magnetic	464795	6094714	A2	-	-	-	7	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, S15, S15-R15	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7255	Seabed disturbance	464910	6094397	A2	10.8	6.7	0.1	-	Identified in the SSS data as an irregular shaped seabed disturbance with some irregular internal reflectors indicating multiple possible anomalies. A distinct linear anomaly measuring 10.8 x 6.1 m is visible along the centre of the disturbance. There is no clear shadow, but scour is visible and may be related to 7256 . The feature is visible in the MBES data as a rounded depression measuring 6.0 x 4.5 x -0.4 m, with an irregular mound the southern end indicating a possible secondary feature measuring 2.2 x 0.8 x 0.1 m. Possibly related to 7256 and 7257 . No corresponding magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block R, S15	-
7256	Dark reflector	464926	6094399	A2	3.4	0.7	0.2	-	Identified in the SSS data as a square dark reflector with no clear shadow. It is located within the scour of a larger feature that has been classified as natural. Possibly related to 7255 and 7257 . No corresponding MBES or Mag. Contact. Possibly non-ferrous debris or natural feature.	SSS	Array 2020	Block R, S15	-
7257	Debris	464902	6094372	A2	4.2	1.3	0.2	-	Identified on the SSS data as a straight, elongate dark reflector with a short tapered shadow. Feature is at the end of a circular depression which has been interpreted as being natural. Observed in the MBES data as a distinct linear mound and measuring 3.1 x 1.1 x 0.1 m. Possibly related to 7255 and 7256 . No corresponding magnetic anomaly. Possible non-ferrous item of debris.	SSS	Array 2020	Block R, S15	-
7258	Dark reflector	464871	6094395	A2	4.6	0.8	0.0	-	Identified in the SSS data as a linear dark reflector with a small irregular shadow. No corresponding MBES or magnetic anomaly. Possible non-ferrous debris or natural feature.	SSS	Array 2020	Block R, S15	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7259	Debris	465129	6094375	A2	2.0	1.9	0.0	-	Identified in the SSS data as a small circular dark reflector with a smaller internal circular feature, possibly hollow. Adjacent to a short, angled dark reflector. No clear shadow but some scour. Within an area of mobile sediment and outcrop/reef and possibly associated. No corresponding Mag. or MBES contact. Identified in an area of mobile sediments with possible outcropping geology and therefore has the potential to be a natural feature; however, retained based on anomalous form.	SSS	Array 2020	Block R, S15, T15-S15	-
7260	Magnetic	465742	6093773	A2	-	-	-	22	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7261	Magnetic	465664	6093589	A2	-	-	-	25	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R	-
7262	Magnetic	466016	6093590	A2	-	-	-	19	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, T15, T15-S15	-
7263	Magnetic	465917	6093537	A2	-	-	-	26	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, T15	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7264	Magnetic	466027	6093512	A2	-	-	-	30	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, T15, T15-S15, U15-T15	-
7265	Magnetic	465993	6093546	A2	-	-	-	77	Identified in the magnetometer data as a medium, sharp dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, T15, T15-S15	-
7266	Debris field	465989	6093527	A1	19.0	13.5	0.3	154	Identified in the SSS data as an area of distinct linear and angular dark reflectors in random orientations. These are irregular and have flat-topped shadows. This is located beside some mobile sediment. It is visible in the MBES data as an indistinct rounded mound at a general depth of -30.1 m, with a secondary mound to the immediate south-east and possibly related. There is a corresponding large complex magnetic anomaly. A distinct debris field, at least partially comprising ferrous debris.	SSS, MBES, Mag.	Array 2020	Block R, T15, T15-S15, U15-T15	-
7267	Magnetic	466027	6093512	A2	-	-	-	30	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, T15, T15-S15, U15-T15	-
7268	Magnetic	466111	6093495	A2	-	-	-	267	Identified in the magnetometer data as a large positive monopole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block R, T15, U15-T15	-
7269	Dark reflector	434967	6097947	A2	2.1	2.1	0.2	-	Angular dark reflector with small shadow, situated within a small scour or depression. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block S	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7270	Magnetic	435103	6097824	A2	-	-	-	17	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7271	Magnetic	435102	6098002	A2	-	-	-	9	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7272	Magnetic	436229	6098609	A2	-	-	-	39	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located close to similar anomaly 7273 and may be related.	Mag.	Array 2020	Block S, A03	-
7273	Magnetic	436278	6098607	A2	-	-	-	32	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located close to similar anomaly 7272 and may be related.	Mag.	Array 2020	Block S, A03	-
7274	Magnetic	436565	6099012	A2	-	-	-	16	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7275	Magnetic	436663	6099292	A2	-	-	-	12	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S, A04-A03	-
7276	Magnetic	436751	6099246	A2	-	-	-	17	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7277	Magnetic	436848	6099173	A2	-	-	-	18	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7278	Magnetic	436724	6099656	A2	-	-	-	76	Distinct medium magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block S, A04	-
7279	Magnetic	436764	6099695	A2	-	-	-	27	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S, A04	-
7280	Dark reflector	437911	6100235	A2	3.3	1.7	0.3	-	Poorly defined, irregular dark reflector with small shadow, located in an area of sand ripples. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block S	-
7281	Magnetic	440030	6102726	A2	-	-	-	32	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S, A07, A07-A06	-
7282	Dark reflector	440986	6103448	A2	4.4	0.7	0.1	-	Elongate dark reflector with small shadow, but without an associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block S	-
7283	Magnetic	441423	6104379	A2	-	-	-	23	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7284	Magnetic	443567	6106095	A2	-	-	-	37	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression. Located close to anomaly 7285 and may be related.	Mag.	Array 2020	Block S	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7285	Magnetic	443596	6106097	A2	-	-	-	63	Medium magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression. Located close to anomaly 7284 and may be related.	Mag.	Array 2020	Block S	-
7286	Magnetic	443940	6106476	A2	-	-	-	18	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression. Located close to anomaly 7287 and may be related.	Mag.	Array 2020	Block S	-
7287	Magnetic	443957	6106454	A2	-	-	-	15	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression. Located close to anomaly 7286 and may be related.	Mag.	Array 2020	Block S	-
7288	Magnetic	444055	6106593	A2	-	-	-	14	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7289	Magnetic	444757	6107108	A2	-	-	-	24	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7290	Magnetic	444935	6107865	A2	-	-	-	15	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7291	Magnetic	445273	6107943	A2	-	-	-	18	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S, A12, A13-A11	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7292	Magnetic	448778	6109036	A2	-	-	-	13	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7293	Magnetic	449190	6109212	A2	-	-	-	31	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7294	Seabed disturbance	449647	6109069	A2	3.4	2.1	0.1	-	Small area containing numerous small dark reflectors with small shadows, located in an area of featureless seabed. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block S	-
7295	Magnetic	450221	6109167	A2	-	-	-	43	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S	-
7296	Magnetic	450559	6108949	A2	-	-	-	38	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is buried or without surface expression.	Mag.	Array 2020	Block S, C15, D15-C15	-
7297	Seabed disturbance	452044	6078995	A2	5.1	1.9	0.4	-	Elongate group of three dark reflectors, the largest measuring 1.7 x 1.4 m. Height of the smaller objects is disrupted by the larger object. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block T, T01-U02	-
7298	Magnetic	452746	6078969	A2	-	-	-	13	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, T01-U02	-
7299	Magnetic	452811	6079012	A2	-	-	-	8	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, T01-U02	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7300	Magnetic	452902	6079046	A2	-	-	-	22	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7301	Magnetic	453060	6079049	A2	-	-	-	9	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7302	Magnetic	453084	6079132	A2	-	-	-	28	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7303	Seabed disturbance	453350	6079115	A2	1.8	0.9	0.1	-	Elongate group of dark reflectors with shadows, but without an associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block T, U02	-
7304	Magnetic	453867	6079050	A2	-	-	-	41	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7305	Magnetic	455016	6080174	A2	-	-	-	9	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7306	Magnetic	456059	6081321	A2	-	-	-	20	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, U04-U05	-
7307	Magnetic	457196	6082765	A2	-	-	-	26	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7308	Magnetic	457191	6082607	A2	-	-	-	14	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7309	Magnetic	458112	6083069	A2	-	-	-	33	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, U06	-
7310	Magnetic	459242	6084589	A2	-	-	-	21	Small but distinct positive magnetic monopole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7311	Magnetic	459345	6084692	A2	-	-	-	18	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located close to anomaly 7312 and possibly associated.	Mag.	Array 2020	Block T	-
7312	Magnetic	459362	6084701	A2	-	-	-	9	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located close to anomaly 7311 and possibly associated.	Mag.	Array 2020	Block T	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
70636	Wreck	459221	6084897	A1	15.1	3.6	0.9	149	Distinct, elongate mound identified within the SSS and MBES data, both during previous assessments and within the most recent data. The mound is situated in a depression, with a localised area of sand ripples immediately to the east, and trends approximately NE-SW. No features are visible on the surface of the mound. The feature was not covered by the most recent Mag. data, but previous assessments have shown a large negative magnetic monopole at the location, indicating ferrous content. Possible small wreck, such as a small fishing vessel, which is likely upturned, or it could be a mound of cargo or ballast. Located outside the study area, but retained as any AEZ will encroach upon the area. Position and dimensions updated to reflect more recent data.	SSS, Mag., MBES	Tranche B 2012, Array 2020	Block T	-
7313	Debris	459229	6084899	A1	5.3	0.3	0.1	-	Short, straight, linear dark reflector with small shadow, located within an area of sand ripples approximately 9 m east of possible wreck 70636. Position not covered by most recent Mag. Data. Possible debris associated with 70636. Located outside the study area, but any associated AEZ may encroach upon the area.	SSS	Array 2020	Block T	-
7314	Magnetic	460126	6085477	A2	-	-	-	20	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, U08-U09	-
7315	Magnetic	460590	6085946	A2	-	-	-	215	Large, distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible significant ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7316	Magnetic	461123	6086479	A2	-	-	-	127	Large, distinct positive magnetic monopole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible significant ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, U09-U10	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7317	Magnetic	461585	6086555	A2	-	-	-	103	Large, distinct positive magnetic monopole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible significant ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7318	Magnetic	462242	6087432	A2	-	-	-	43	Small but distinct negative magnetic monopole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7319	Dark reflector	462764	6087993	A2	1.7	0.8	0.2	-	Distinct, elongate, irregular dark reflector with small but distinct shadow. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block T, U10-U11	-
7320	Dark reflector	463137	6088172	A2	2.2	0.5	0.1	-	Small, elongate dark reflector, possibly two short linear dark reflectors immediately adjacent to each other, with small shadow. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	Block T, U11	-
7321	Magnetic	463207	6088569	A2	-	-	-	15	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, U11-U12	-
7322	Magnetic	463530	6089127	A2	-	-	-	69	Medium, distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7323	Magnetic	463666	6089299	A2	-	-	-	106	Large, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T, U12	-
7324	Dark reflector	466149	6091229	A2	9.4	0.3	0.0	-	Short, curvilinear dark reflector without shadow or associated magnetic anomaly. Possible non-ferrous debris or a seabed scar.	SSS	Array 2020	Block T, U14	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7325	Magnetic	466930	6091931	A2	-	-	-	7	Small but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Block T	-
7326	Magnetic	440856	6096030	A2	-	-	-	116	Large, positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	C01-E05	-
7327	Magnetic	443624	6093795	A2	-	-	-	14	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	G05-G03	-
7328	Magnetic	445748	6091750	A2	-	-	-	7	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	J01-J06	-
7329	Magnetic	449568	6087406	A2	-	-	-	7	Small, complex, but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Possibly part of a faint linear alignment, but this is unclear.	Mag.	Array 2020	N03-N05	-
7330	Magnetic	449570	6087367	A2	-	-	-	9	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Possibly part of a faint linear alignment, but this is unclear.	Mag.	Array 2020	N03-N05	-
7331	Dark reflector	449992	6081320	A2	2.2	0.8	0.3	-	Small but distinct, elongate dark reflector with shadow, but without an associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	S01-N03	-
7332	Magnetic	449595	6082513	A2	-	-	-	43	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	S01-N03	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7333	Magnetic	449453	6082950	A2	-	-	-	394	Large, negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	S01-N03	-
7334	Magnetic	449202	6083746	A2	-	-	-	153	Large, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	S01-N03	-
7335	Magnetic	439823	6098895	A2	-	-	-	23	Small but distinct magnetic dipole with peak and trough over two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	C05- A05	-
7336	Seabed disturbance	440718	6098345	A2	12.2	3.9	0.0	-	Small area of seabed disturbance within an area of mobile sand ripples, comprising numerous short, linear bright reflectors. Appears to disrupt the sand ripple area. No associated magnetic anomaly. Possible non-ferrous debris, but could be natural. Retained as a precaution.	SSS	Array 2020	G07-C05	-
7337	Magnetic	442393	6097840	A2	-	-	-	15	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	G07-C05	-
7338	Magnetic	445042	6096988	A2	-	-	-	78	Distinct, medium positive magnetic monopole with peak and trough on one line. No associated SSS or MBES contacts. Irregular anomaly, but possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	G07-C05	-
7339	Magnetic	445301	6095932	A2	-	-	-	12	Small but distinct positive magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located close to anomaly 7340 and may be related.	Mag.	Array 2020	E05-OCP	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7340	Magnetic	445284	6095901	A2	-	-	-	10	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located close to anomaly 7339 and may be related.	Mag.	Array 2020	E05-OCP	-
7341	Magnetic	446491	6095698	A2	-	-	-	17	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located adjacent to anomaly 7342 and may be related.	Mag.	Array 2020	E05-OCP	-
7342	Magnetic	446478	6095701	A2	-	-	-	9	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located adjacent to anomaly 7341 and may be related.	Mag.	Array 2020	E05-OCP	-
7343	Dark reflector	446666	6095657	A2	1.8	0.9	0.4	-	Elongate dark reflector with shadow, possibly a number of small anomalies in an alignment. Identified in the MBES data as a short, linear mound within a scour. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS, MBES	Array 2020	E05-OCP	-
7344	Dark reflector	447615	6094503	A2	0.6	1.3	0.1	-	Small, rounded dark reflector with small shadow, possible with central depression. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	J07-G05	-
7345	Bright reflector	452515	6086663	A2	12.3	0.5	0.0	-	A short, linear bright reflector without associated magnetic anomaly. Located in an area of seabed disturbance measuring 41.7 x 20.3 m, which may obscure further related features. Possible non-ferrous debris, or a seabed scar.	SSS	Array 2020	N07-Q05	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7346	Dark reflector	452555	6087158	A2	2.3	1.8	0.3	-	Distinct, angular dark reflector with distinct shadow, but without an associated magnetic anomaly. Identified within the MBES data as a small mound within a depression. Possible non-ferrous debris or a natural feature.	SSS, MBES	Array 2020	N01-Q05	-
7347	Magnetic	445088	6098153	A2	-	-	-	50	Distinct, medium positive magnetic monopole with peak and trough on one line. No associated SSS or MBES contacts. Located close to an area of natural background magnetic anomalies, but appears distinct. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	E07-OCP	-
7348	Magnetic	447022	6097245	A2	-	-	-	70	Distinct, medium magnetic dipole with peak and trough on one line. No associated SSS or MBES contacts. Located close to an area of natural background magnetic anomalies, but appears distinct. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	E07-OCP	-
7349	Magnetic	447157	6097140	A2	-	-	-	8	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression, or could be a natural feature.	Mag.	Array 2020	E07-OCP	-
7350	Dark reflector	448066	6096699	A2	1.6	1.0	0.4	-	Sub-angular dark reflector which casts a bright, straight-sided shadow with an abruptly tapered end. No associated MBES or Mag. contacts, but a small mound and depression seen on the MBES data. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	E07-OCP	-
7351	Magnetic	449611	6095963	A2	-	-	-	6	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression, or could be a natural feature.	Mag.	Array 2020	E07-OCP	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7352	Debris	450508	6095522	A2	0.7	0.2	0.1	161	Two short, parallel dark reflectors with a separating bright reflector, possible object with a central depression. Poorly defined, but associated with a large positive magnetic monopole. Possible partially buried ferrous debris.	SSS, Mag.	Array 2020	E07-OCP	-
7353	Magnetic	450531	6095467	A2	-	-	-	50	Distinct, medium negative magnetic monopole with peak and trough on one line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Located approximately 60 m SSE of ferrous debris 7209 .	Mag.	Array 2020	E07-OCP	-
7354	Magnetic	449349	6095539	A2	-	-	-	17	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	OCP-G07	-
7355	Magnetic	450476	6095193	A2	-	-	-	18	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	OCP-G07	-
7356	Dark reflector	450852	6095018	A2	0.7	0.6	0.1	-	Small but distinct sub-rounded dark reflector with small shadow, but without an associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	OCP-G07	-
7357	Magnetic	448002	6095345	A2	-	-	-	27	Small, complex, but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	E05-OCP	-
7358	Magnetic	449809	6094995	A2	-	-	-	8	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	E05-OCP	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7029	Bright reflector	450717	6094837	A2	5.6	0.8	0.0	-	A sinuous linear bright reflector identified during previous phases of work, with a very indistinct dark reflector along the south-east edge in an area of clear seabed. A depression is visible in this location in the MBES data. Possibly a natural feature, although appears anomalous and, as such, has been retained as potential archaeology. Not identified within the most recent geophysical data, and may be buried at present.	SSS	Tranche B 2012	E05-OCP	-
7030	Dark reflector	450747	6094876	A2	3.9	1.8	0.0	-	An indistinct rounded dark reflector identified during previous phases of work, with a small bright reflector, possibly scour, along the north-west edge in an area of clear seabed. A depression was previously visible in this location in the MBES data. Possibly a natural feature, although appears anomalous and, as such, has been retained as potential archaeology. Not identified within the most recent geophysical data, and may be buried at present.	SSS	Tranche B 2012	E05-OCP	-
7359	Dark reflector	450434	6094506	A2	1.8	1.1	0.5	-	Distinct, angular dark reflector with distinct shadow, but without an associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	OCP-J07	-
7360	Magnetic	450569	6094487	A2	-	-	-	11	Small but distinct negative magnetic monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. In an area of other, interpreted natural anomalies, but is more distinct than the surrounding features.	Mag.	Array 2020	OCP-J07	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7003	Debris	450757	6092691	A2	7.6	0.3	0.1	-	A short, faint, curvilinear dark reflector with very slight height, identified within older survey data. No associated magnetic anomaly, although the feature was identified between magnetometer lines and, as such, it was not possible to discern whether the feature comprises ferrous material in the original data. Not identified within the most recent geophysical survey data, and may be buried at present. Not particularly distinct, however may be a linear item of non-ferrous debris.	SSS	Tranche B 2012	OCP-L07	-
7361	Magnetic	451136	6093023	A2	-	-	-	31	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	OCP-L07	-
7362	Magnetic	452593	6092515	A2	-	-	-	40	Small, complex, but distinct magnetic dipole with peak and trough on two survey lines. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Complex nature of anomaly suggests possible multiple objects.	Mag.	Array 2020	OCP-N07	-
7363	Magnetic	457057	6085921	A2	-	-	-	25	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	U07-S07	-
7364	Magnetic	457221	6085655	A2	-	-	-	16	A small magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	U07-S07	-
7365	Debris	457909	6084963	A2	1.8	1.7	0.0	-	Angular dark reflector which does not appear to cast a shadow, but may be hollow. No associated MBES or Mag. contacts, but a small possible mound in a depression is seen on the MBES data. Possible item of non-ferrous debris.	SSS	Array 2020	U07-S07	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7366	Magnetic	443730	6104407	A2	-	-	-	229	A large positive monopole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	C09-A10	-
7367	Magnetic	451566	6097554	A2	-	-	-	61	Distinct, medium negative magnetic monopole with peak and trough on one line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	G11-OCP	-
7368	Magnetic	455288	6094520	A2	-	-	-	23	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	OCP-N11	-
7369	Magnetic	455804	6093406	A2	-	-	-	10	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	Q11-OCP	-
7370	Magnetic	459386	6086404	A2	-	-	-	13	A small dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris, either buried or without surface expression.	Mag.	Array 2020	S09-U08	-
7371	Magnetic	444709	6106444	A2	-	-	-	8	Identified in the magnetometer data as a small, broad dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	A11-C11	-
7372	Magnetic	445054	6106162	A2	-	-	-	15	Identified in the magnetometer data as a small, sharp dipole with peak and trough over two survey lines. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	A11-C11	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7373	Magnetic	445308	6105868	A2	-	-	-	14	Identified in the magnetometer data as a small, negative monopole with peak and trough on one survey line. Possibly weakly observed as small, broad peak on parallel line approx. 5 m away; however, its form appears less convincing on the adjacent line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	A11-C11	-
7374	Magnetic	445800	6105402	A2	-	-	-	15	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	A11-C11	-
7375	Magnetic	451918	6100524	A2	-	-	-	6	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression, or could be a natural feature.	Mag.	Array 2020	J11-E13	-
7376	Dark reflector	456472	6098422	A2	1.2	0.3	0.1	-	Thin slight curvilinear dark reflector with wide but small and slightly tapering shadow. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	L11-L13	-
7377	Magnetic	455907	6097879	A2	-	-	-	21	Small, complex, but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression. Complex nature of anomaly suggests possible multiple objects.	Mag.	Array 2020	L11-L13	-
7378	Magnetic	457040	6094532	A2	-	-	-	21	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	N11-Q13	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7379	Magnetic	464598	6090403	A2	-	-	-	180	Large, distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	U13-S11	-
7380	Magnetic	451483	6105780	A2	-	-	-	5	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression, or could be a natural feature.	Mag.	Array 2020	E13-E15	-
7381	Dark reflector	457905	6099021	A2	1.9	0.3	0.2	-	Short, straight dark reflector with slightly rounded bright shadow. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	L13-M15	-
7382	Dark reflector	459392	6097179	A2	2.0	0.5	0.0	-	Short, straight dark reflector without shadow, located within a small depression. No associated magnetic anomaly. Possible non-ferrous debris or a natural feature.	SSS	Array 2020	N15-N13	-
7383	Magnetic	460052	6097934	A2	-	-	-	5	Small but distinct magnetic dipole with peak and trough on one survey line. No associated SSS or MBES contacts. Possible ferrous debris that is either buried or without surface expression, or could be a natural feature.	Mag.	Array 2020	N15-N13	-
7384	Debris	451234	6108202	A2	1.4	0.8	0.2	23	Visible in the SSS data as a distinct rounded dark reflector with a short pointed shadow. It was observed in the MBES data as a rounded depression measuring 3.6 x 2.8 x -0.3 m with a possible small mound in the centre but this was not clear. There is possible scour extending 6.0 m to the south-east. Identified in the magnetometer data as a small positive monopole with peak and trough on one survey line. Possible ferrous debris.	MBES, Mag.	Array 2020	D15-C15	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic amplitude (nT)	Description	Anomaly type	Dataset	Section	External references
7385	Magnetic	466416	6093177	A2	-	-	-	19	Identified in the magnetometer data as a small dipole with peak and trough on one survey line. No corresponding SSS or MBES contacts. May represent possible ferrous debris that is either buried or without surface expression.	Mag.	Array 2020	U15-T15	-

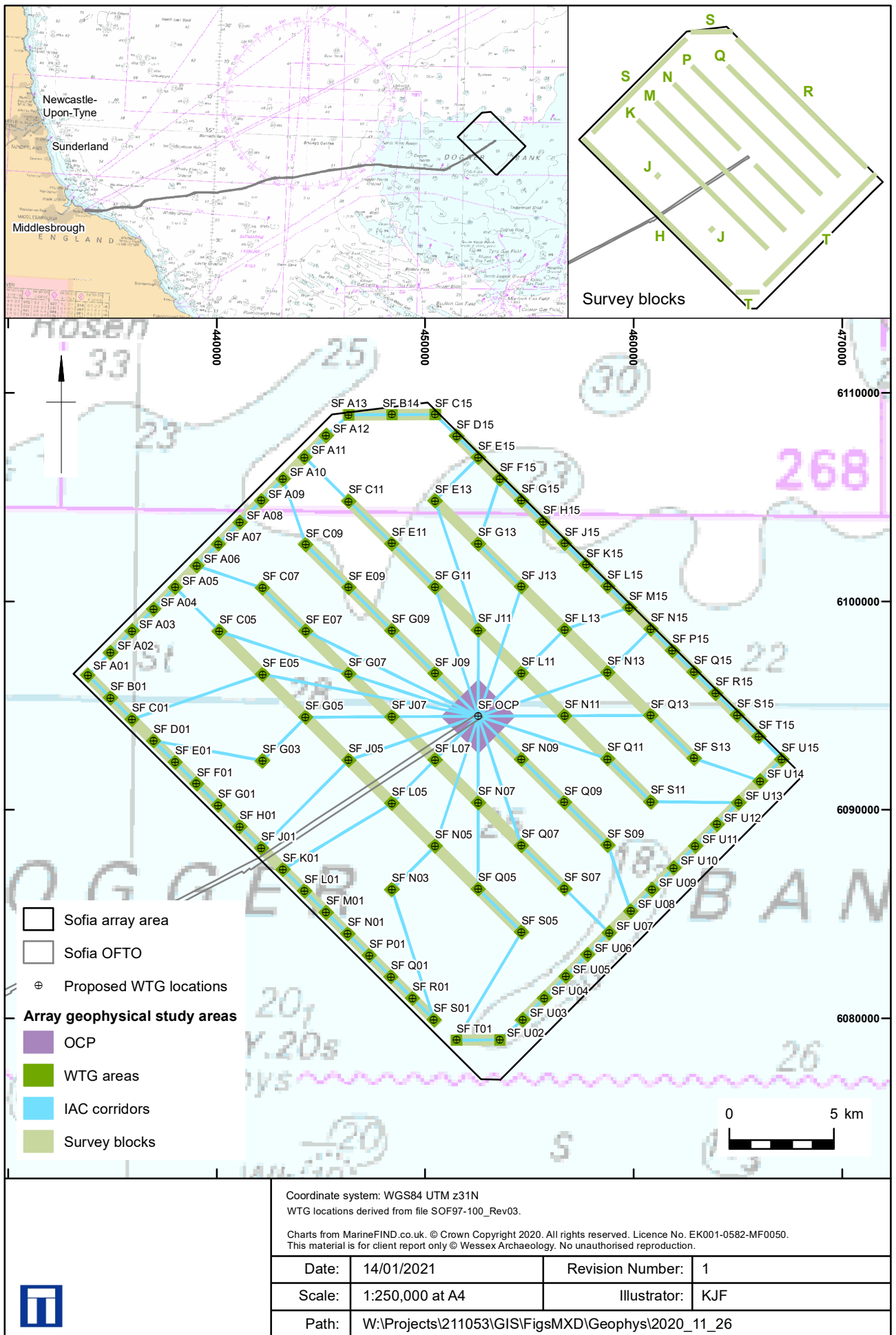
Notes

1. Co-ordinates are in WGS84 UTM31N
2. Positional accuracy estimated ± 5 m

APPENDIX D. MARITIME RECORDED LOSSES

D.1 Recorded losses located within the study area

Reference	Name	Date of Loss	Description
UKHO_4947	U66	02/10/1917	German submarine U66, sunk by gunfire from British Destroyer in 1917.
UKHO_4948	<i>William and John</i>	Unknown	Vessel left Harwich, presumably en route to Norway as the ship in company was Norway bound. After being at sea a few days the vessel sprang a leak and shortly after sank. Vessel in company picked up the survivors but was herself wrecked on the coast of Norway. Amended to dead by the UKHO in 2001.
UKHO_4829	Unknown	Unknown	Recorded position of a dangerous wreck. Wreck deleted in 1927.
UKHO_4949	Unknown	Unknown	Reported as a possible aircraft in 1969.



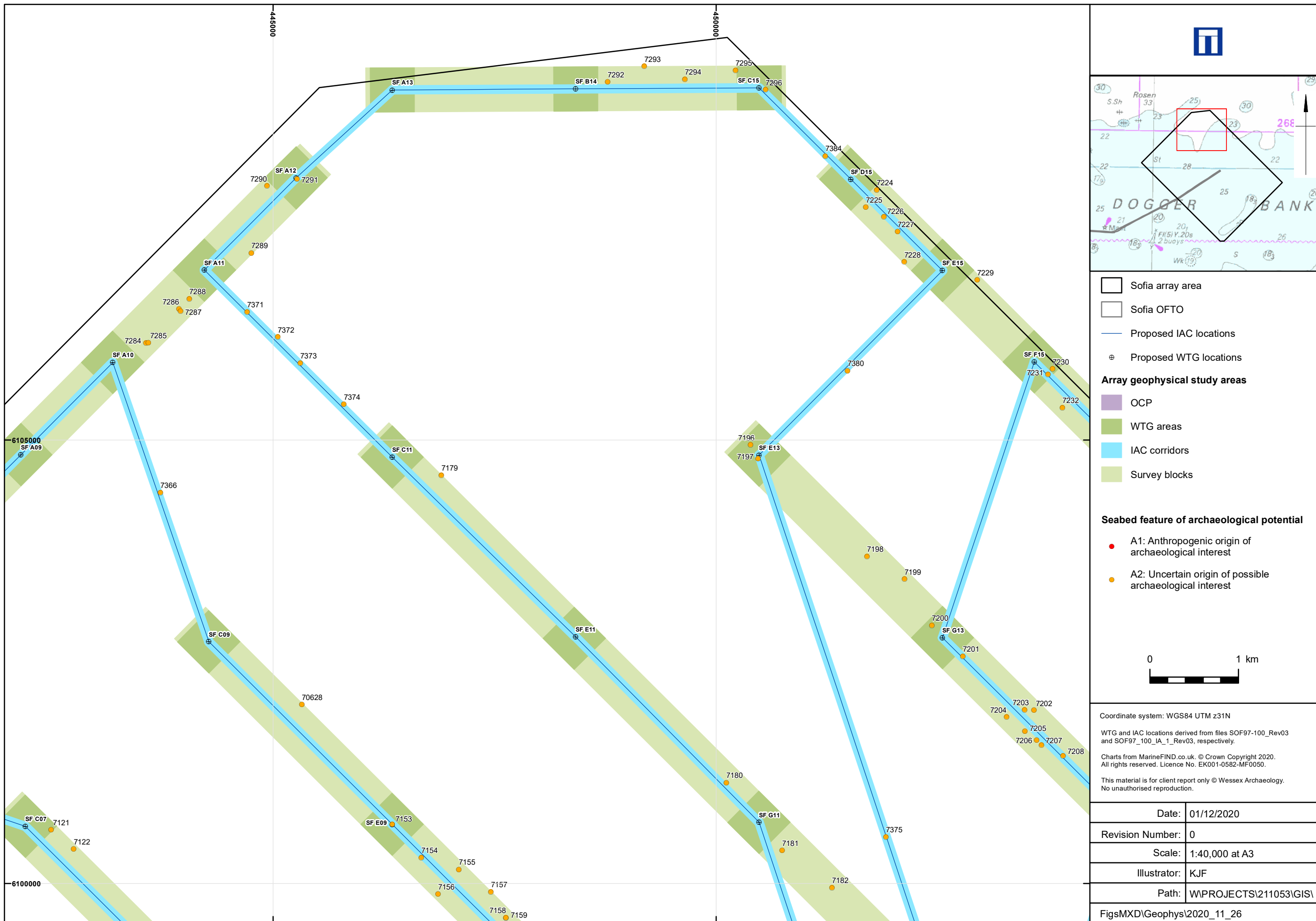
Study area location

Figure 1



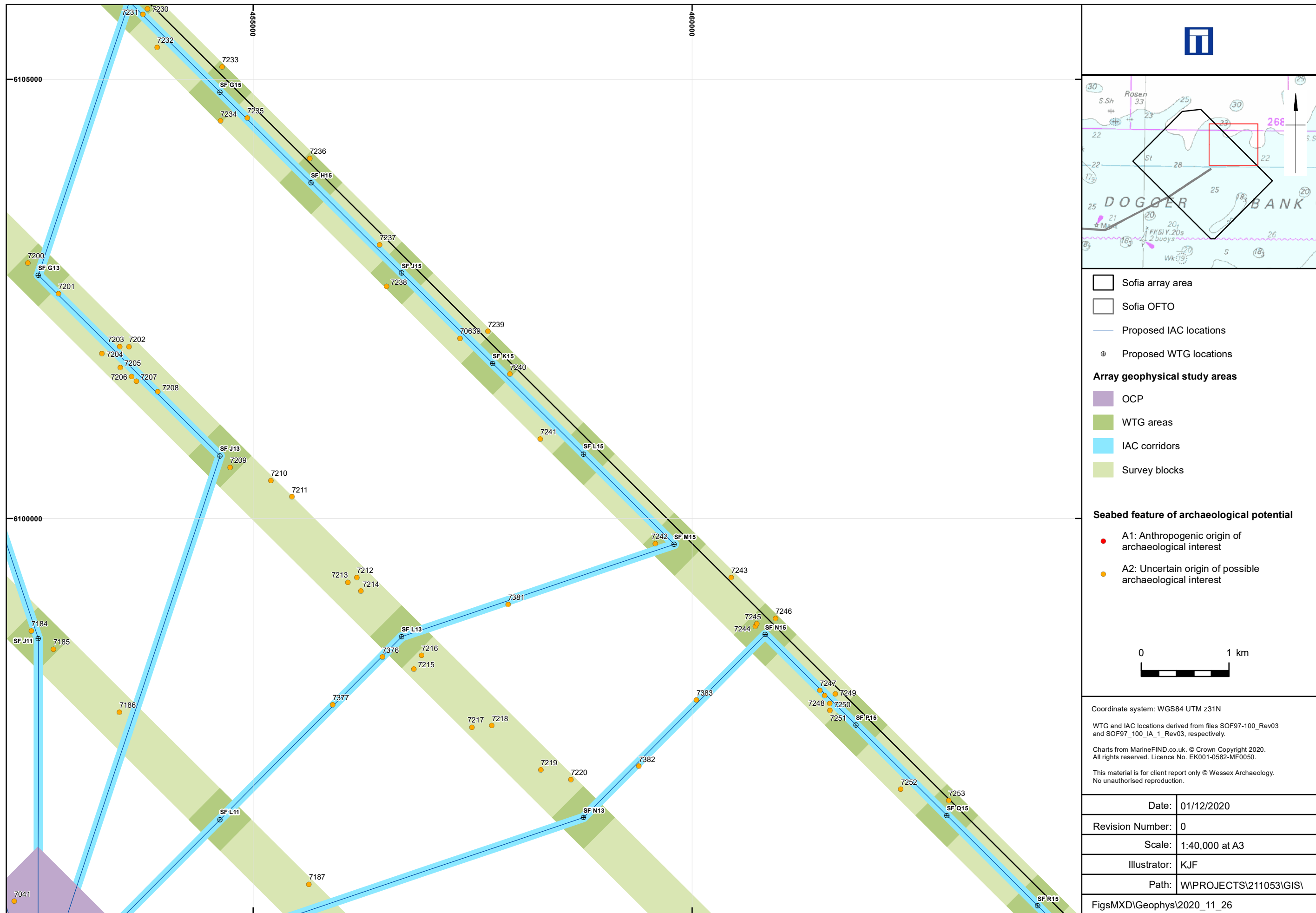
Seabed features of archaeological potential

Figure 2a



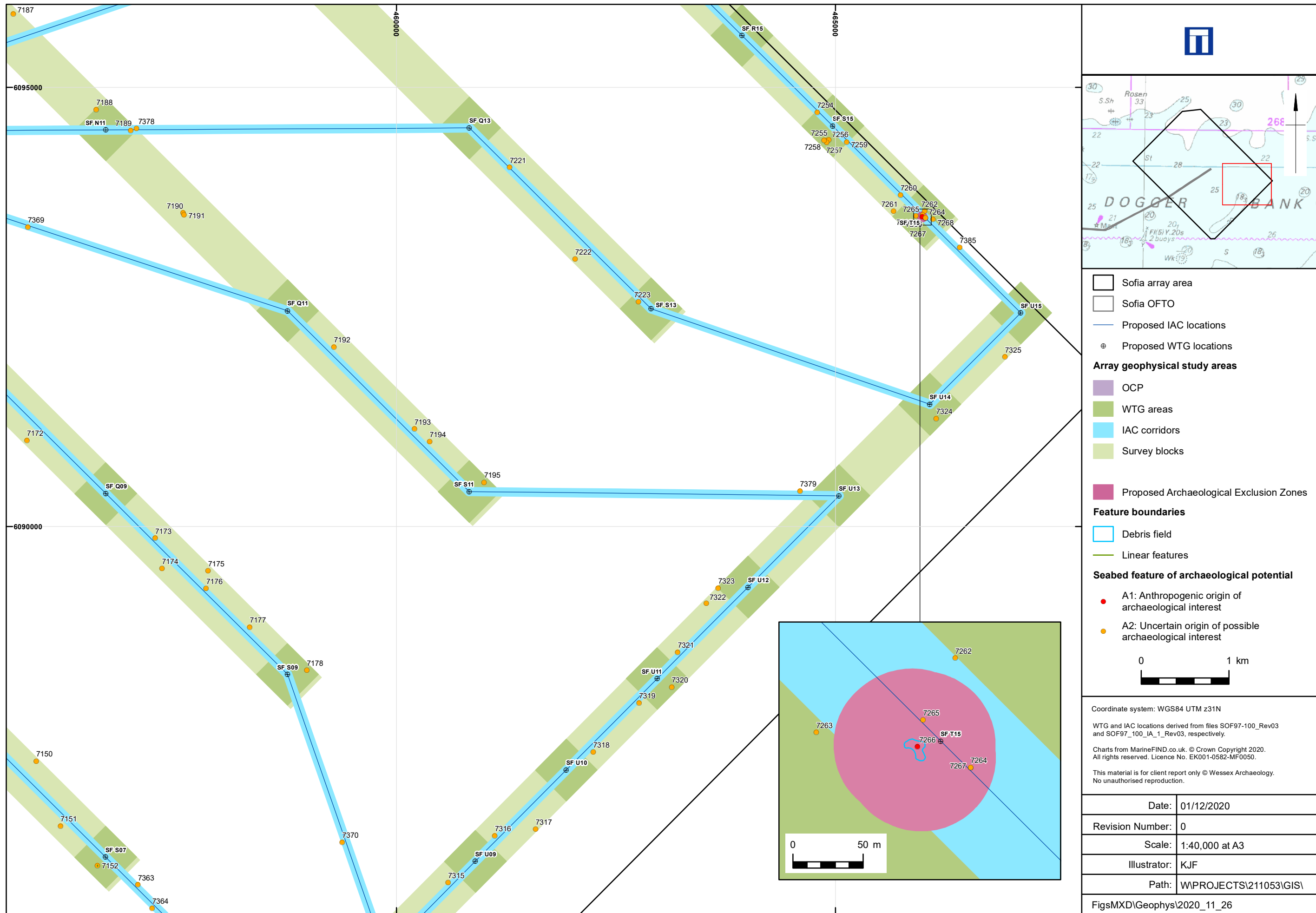
Seabed features of archaeological potential

Figure 2b



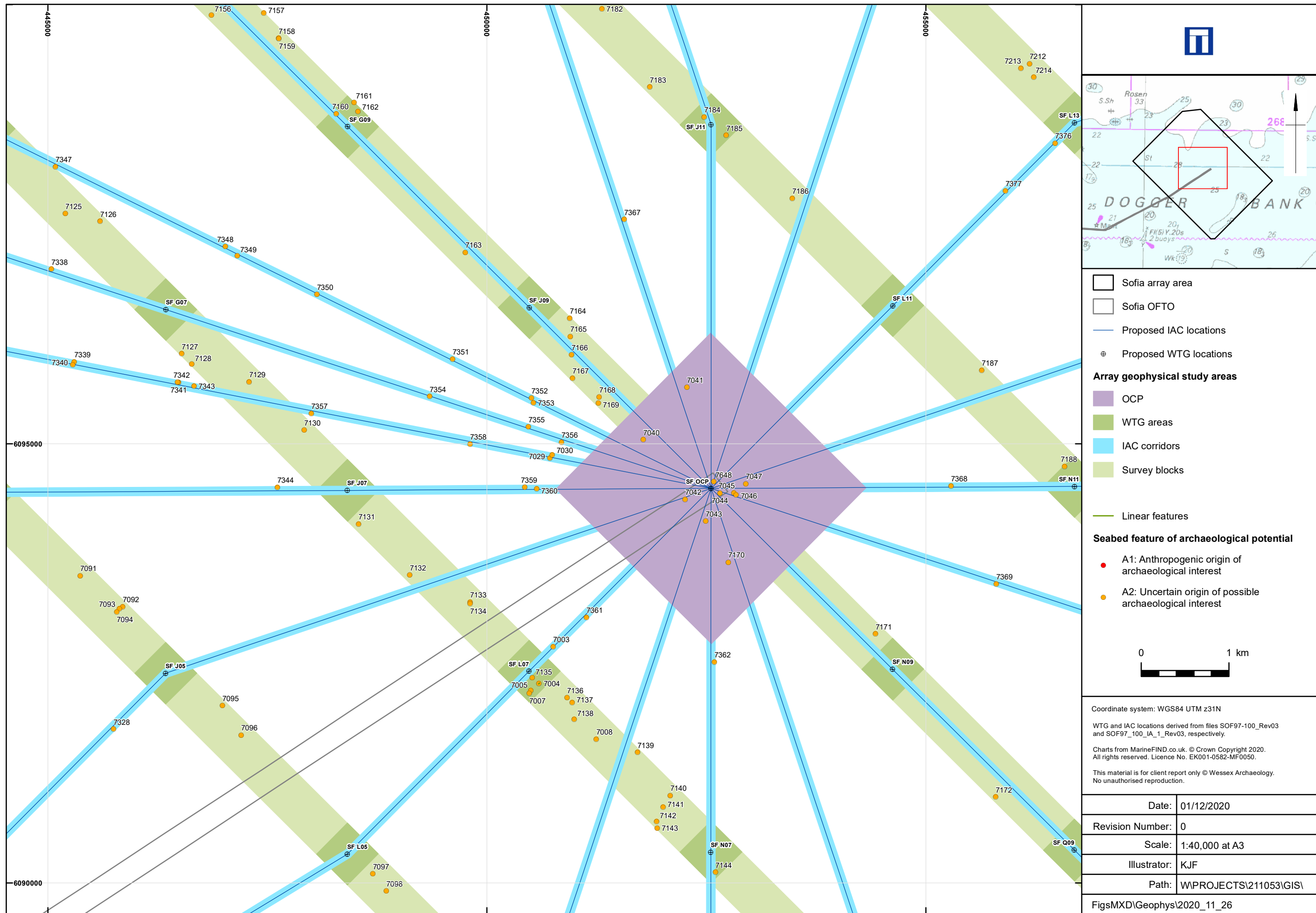
Seabed features of archaeological potential

Figure 2c



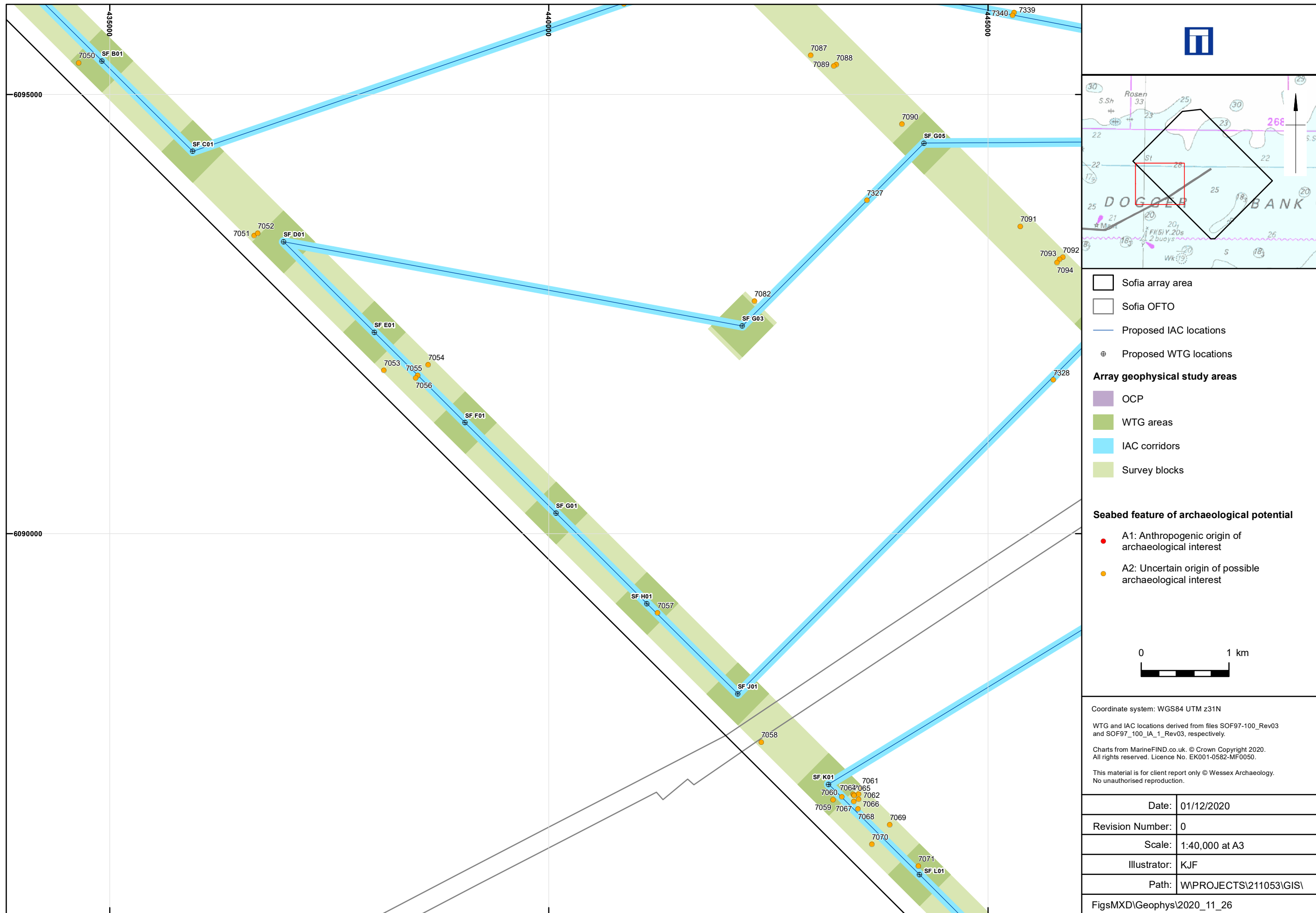
Seabed features of archaeological potential

Figure 2d



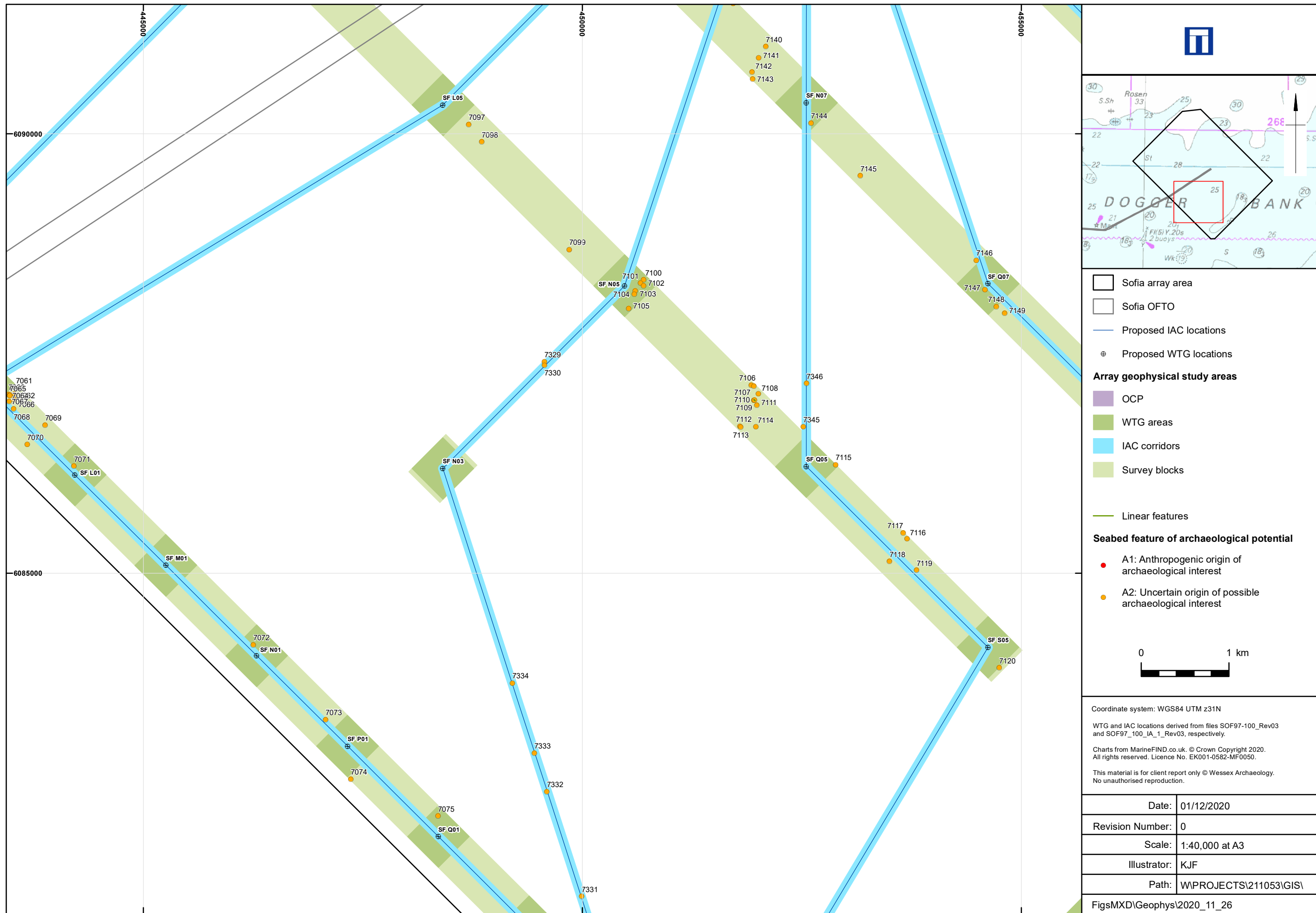
Seabed features of archaeological potential

Figure 2e



Seabed features of archaeological potential

Figure 2f



Sofia array area

- Sofia OFTO
- Proposed IAC locations
- Proposed WTG locations

Array geophysical study areas

- OCP
- WTG areas
- IAC corridors
- Survey blocks
- Linear features

Seabed feature of archaeological potential

- A1: Anthropogenic origin of archaeological interest
- A2: Uncertain origin of possible archaeological interest

0 1 km

Coordinate system: WGS84 UTM z31N

WTG and IAC locations derived from files SOF97-100_Rev03 and SOF97_100_IA_1_Rev03, respectively.

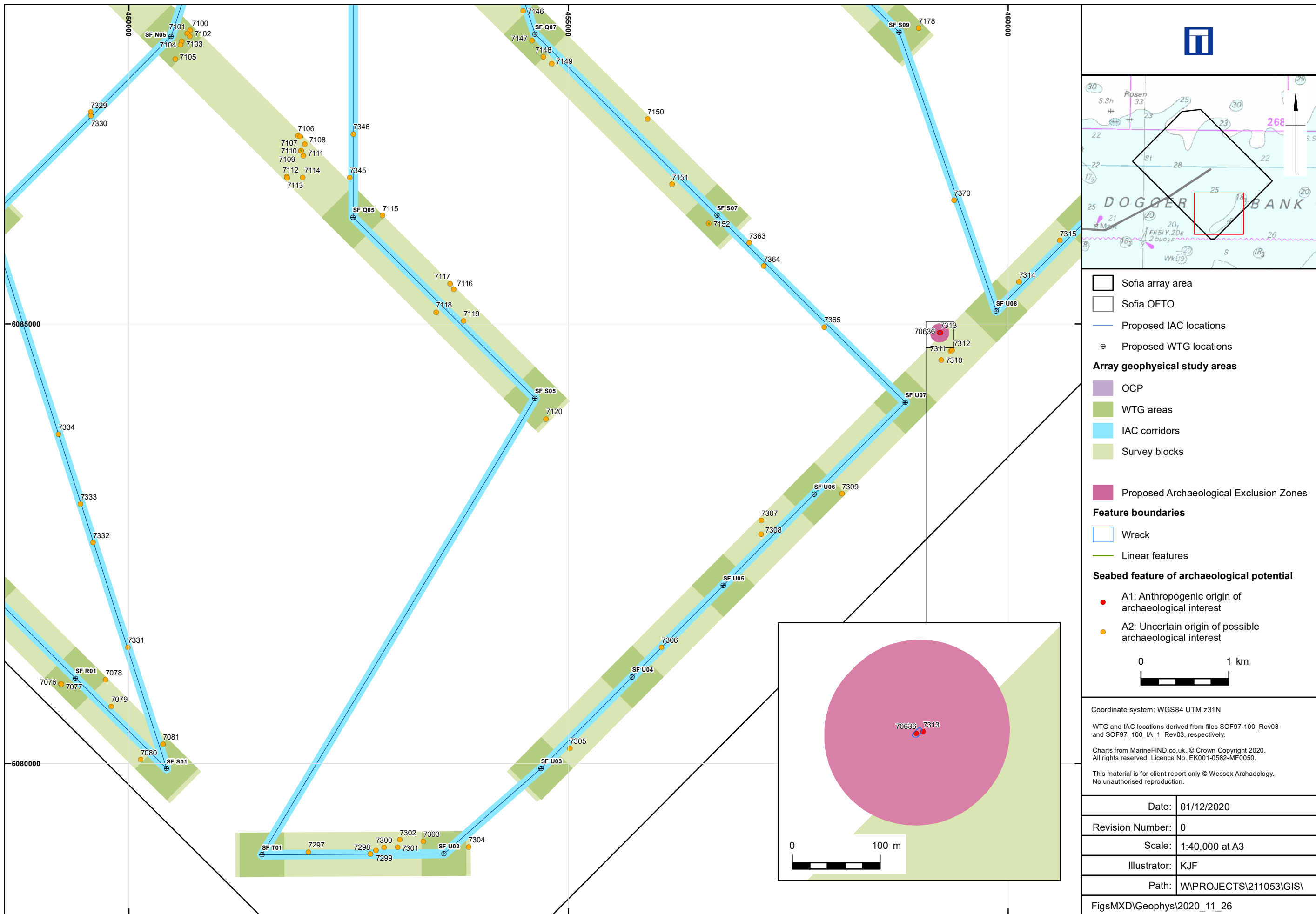
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Seabed features of archaeological potential

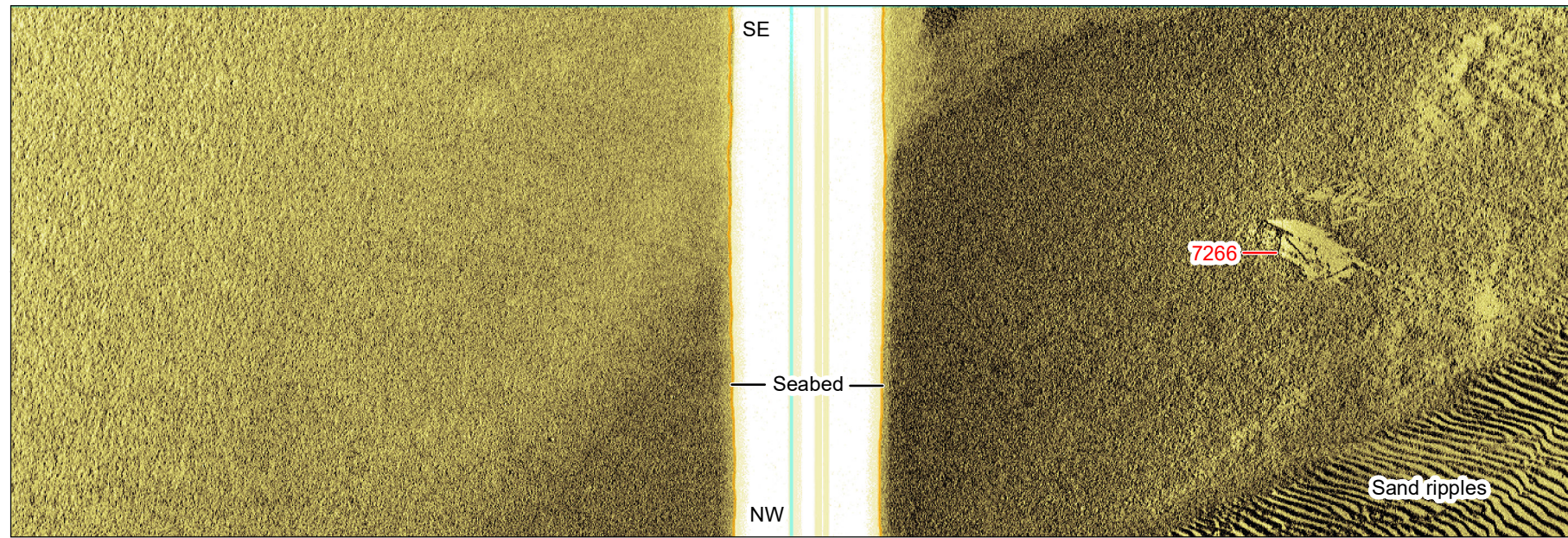
Figure 2g



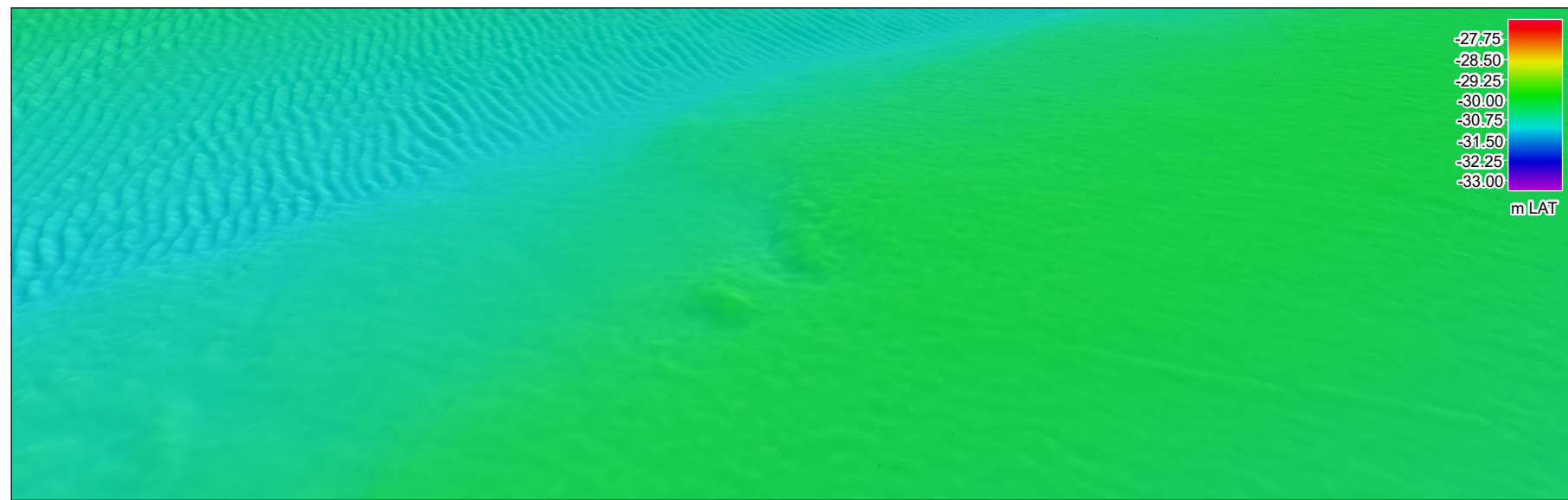
Seabed features of archaeological potential

Figure 2h

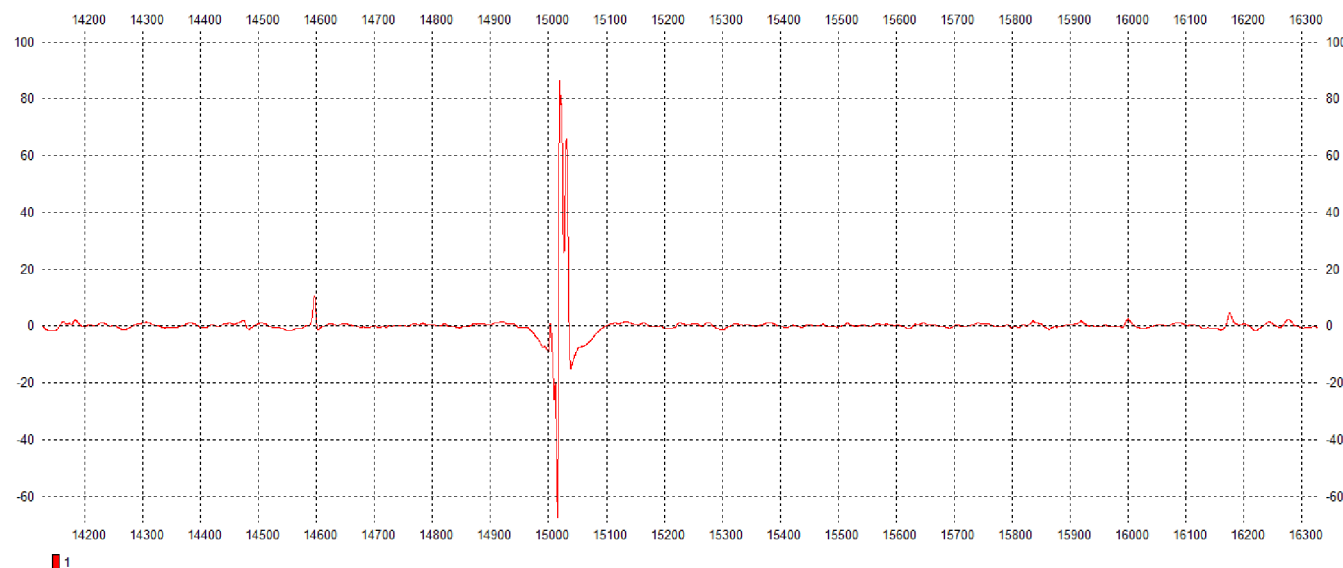
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Revision Number:	0
Scale:	1:40,000 at A3
Illustrator:	KJF
Path:	WPROJECTS\211053\GIS\
FigsMXD\Geophys\2020_11_26	



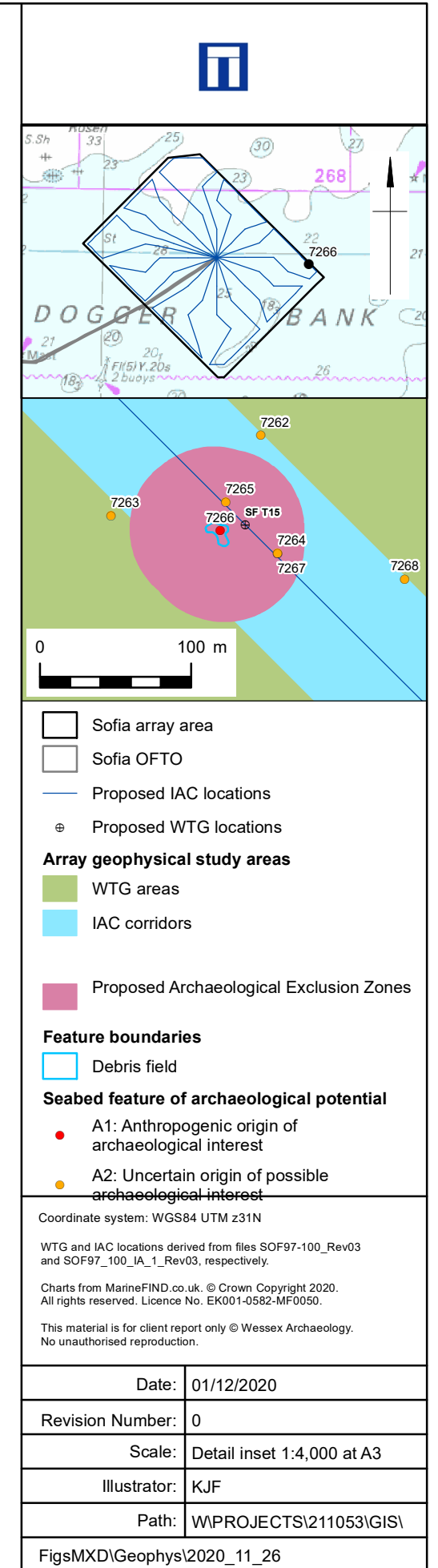
SSS waterfall image, 65 m range per channel, travelling southeast

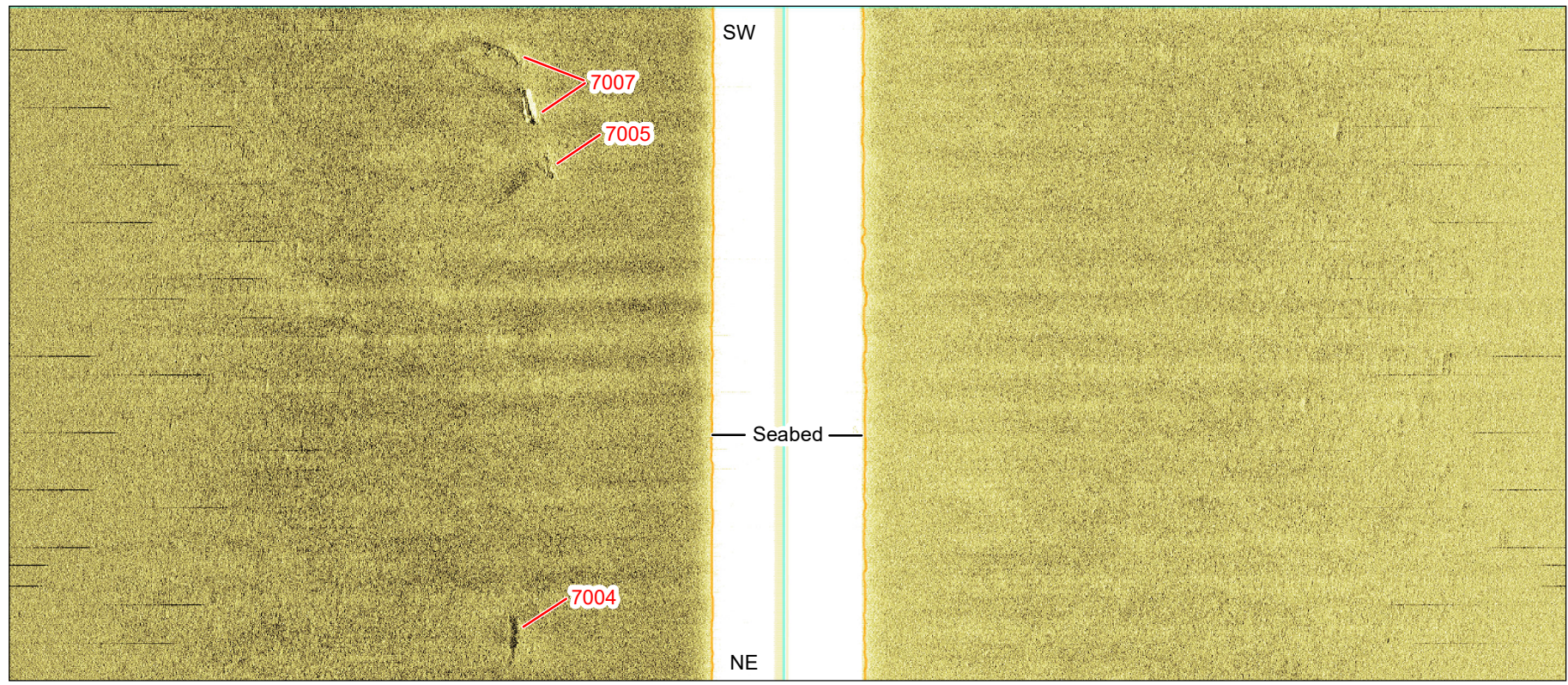


MBES grid image, x5 vertical exaggeration, viewing northwest

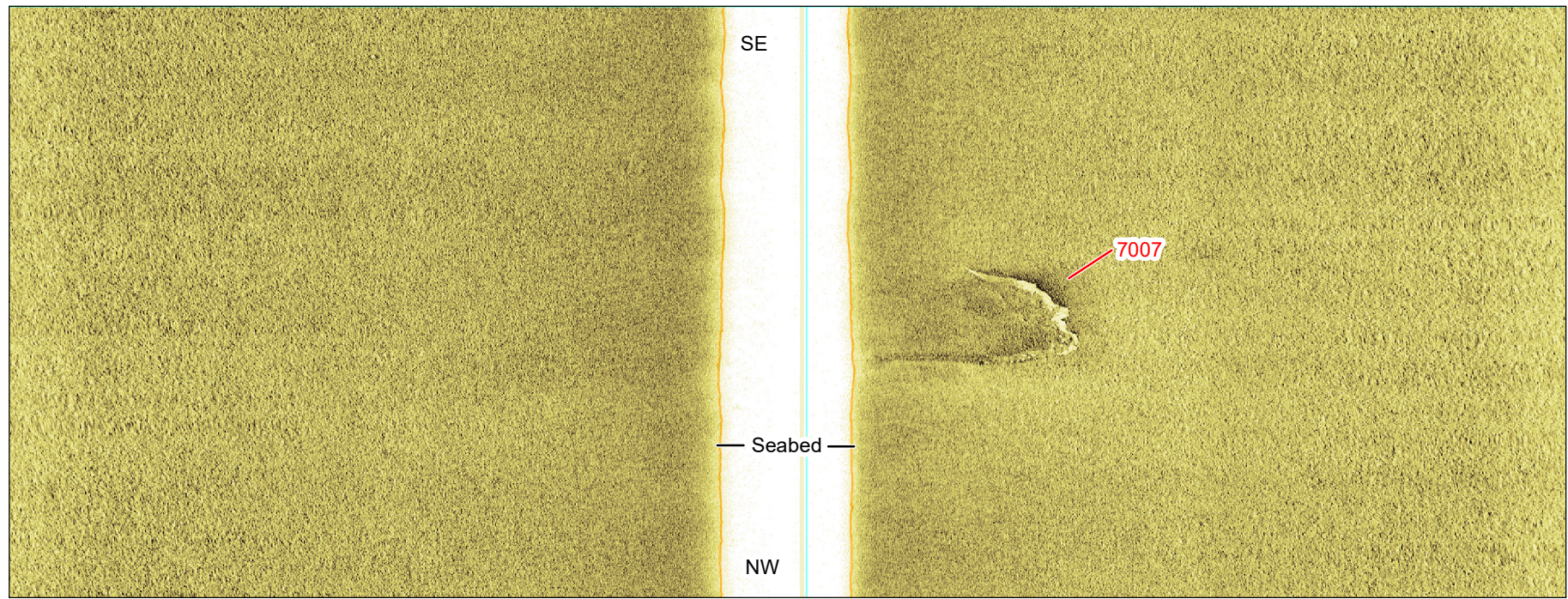


Mag. profile image, x = distance (m), y = magnetic field strength (nT)

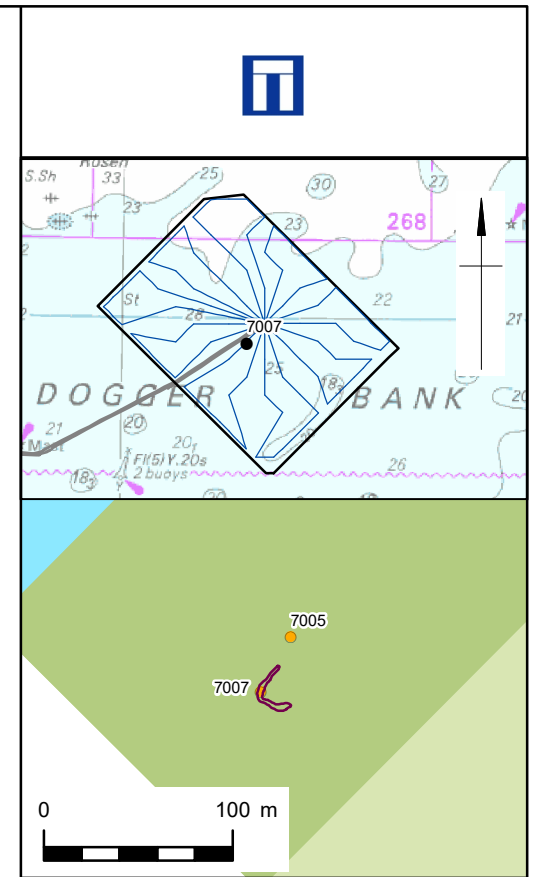




SSS waterfall image (2012 data), 125 m range per channel, travelling southwest



SSS waterfall image (2020 data), 65 m range per channel, travelling southeast



- Sofia array area
 - Sofia OFTO
 - Proposed IAC locations
 - ⊕ Proposed WTG locations
- Array geophysical study areas**
- WTG areas
 - IAC corridors
 - Survey blocks
- space
- Feature boundaries**
- Seabed disturbance
- Seabed feature of archaeological potential**
- A2: Uncertain origin of possible archaeological interest

Coordinate system: WGS84 UTM z31N

WTG and IAC locations derived from files SOF97-100_Rev03 and SOF97_100_IA_1_Rev03, respectively.

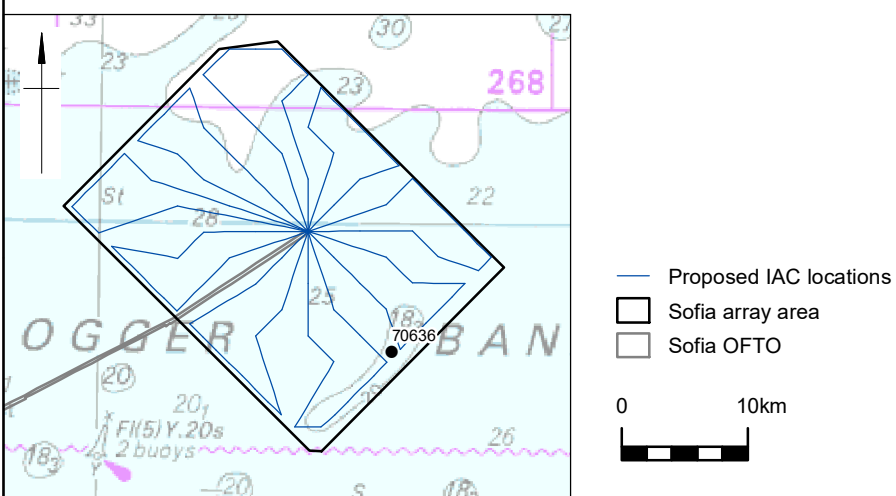
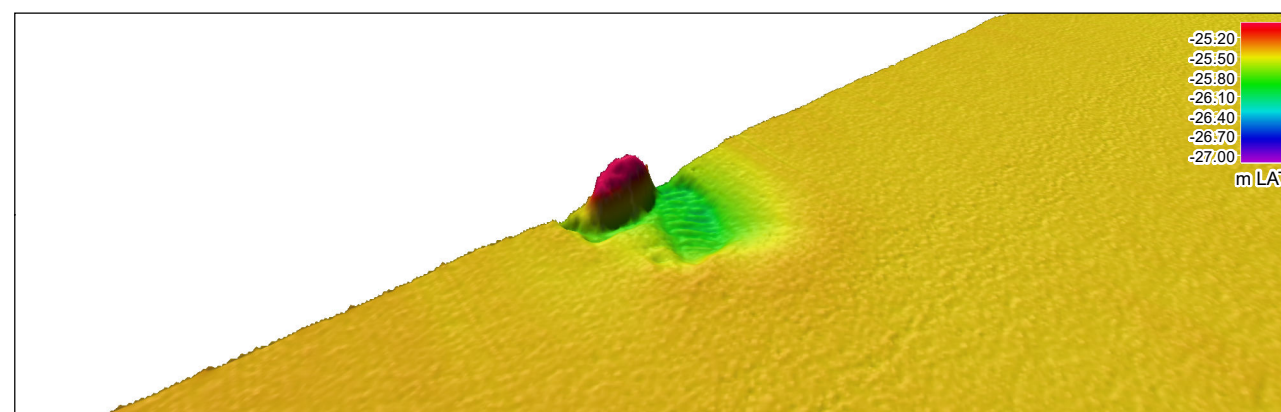
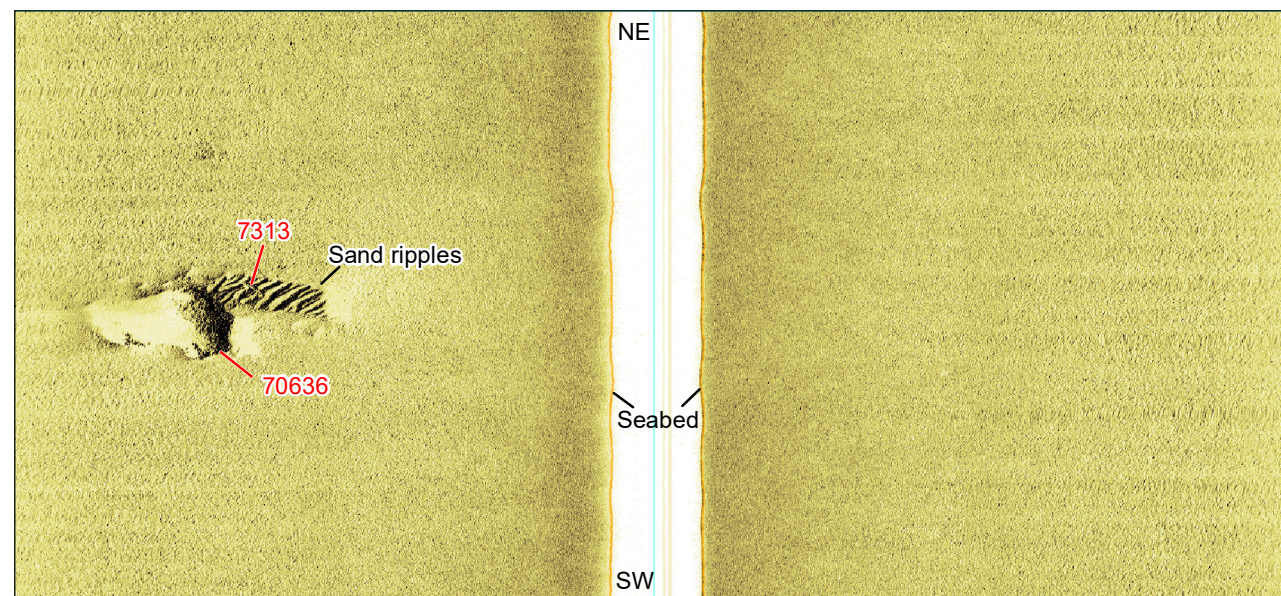
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Date:	01/12/2020
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Scale:	Detail inset 1:4,000 at A3
Illustrator:	KJF
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ID 70636 – Unknown

Location	459211 E 6084897 N	Area	Array Block T
Archaeological Importance	High		
Geophysical survey dimensions and notes	<p>70636 is a distinct, elongate mound, measuring 15.1 x 3.6 x 0.9 m, identified within the most recent SSS and MBES data. The feature was originally identified in the Tranche B assessment in 2012, where it was interpreted as a possible wreck.</p> <p>The mound is situated in a depression, with a localised area of sand ripples immediately to the east, and trends approximately northeast-southwest. No structural features are visible on the surface of the mound, although a potential separate piece of debris (7313) is situated approximately 8 m to the ENE, within the sand ripples.</p> <p>The feature was not covered by the most recent Mag. data, but previous assessments have shown a large negative magnetic monopole of 149 nT at the location, indicating ferrous content.</p>		
	Build	<p>Type Unknown</p> <p>Construction Unknown, but magnetic anomaly suggests ferrous material</p> <p>Dimensions (m) Unknown</p> <p>Shipyard Unknown</p>	
Loss	<p>Cause Unknown</p> <p>During the 2012 assessment it was noted that, based on its dimensions, it may be a possible small wreck such as a fishing vessel. If this is the case, as there is not clear internal structure identified in the geophysical dataset, it is possible that the wreck may be upturned but otherwise relatively intact.</p> <p>However, the feature could also represent a mound of cargo or ballast. In this case, the original surrounding wreck structure has completely disintegrated and become dispersed, and any surviving remains are either buried or without surface expression (with the exception of debris 7313).</p> <p>No wrecks or obstructions are recorded at this position by the UKHO, and visual inspection would be needed to confirm the nature of the feature.</p>		



	Coordinate system: WGS84 UTM31N	Date: 30/11/2020	Revision Number: 0
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