Sheringham Shoal and Dudgeon Offshore Wind Farm Extension Projects

Environmental Statement

Volume 3

Appendix 14.2 - Archaeological Assessment of Geophysical Data – Addendum

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Dudgeon and Sheringham Offshore Wind Farm Extensions

Archaeological Assessment of Geophysical Data – Addendum

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Summary

Wessex Archaeology was commissioned by Royal HaskoningDHV, on behalf of Equinor ASA, to produce an addendum report consisting of review of the existing geophysical anomalies of archaeological and palaeogeographic potential within additional offshore export cable corridor options. These features were originally identified during the 2009 Dudgeon Offshore Wind Farm: Archaeological Desk Based and Geophysical Assessment, the 2014 Dudgeon Offshore Wind Farm Geophysical Assessment of 2013 Data and the 2020 Dudgeon and Sheringham Offshore Wind Farm Extensions Archaeological assessment of geophysical data, of which this current report is an addendum.

A total of 17 features of palaeogeographic interest were identified within the Study Areas. Of these, nine were assigned a P1 archaeological rating (**79019**, **7025**, **7026**, **7032**, **79061**, **79063**, **79073**, **79074** and **79082**), which are features of probable archaeological interest, either because of their palaeogeography or likelihood for producing palaeoenvironmental material. A further eight features were assigned a P2 archaeological rating, which are features of possible archaeological interest.

Should further ground investigation work be undertaken within the Study Area, it is recommended that the archaeological contractor be consulted to advise on potential samples to be acquired for archaeological purposes. It is also recommended that any future geotechnical logs from within the Study Areas be made available for geoarchaeological assessment.

A total of 89 seabed anomalies of archaeological potential were identified within the Study Areas. Of these, two (**7035** and **72596**) were assigned an A1 archaeological discrimination, which are features of anthropogenic origin of archaeological interest. It is recommended that the archaeological exclusion zones are retained for both of these features.

The remaining 87 anomalies have been assigned an A2 archaeological discrimination rating, which are anomalies of uncertain origin of possible archaeological interest. No Archaeological Exclusion Zones are recommended for these features at this time. However, avoidance of these features by micro-siting is recommended if they are proposed to be directly impacted by development in the future.

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 *Offshore Renewables Protocol for Archaeological Discoveries*. This will establish whether the recovered objects are of archaeological interest and recommend appropriate mitigation measures.

Acknowledgements

This assessment of geophysical data was commissioned by Royal HaskoningDHV, on behalf of Equinor ASA, and the assistance of Victoria Cooper of Royal HaskoningDHV is acknowledged in this respect.

The geophysical data used for this assessment were originally acquired by Gardline Geosurvey Limited in 2007-8 and 2019-20, Fugro EMU Limited in 2013.

Dudgeon and Sheringham Offshore Wind Farm Extensions

Archaeological assessment of geophysical data- Addendum

1 INTRODUCTION

1.1 Project background

1.1.1 Wessex Archaeology was commissioned by Royal HaskoningDHV, on behalf of Equinor ASA, to produce an addendum report consisting of a review of the existing geophysical anomalies of archaeological potential within four additional offshore export cable corridor options. This is to facilitate the construction and operation of the Dudgeon Extension Project (DEP) in the event that the Sheringham Extension Project (SEP) is not developed.

1.1.2 The survey areas are located in the Southern North Sea, north of the north Norfolk coast. The DEP has been split into two separate areas; one is immediately to the north-west (DEP NW) and the other to the south-east (DEP SE) of the existing Dudgeon Offshore Wind Farm (OWF) (Figure 1). The SEP is immediately to the north and east of the existing Sheringham Shoal OWF (Figure 1).

1.1.3 The proposed additional offshore export cable corridor options being reviewed for this assessment comprise a corridor linking DEP NW and DEP SE, running along the southern extent of the current Dudgeon OWF ('DEP S to DEP N along Dudgeon'); a corridor running along the north and eastern edge of SEP ('Around SEP'); a corridor running south through the proposed SEP and along the north-eastern edge of the current Sheringham Shoal OWF ('Through SEP along Sheringham Shoal') and through SEP linking the proposed extension project interconnector corridor with the original proposed export cable route ('straight through SEP').

1.1.4 Wessex Archaeology has previously undertaken a series of assessments for both the Dudgeon and Sheringham Shoal OWF, DEP and SEP projects and their originally proposed export cable route developments. The assessments and related surveys are outlined in Tables 1 and 2.

Table 1 Summary of past Wessex Archaeology reports for the Dudgeon development

Document	Date	Reference	Wessex Archaeology report ref.
Dudgeon Offshore Wind Farm: Archaeological Desk Based and Geophysical Assessment	2009	Wessex Archaeology 2009a	69680.08
Dudgeon Offshore Wind Farm Extension Area: Archaeological Assessment of Marine Geophysical Data	2009	Wessex Archaeology 2009b	69680.04
Dudgeon Offshore Wind Farm: Stages 1 to 3 Geoarchaeological and Palaeoenvironmental Assessment	2014	Wessex Archaeology 2014a	69681.03
Dudgeon Offshore Wind Farm Geophysical Assessment of 2013 Data	2014	Wessex Archaeology 2014b	69682.04

Document	Date	Reference	Wessex Archaeology report ref.
Dudgeon Offshore Wind Farm Archaeological Monitoring and Mitigation: Written Scheme of Investigation	2014	Wessex Archaeology 2014c	69683.04
Dudgeon Offshore Wind Farm Review of Archaeological Material During Unexploded Ordnance Survey (Turbine Locations and Cable Route) Method Statement	2014	Wessex Archaeology 2014d	69683.06
Dudgeon Offshore Wind Farm Archaeological Assessment of UXO Survey Results	2015	Wessex Archaeology 2015a	69684.01
Dudgeon Offshore Wind Farm Archaeological Assessment of UXO Survey Results April–May 2015	2015	Wessex Archaeology 2015b	69684.02
Dudgeon Offshore Wind Farm Stage 4 Palaeoenvironmental Analysis, Borehole BH06.	2016	Wessex Archaeology 2016	69685.01
Dudgeon Offshore Wind Farm Post-construction archaeological monitoring assessment of 2018 geophysical data	2019	Wessex Archaeology 2019a	69686.01

Table 2 Summary of past Wessex Archaeology reports for the Sheringham Shoal development

Document	Date	Reference	Wessex Archaeology report ref.
Sheringham Shoal Offshore Windfarm Archaeological Desk-Based Assessment. Technical Report	2006	Wessex Archaeology 2006a	61031.02
Sheringham Shoal OWF Stage 2 Archaeological Recording and Sampling of Vibrocores	2006	Wessex Archaeology 2006b	61032.02
Sheringham Shoal Offshore Wind Farm Desk Based Assessment	2006	Wessex Archaeology 2006c	61033
Sheringham Shoal Offshore Wind Farm Written Scheme of Investigation	2009	Wessex Archaeology 2009c	61035.03
Sheringham Shoal Offshore Wind Farm Archaeological Assessment of Post-Construction Data	2014	Wessex Archaeology 2014e	101841.03
Sheringham Shoal Offshore Wind Farm Archaeological Assessment of Post-Construction Data 2017	2017	Wessex Archaeology 2017	101841.01

1.1.5 This report consists of a compilation of geophysical anomalies identified during previous phases of assessment. This includes the 2009 Dudgeon Offshore Wind Farm: Archaeological Desk Based and Geophysical Assessment (Wessex Archaeology 2009a); the 2014 Dudgeon Offshore Wind Farm Geophysical Assessment of 2013 Data (Wessex Archaeology 2014b); and the 2020 Dudgeon and Sheringham Offshore Wind Farm Extensions Archaeological assessment of geophysical data, of which this current report is an addendum (Wessex Archaeology 2020).

1.1.6 Geophysical data were acquired by Gardline Geosurvey in 2007-2008 (Wessex Archaeology 2009a) and 2019-2020 (Wessex Archaeology 2020), and by Fugro Emu Ltd in 2013 (Wessex Archaeology 2014b).

1.1.7 The proposed additional offshore export cable corridor options are covered by different geophysical datasets from phases of assessment. These are:

- The 'DEP S to DEP N along Dudgeon' corridor was covered largely by the 2007-2008 and 2013 geophysical datasets, and was previously interpreted as part of Wessex Archaeology 2009a and 2014b. A small section to the west was covered and interpreted as part of Wessex Archaeology 2020;
- The 'Around SEP' corridor was covered by the 2013 geophysical dataset and was previously assessed as part of Wessex Archaeology 2014b; and
- The 'Through SEP along Sheringham Shoal' and 'straight through SEP' corridors were covered by the most recent 2019-2020 dataset (Wessex Archaeology 2020).

1.1.8 The Study Area is defined as the extents of the proposed additional offshore export cable corridor options (Figure 1) as provided by the client on the 19 November 2020. Any geophysical anomalies identified outside of the defined Study Area are considered beyond the scope of this report and are not included in the results or gazetteer of anomalies.

1.2 Aims and objectives

1.2.1 The aim of this assessment is to identify any anomalies of archaeological potential within the Study Area, in order to further inform the planning process ahead of the proposed development scheme. This is to be undertaken through the following objectives:

- Identify any buried palaeolandscape features of possible archaeological potential;
- 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;
- Compare the results with previous archaeological investigations undertaken within the Study Area and with known records (e.g. from the United Kingdom Hydrographic Office (UKHO)); and
- Provide recommendations for archaeological mitigation.

1.3 Co-ordinate system

1.3.1 The survey data was acquired in WGS84 UTM31N projected coordinates, and the results are presented in the same coordinate system.

2 METHODOLOGY

2.1 Data sources

2.1.1 A number of data sources were consulted during this assessment, including:

- Recorded wreck and obstruction data acquired via the UKHO;

- Relevant geological mapping from the area (British Geological Survey (BGS) 1991), admiralty charts received from MarineFind;
- Previous archaeological investigations from the Study Area (see Table 1 and 2 for full list); and
- Client supplied survey reports (Gardline 2020a and 2020b).

2.2 Geophysical data – technical specifications

2.2.1 Geophysical data were acquired by Gardline Geosurvey in 2007-8 (Wessex Archaeology 2009a) and 2019-20 (Wessex Archaeology 2020), and by Fugro Emu Ltd in 2013 (Wessex Archaeology 2014b). For further information on the equipment used, please refer to Wessex Archaeology 2009a; 2014b and 2020

2.3 Geophysical data – processing

2.3.1 No new geophysical data were processed and interpreted as part of this assessment. Instead, gazetteers of anomalies produced during previous phases of assessment were used. These were loaded into Arc GIS to identify any anomalies of archaeological potential situated within the Study Area. Any such anomalies were then assessed using the relevant project archive and discriminated as per Section 2.5.

2.3.2 As the results used for this assessment were produced using data originally processed as part of earlier reports. As such, there may be some small differences in the software used and specific methodologies in which the data were processed. For more information on the processing methods and the software previously used to interpret each dataset, please refer to the original reports (Table 1, Table 2).

2.3.3 For the purposes of this report, the identified magnetic anomalies have been classified as small (5 nT to 49 nT), medium (50 nT to 99 nT), large (100 nT to 499 nT) and very large (over 500 nT) magnetic anomalies.

2.4 Geophysical data – data quality

2.4.1 During the original processing, 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.

Data quality	Description
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.
Variable	This category contains datasets where the individual lines range in quality. Confidence of interpretation is subsequently likely to vary within the Study Area.

2.4.2 For information on the data quality for the each of the different datasets used for this assessment, please refer to the original reports (Wessex Archaeology 2009a, 2014b and 2020).

2.4.3 It should be noted that not all of the additional corridors have full geophysical data coverage. The section of corridor running along the north-eastern edge of the current Sheringham Shoal OWF (part of the 'Through SEP along Sheringham Shoal' corridor) is covered by the 2015 post-construction SSS and MBES data only and, as such, there is no Mag. or SBP coverage for this section.

2.4.4 The section of the 'Around SEP' corridor, running along the eastern edge of the SEP, was previously assessed as part of the 2014 geophysical Assessment (Wessex Archaeology 2014b) and has no SBP data coverage. The northern section of the 'Around SEP' optional corridor has not been covered by any previous geophysical assessment, with the exception of a small section of overlap with the 2020 geophysical data (Figure 3.03).

2.4.5 It cannot be guaranteed that there are no anomalies of archaeological or geoarchaeological potential within these areas with reduced or no geophysical data coverage. These areas have been mapped and can be seen in Figure 2.01-2.03 and 3.01-3.04.

2.5 Geophysical data – anomaly grouping and discrimination

2.5.1 During the original data processing and interpretation, all data types were interpreted independently of each other (Wessex Archaeology 2009a, 2014b and 2020). This process inevitably leads to the possibility of any one object being the cause of numerous anomalies in different datasets.

2.5.2 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 and multiple SSS anomalies.

2.5.3 A small number of anomalies identified during the 2014 data assessment had not been grouped in with their original 2009 assessment ID numbers. Where this has occurred, both the most recent 2014 ID numbers have been retained, with reference to their original ID number in the gazetteer description.

2.5.4 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	P1	Feature of probable archaeological interest, either because of its palaeogeography or	SBP, MBES

		likelihood for producing palaeoenvironmental material	
Archaeological	P2	Feature of possible archaeological interest	SBP, MBES
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.

2.5.5 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.

2.5.6 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 subsequently not included in this report.

3 PALAEOGEOGRAPHIC ASSESSMENT

3.1 Geological baseline and archaeological potential

3.1.1 The Study Area is situated within the southern North Sea Basin. The environment within the Study Area is currently fully marine, and a shallow marine basin has existed in the approximate location of the North Sea since the Early Tertiary (although the exact location and extent has altered over time), which is reflected in the geology of the region (Cameron *et al.* 1992).

3.1.2 The background geology of the Study Area is dominated by the Chalk Group, an extensive deposit of chalk present throughout much of the North Sea and southern England, which was laid down in shallow marine conditions during the Upper Cretaceous period. The upper surface of the Chalk Group is erosional, and the unit is unconformably overlain by a series of Pleistocene deposits and, in some places, Early Holocene sediments (Cameron *et al*. 1992). These were deposited in a range of environments, from terrestrial to marine, and it is the terrestrial sediments, deposited during periods of low relative sea level, that are of the highest archaeological potential. For further information on the geological background of the area, as well as the archaeological potential of the different geological units expected to be present, please refer to the previous report produced as part of the Dudgeon and Sheringham Shoal Extension Projects (Wessex Archaeology 2020).

3.2 Palaeogeographic assessment results

3.2.1 All palaeogeographic features presented in this report were originally identified during previous assessments (Wessex Archaeology 2009a and 2020).

3.2.2 The identified geology within the Study Area is based on the Dudgeon and Sheringham Offshore Wind Farm Extensions assessment (Wessex Archaeology 2020), and has been divided into eight units, as described below:

Table 5 Shallow stratigraphy of the Study Area

Unit	Unit Name	Geophysical Characteristics (1)	Sediment Type (2)	Archaeological Potential
8	Holocene Seabed Sediments (post-transgression) (Marine Isotope Stage (MIS) 1)	Generally observed as a veneer across the site, but occasionally thickening into large sand wave and bank features. Boundary between surficial sediments and underlying units not always discernible, but an occasionally, distinct horizontal reflector may mark the base of sand in some locations.	Gravelly sand with shell fragments, sand waves and ripples indicate sediment is mobile.	Considered of low potential in itself, but possibly contains re-worked artefacts and can cover wreck sites and other cultural heritage.
7	Holocene Sediments (Pre-transgression) (MIS 2 to 1)	Small shallow infilled channels with either seismically transparent fill, or fill characterised by sub-parallel internal reflectors. May also comprise a basal, high amplitude reflector, possibly representing a peat layer.	Fluvial, estuarine and terrestrial (including peat) deposits.	Potential to contain *in situ* and derived archaeological material, and palaeoenvironmental material.
6b	Botney Cut Devensian to possibly Early Holocene (MIS 2 to 1)	Channel features with distinct basal reflectors and fill characterised by sub-parallel internal reflectors. Acoustic blanking occasionally seen at base and within.	Clays and sands. Alluvial (estuarine) and terrestrial (peat) sediments probably relating to the Holocene	Upper deposit of glaciolacustrine mud infilling sub-glacial valleys. Upper deposits could possibly contain derived or *in-situ* artefacts and preserved palaeoenvironmental material.
6a	Botney Cut Devensian to possibly Early Holocene age (MIS 2)	Acoustically chaotic unit with faint basal reflector, possibly infilling broad, faint channel features. Some sub-horizontal internal reflectors.	Glacial tills	Sequence of glacial till. Likely to have removed earlier archaeological material, the lower till is unlikely to contain artefacts.
5	Bolders Bank (Late Devensian) (MIS 2)	Acoustically chaotic blanket deposit often with internal reflectors and some occasional internal channelling	Subglacial terrestrial till	Glacial till deposits. Likely to have removed earlier archaeological material and unlikely to contain artefacts.
4	Egmond Ground (Hoxnian/Wolstonian) (MIS 8)	Fill characterised by numerous faint reflectors and a distinct basal reflector	Sands and gravels of probably marine origin.	Shallow marine sediments. Earlier *in-situ* deposits may be buried by the formation.

Unit	Unit Name	Geophysical Characteristics [1]	Sediment Type [2]	Archaeological Potential
3	Swarte Bank Formation (Anglian/Early Hoxnian) (MIS 12/11)	Acoustically chaotic unit with faint basal reflector, possibly infilling broad, faint channel features. Some sub-horizontal internal reflectors.	Sub-glacial channel fill, comprising a basal reworked till with upper glaciolacustrine / glaciomarine sediment.	Sequence of glacial till, glaciolacustrine muds and glaciomarine sands infilling large sub-glacial valleys. Likely to have removed earlier archaeological material and the fill is unlikely to contain artefacts.
2	pre-Devensian Weybourne Channel	Broad, distinct channel feature with an undulating basal reflector. Fill characterised by an upper unit characterised by numerous, faint sub-horizontal reflectors, overlaying a more acoustically chaotic unit	Alluvial sequence found to comprise sand, clay and organic silt.	Exact age, and therefore archaeological potential, is uncertain however thought to have the potential to contain *in situ* and derived archaeological material, and palaeoenvironmental material.
1	Upper cretaceous chalk	Fairly acoustically quiet with some, faint dipping reflectors	White and greyish white chalk with some nodular flint and some softer "putty" chalk, resulting in periglacial activity.	Pre-Earliest occupation of the UK

[1] Based on geophysical data

[2] Based on vibrocore and borehole data (Wessex Archaeology 2009c; 2014a; 2016) and Cameron *et al.,* (1992)

3.2.3 The above stratigraphy is a combination of the identified shallow geological units from across the DEP and SEP areas and their associated ECR. The entire stratigraphy was not identified in any one single place, and the exact number of units present will differ depending on location.

3.2.4 Within the Study Area, Units 3, 4, 5, 6, 7 and 8 have been interpreted as being present.

3.2.5 The oldest geological unit interpreted within the Study Area is Unit 3. This is expected to be present either below a veneer of Unit 8, or below Unit 5, in the south-eastern corner of the SEP area. However, due to its acoustic similarities with Unit 5, it has not been definitively identified within the geophysical data.

3.2.6 A blanket deposit of Unit 5 is expected throughout the entire Study Area either below Unit 8 or otherwise directly below seabed.

3.2.7 Seven channel features are identified within the Study Area (**79019**, **7026**, **79061**, **79063**, **79073-4** and **79082**) and are seen to be cutting into either Unit 3 or Unit 5. These are generally characterised by a distinct basal reflector and fill consisting of numerous horizontal and sub-horizontal reflectors, indicating well-layered sediments. These channel features have been interpreted as Botney Cut features (Unit 6b), which have the potential

to contain derived artefacts and preserved palaeoenvironmental material, although there is the possibility of them being later Holocene features (Unit 7).

3.2.8 An interpreted Botney Cut feature (**7026**) was identified during the 2009 assessment, reported as cutting into the underlying Bolders Bank Formation to a depth of approximately 4 m, with a fill more transparent than the surrounding sediment. This feature is located in the DEP S to DEP N along Dudgeon corridor, adjacent to the Dudgeon OWF, and was not covered by the SBP data acquired for the 2020 phase of assessment. The previous interpretation has been retained, although it has been reclassified as a channel based on its size and description.

3.2.9 Feature **7026** was sampled (Borehole BH06) as part of geotechnical investigations undertaken in 2013/4 in the main Dudgeon OWF site (Wessex Archaeology 2014a; 2016). During the assessment of BH06, units of highly laminated organic gyttja and peat with intervening sandy peat were identified, which are thought to represent the gradual infilling of a freshwater lake followed by the development of a small channel infilled with shelly sandy gravel and sealed by a thin layer of gyttja and peat. Radiocarbon dating showed that these sediments accumulated over a period between *ca.* 12 700 and 9260 cal BP, during a period of significant climate change with the abrupt cooling of the Younger Dryas (from 12,900 to 12,700 cal a BP) followed by rapid warming during the onset of the Holocene (from 11, 700 cal a BP) (Brown *et al.* 2018).

3.2.10 It is possible that the other Botney Cut channels identified across the Study Areas are of a similar age to those sediments and, as such, the sediments associated with these features are deemed to be of high archaeological potential. This is due to the fact they could contain *in situ* or derived anthropogenic artefacts and preserved palaeoenvironmental material.

3.2.11 Two anomalies (**7025** and **7032**) were identified during the 2009 assessment (Wessex Archaeology 2009a) as a high amplitude reflectors and interpreted as being possible peat. If peat, these features are likely to represent former terrestrial landscapes and, as such, the sediments associated with these features are deemed to be of high archaeological potential.

3.2.12 In the northern section of the DEP S to DEP N along Dudgeon corridor, and the south-eastern corner of the Through SEP along Sheringham Shoal corridor, a distinct, horizontal reflector was identified below Unit 8 in the parametric sonar data during the 2020 assessment. It is possible that this feature represents an erosion surface, possibly a former terrestrial landscape which may contain peat, similar to **7025** and **7032**. However, it is also possible that this feature represents the base of the mobile sands. Due to the uncertainty in its origins, the feature has been mapped (Figure 2.01-2.03) however it has not been given its own anomaly number.

3.2.13 One complex cut and fill (**79021**) and seven simple cut and fills (**79045-7**, **79062**, **76064** and **79080-1**) were identified within the Study Area. These features are thought to be of a similar age as the channels described above. However, as they could not be traced any distance as coherent palaeochannels, they are interpreted as cut and fill features. It is possible that they are the remnants of eroded palaeochannel systems but, as their nature is less certain, they are considered of lower archaeological potential.

3.2.14 It should be noted that the features identified within the Study Area generally represent small sections of larger features, which are seen to extend across greater areas of DEP, SEP and the existing Dudgeon and Sheringham Shoal OWFs. To see these features in context of their larger features, please refer to Wessex Archaeology 2009a and 2020.

3.2.15 Due to the penetration of the Parametric Sonar data, the shallow nature of some of the features, and the acoustic similarities between Unit 6b and the underlying Units 6a and 5, it has not always been possible to accurately map the full extents of some of the features, particularly the Botney Cut features, within the Study Area.

3.2.16 Unit 8 is expected to be present across the Study Areas either as a thin veneer or occasionally thickening out into sand waves. Due to its age and depositional environment, Unit 8 is not considered of archaeological potential in itself. However, in areas of mobile seabed sediment, Unit 8 has the potential to periodically bury seabed archaeological features such as shipwreck sites.

3.2.17 No SBP data have been acquired in the 'Around SEP' corridor and the south-eastern leg of the 'Through SEP along Sheringham Shoal' corridor. As such, no comment can be made on the presence of features of paleogeographic interest in these areas.

4 SEABED FEATURES ASSESSMENT

4.1 Introduction

4.1.1 The geophysical anomalies reported on for this assessment were all originally identified during previous assessments (Wessex Archaeology 2009a, 2014b and 2020). Any sites located outside of the defined Study Area, either previously recorded in known databases (e.g. UKHO) or identified during this or previous geophysical assessments, are deemed beyond the scope of the current project and are subsequently not included in this report.

4.2 Seabed features assessment results

4.2.1 The results of this assessment are collated in gazetteer format detailed in Appendix II and illustrated in Figures 3.01 – 3.04.

4.2.2 A total of 89 features have been identified as of possible archaeological potential within the Study Area and are discriminated as shown in Table 6.

Table 6 Anomalies of archaeological potential within the ECR

Archaeological discrimination	Quantity	Interpretation
A1	2	Anthropogenic origin of archaeological interest
A2	87	Uncertain origin of possible archaeological interest
Total	**89**	

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

Table 7 Types of anomaly identified

Anomaly classification	Definition	Number of anomalies
Wreck	Areas of coherent structure including wrecks of ships, submarines and some aircraft (where coherent structure survives)	2
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	3

Anomaly classification	Definition	Number of anomalies
Debris	Distinct objects on the seabed, generally exhibiting height or with evidence of structure, that are potentially anthropogenic in origin	17
Depression	An area of disturbed seabed with depth. Potentially indicates scour around a buried feature or where a feature has been cleared.	1
Seabed disturbance	An area of disturbance without individual, distinct objects. Potentially indicates wreck debris or other anthropogenic features buried just below the seabed.	1
Rope/chain	Curvilinear dark reflectors, often with a small amount of height, indicating rope or chain (if ferrous)	1
Dark reflector	Individual objects or areas of high reflectivity, displaying some anthropogenic characteristics. Precise nature is uncertain	24
Magnetic	No associated seabed surface expression, and have the potential to represent possible buried ferrous debris or buried wreck sites	40
Total		**89**

4.2.4 Two anomalies within the Study Area have been discriminated as A1 (**7035** and **72596**).

4.2.5 Wreck **7035** was identified during the 2009 assessment (Wessex Archaeology 2009b) with hull and superstructure clearly visible in the SSS data. The dimensions were recorded as 33.3 x 11.6 x 1.9 m with a large magnetic amplitude of 236 nT This corresponds with the UKHO position for the wreck thought to be the *Aquarius*; a British steam trawler of 187 gross tons that was mined when proceeding from Grimsby to fishing grounds (UKHO 9509). The wreck was not covered by the 2020 geophysical dataset.

4.2.6 Feature **72596** was identified during the 2020 geophysical assessment (Wessex Archaeology 2020). In the SSS data, the feature was seen as a distinct oval outline measuring 36.4 x 15.6 x 0.5 m, which appears pointed at one end and slightly flattened at the other, interpreted as being a possible wreck. The feature is orientated north-west to south-east and appears hull-like in shape with a more distinct southern edge, possibly indicating the feature is either more degraded along its northern edge, or possibly that it is listing toward the north and slightly more buried. There is very little internal detail within the interpreted hull. In the MBES data, the possible wreck was identified as a distinct hull-shaped outline with no clear internal structure visible. The north-east side of the interpreted wreck appears to have some sediment accumulation. The feature had no corresponding magnetic anomaly. This may be due to the fact the possible wreck is not directly covered by a line of Mag. data; however, if the feature were ferrous in construction, it would be likely be seen on the closest Mag. line which suggests that the feature may largely comprise non-ferrous materials

4.2.7 Feature **72596** has no associated UKHO record and therefore may be a previously unrecorded wreck.

4.2.8 The remaining 87 anomalies within the study area have all been discriminated as A2.

4.2.9 Of these A2 anomalies, three have been classified as debris fields (**72640**, **72593** and **72546**). All of these were identified during the most recent geophysical assessment (Wessex Archaeology 2020). The largest is **72593**, which was identified in the SSS data as a large spread of dark reflectors with shadows measuring 27.1 x 22.8 x 0.5 m.

4.2.10 Interpreted debris fields **72593** and **72546** had no associated Mag. anomalies, indicating they comprise non-ferrous material. Feature **72640** was not directly covered by a line of Mag. data and therefore it is not possible to confirm whether the feature comprises ferrous material

4.2.11 Seventeen anomalies were classified as debris (for full list, see Appendix II). Of these, four had associated magnetic anomalies indicating the presence of ferrous material (**70849**, **70879**, **70861** and **70807**). All of these interpreted debris items were identified during either the 2009 or 2014 geophysical assessments (Wessex Archaeology 2009a; 2014b).

4.2.12 Twenty-four anomalies were classified as dark reflectors (for full list, see Appendix II). These range in size from 0.6 m in length (**70008** and **7059**) to 8.3 m in length (**70258**). All of these features have the potential of being items of debris; however, it is also possible that they are natural features.

4.2.13 One feature (**70818**) was interpreted as being a length of rope or chain. This was identified during the 2014 geophysical assessment as a diffuse, long and thin linear dark reflector measuring 19.4 x 1.4 with a faint shadow. The feature appears to be extending from a dark, thin, 'hook' shaped dark reflector with a bright shadow. The feature corresponds with a large magnetic anomaly measuring 249 nT and has been interpreted as a length of rope or chain with an associated ferrous item of debris, possibly an anchor.

4.2.14 One feature (**7056**) was interpreted as being a seabed disturbance. This was identified during the 2009 geophysical assessment as a disturbance measuring 3.5 x 0.3 x 0.2 m. It is possible that this feature contains debris items; however, it may be a natural feature.

4.2.15 One feature (**70324**) was interpreted as being a depression. This was identified during the 2014 geophysical assessment as a circular dark reflector with an associated bright reflector, measuring 5.0 x 2.1 m. Debris item **70323** is a distinct curvilinear piece of debris with the dimensions 53.0 x 0.3 0.1 m, which passes through and is possibly associated with a depression, **70324**, measuring 6.0 x 6.0 m with a depth of 0.1 m. The piece of interpreted debris extends 41 m to the southeast and 17m to the north of the depression.

4.2.16 The remaining 40 anomalies have all been classified as magnetic anomalies, and do not have any significant associated SSS or MBES contacts. These range in amplitude from 17 nT (**7236**) to 495 nT (**70645**), and are interpreted as items of possible ferrous debris that is either buried or without surface expression.

4.2.1 Within the DEP S to DEP N along Dudgeon corridor, items of wooden debris (located 387975 mE, 5905168 mN) are reported as being identified by ROV during the 2015 Archaeological Assessment of UXO Survey Results (Wessex Archaeology 2015a). The feature (MMT ID F14335) is reported as being possible wooden debris in three pieces, the longest of which measures approximately 80 cm in length, and about 10 cm in width. The smaller two pieces measure roughly 60 cm and 30 cm in length. During the 2015 assessment, the material was interpreted as possibly being indicative of a lightly built wooden shipwreck of unknown date; however, it could be modern debris or natural material. It is possible that additional debris lies buried in the area. No excavation was undertaken at this site. As the site has not previously been identified in the geophysical data, and it lies outside of the geophysical data coverage acquired for this assessment, it has not been included in the gazetteer at this time. However, the possibility of there being archaeological material at this location should be noted (Figure 3.01).

4.2.2 It should be noted that the for the south-eastern leg of the 'Through SEP along Sheringham Shoal' corridor, the 2015 SSS and MBES data, which were acquired for the Sheringham Shoal post-construction survey (Wessex Archaeology 2017) were re-assessed as part of the 2020 geophysical assessment (Wessex Archaeology 2020. This dataset did not include any SBP or Mag. data and, as such, it is possible that not all features, particularly ferrous features, of archaeological potential have been identified within these areas.

4.2.3 The northern section of the 'Around SEP' corridor has not been covered by any geophysical assessment and, as such, no comment can be made on the presence of features of archaeological interest in this area.

5 CONCLUSIONS AND RECOMMENDATIONS

Palaeogeographic features

5.1.1 The assessment of the previously identified palaeolandscape features within the Study Area resulted in the identification of a total of 17 features of palaeogeographic interest. These are summarised as follows:

- a total of seven channels and two high amplitude reflectors were assigned a P1 archaeological rating; and
- a total of eight cut and fills were assigned a P2 archaeological rating.

5.1.2 As terrestrial features interpreted as being deposited during periods of known human occupation of the UK, those features given a P1 archaeological rating are considered of high archaeological potential. Those features with a P2 discrimination are considered of medium archaeological potential, partly due to the uncertainty of features formation and fill. Further geoarchaeological investigation (e.g. core log and/or sample assessment) would aid in refining the interpretation of these features, particularly within areas where the distinct horizontal reflector was observed, and therefore help determine the archaeological potential of the area.

5.1.3 Should further ground investigation work be undertaken within the Study Area, it is recommended that the archaeological contractor be consulted to advise on potential samples to be acquired for archaeological purposes. It is also recommended that any future geotechnical logs from within the Study Area be made available for geoarchaeological assessment.

5.1.4 Furthermore, it is recommended that any samples acquired containing material of archaeological potential, particularly those within the interpreted Pleistocene/early Holocene features, be made available for geoarchaeological assessment.

Seabed features

5.1.5 The assessment of the previously identified geophysical anomalies within the Study Area resulted in a total of 89 anomalies identified as of possible archaeological interest. These are summarised as follows:

- a total of two were assigned an A1 archaeological rating; and
- a total of 87 were assigned an A2 archaeological rating.

5.1.6 As features of high archaeological potential, it is recommended that the Archaeological Exclusion Zones (AEZs) recommended during the 2020 assessment (Wessex Archaeology 2020) are retained for the two A1 anomalies. These are summarised in the table below:

Table 8 Recommended AEZs within the Study Area

ID Number	Classification	Original Assessment	Position (WGS84 UTM31N)		Status	Exclusion Zone	Area
			Easting	Northing			
7035	Wreck	69680	387699	5905833	Retained	70 m buffer around previous feature extent	DEP S to DEP N along Dudgeon
72596	Wreck	233450	382091	5886033	Retained	50 m buffer around current feature extent	Straight through SEP

5.1.7 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 are proposed to 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.

5.1.8 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 Offshore Renewables Protocol for Archaeological Discoveries (ORPAD) (The Crown Estate 2014). This will establish whether the recovered objects are of archaeological interest and recommend appropriate mitigation measures.

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APPENDICES

Appendix I Palaeogeographic features of archaeological potential

ID	Classification	Archaeological discrimination	Depth Range (mBSB)		Description	Area	Data Source
			From	To			
79019	Channel	P1	0.1	7.7	A distinct channel feature with an uneven base identified during the most recent phase of assessment. Feature is situated below a unit of possible modern marine sediments and cutting into the interpreted Swarte Bank formation. Feature is orientated north-east to south-west. Feature fill appears to be multi-phase and is characterised by a lower unit characterised by numerous sub-horizontal reflectors, overlain by a possible second acoustically quiet fill in places, however it is possible that this is overlying modern marine sediments. Possible Botney Cut channel.	Through SEP along Sheringham Shoal and Straight through SEP	233450 (Pinger and parametric sonar)
79021	Complex cut and fill	P2	0.3	3.1	A complex cut and fill with a distinct basal reflector identified during the most recent phase of assessment below a veneer of modern marine sediments, cut into the interpreted Bolders Bank formation. Feature fill is characterised by numerous sub-horizontal reflectors, indicated well-layered sediments, with a possible second more acoustically chaotic fill above. Feature identified at the outer limits of the data extents and therefore may form part of a larger feature.	DEP S to DEP N along Dudgeon	233450 (Parametric Sonar data)
79045	Simple cut and fill	P2	0.3	2.6	A shallow simple cut and fill identified during the most recent phase of assessment beneath a unit of mobile marine sediments, cut into the interpreted Bolders Bank Formation. The feature has a distinct basal reflector and relatively chaotic fill. Possible small cut and fill, however, also has the potential of being an internal Bolders Bank feature.	DEP S to DEP N along Dudgeon	233450 (Parametric Sonar data)
7025	High amplitude reflector	P1	1.0	0.4	A high amplitude reflector identified during the 2009 data assessment and interpreted as being possible peat. Feature was identified beneath a unit of Holocene sands and above the interpreted Bolders Bank Formation and partially above a possible Botney Cut channel (7026). Feature is reported as being identified 1 - 4 m below the trough of sand wave.	DEP S to DEP N along Dudgeon	69680
7026	Channel	P1	-	4.0	An interpreted Botney Cut feature was identified during the 2009 assessment, reported as being cut below trough of overlying sand waves with a maximum cut depth approximately 4m. The feature is partially situated beneath a high amplitude reflector, interpreted as being possible peat (7025 and 7032). Feature is reported as cutting into underlying Bolders Bank formation with fill	DEP S to DEP N along Dudgeon	69680

ID	Classification	Archaeological discrimination	Depth Range (mBSB)		Description	Area	Data Source
			From	To			
					which is more transparent than the surrounding sediment. The feature has been reclassified as a channel based on its size and description. Feature 7026 was sampled as part of geotechnical investigations undertaken in 2013/4 (BH06) and found to contain material of paleoenvironmental interest. Possible Botney Cut channel.		
7032	High amplitude reflector	P1	-	2.0	A high amplitude reflector identified during the 2009 data assessment and interpreted as being possible peat. Feature was identified beneath a unit of Holocene sands and above an interpreted Botney Cut Channel (7026). Feature is reported as being identified less than 2 m below the trough of sand wave.	DEP S to DEP N along Dudgeon	69680
79046	Simple cut and fill	P2	0.5	3.4	A shallow simple cut and fill cutting into the interpreted Bolders Bank formation identified during the most recent phase of assessment. Feature is identified beneath a distinct, horizontal reflector which is possibly the base of the mobile sand unit, however has the potential of being an erosion surface which may form part of a former terrestrial environment. The feature has a distinct basal reflector and relatively chaotic fill. The feature is located approximately 320 m north of feature 7026 which was identified during the 2009 assessment. Feature 7026 was sampled as part of geotechnical investigations undertaken in 2013/4 and found to contain material of palaeoenvironmental interest. It is possible that this feature represents an internal Bolders Bank feature however, based on its form and proximity to feature 7026, it has been retained here as a feature of possible interest.	DEP S to DEP N along Dudgeon	233450 (Parametric Sonar data)
79047	Simple cut and fill	P2	0.4	1.7	A shallow simple cut an fill cutting into the interpreted Bolders Bank formation identified during the most recent phase of assessment beneath a distinct, horizontal reflector which is possibly the base of the mobile sand unit, however has the potential of being an erosion surface which may form part of a former terrestrial environment. The feature has a distinct basal reflector and relatively chaotic fill. The feature is located approximately 170 m north of feature 7026 which was identified during the 2009 assessment. Feature 7026 was sampled as part of geotechnical investigations undertaken in 2013/4 (BH06) and found to contain material of palaeoenvironmental interest. It is possible that this feature represents an internal Bolders Bank feature however, based on its form and proximity to feature 7026, it has been retained here as a feature of possible interest.	DEP S to DEP N along Dudgeon	233450 (Parametric Sonar data)

ID	Classification	Archaeological discrimination	Depth Range (mBSB)		Description	Area	Data Source
			From	To			
79061	Channel	P1	0.2	4.8	A complex channel identified either directly below the seabed or below a veneer or modern marine sediments, cutting into the interpreted Bolders Bank formation. The feature has a distinct, basal reflector and fill which is generally characterised by numerous draping reflectors but occasionally seen to be acoustically chaotic. The feature is orientated roughly south-west to north-east. Possibly associated with nearby feature 79019.	Through SEP along Sheringham Shoal and Straight through SEP	233450 (Parametric Sonar data)
79062	Simple cut and fill	P2	0.4	5.2	A shallow simple cut and fill identified during the most recent phase of assessment beneath an acoustically chaotic layer interpreted as being a unit of marine sediments, cut into the interpreted Bolders Bank Formation. The feature has a distinct basal reflector and fill characterised by numerous faint sub-horizontal reflectors. Possibly related to nearby complex channel 79061 and 79019.	Through SEP along Sheringham Shoal	233450 (Parametric Sonar data)
79063	Channel	P1	0.2	7.0	A shallow channel identified during the most recent phase of assessment, either directly below the seabed or below a veneer or modern marine sediments, cutting into the interpreted Bolders Bank formation. Feature has a distinct, undulating basal reflector. Feature fill is generally characterised by numerous, faint sub-horizontal reflectors, but appears chaotic towards the edges. Possible Botney Cut channel. Possibly related to nearby complex channels 79061 and 79019.	Straight through SEP	233450 (Parametric Sonar data)
79064	Simple cut and fill	P2	0.3	1.4	A small shallow, simple cut and fill identified during the most recent phase of assessment either directly below the seabed or below a veneer or modern marine sediments, cutting into the interpreted Bolders Bank formation. Feature has a distinct basal reflector and slightly layered fill. Located approximately 90 m north-west of channel feature 79063 and possibly related.	Straight through SEP	233450 (Parametric Sonar data)
79073	Channel	P1	0.1	3.5	A shallow channel identified during the most recent phase of assessment either directly below the seabed or below a veneer or modern marine sediments, cutting into the interpreted Bolders Bank formation. Feature has a distinct, undulating basal reflector. Feature fill is generally characterised by numerous, faint sub-horizontal reflectors, but appears chaotic in some areas where the exact extents are hard to discern. Possibly related to nearby complex channel 79074. Possible Botney Cut channel.	Straight through SEP	233450 (Parametric Sonar data)
79074	Channel	P1	0.2	4.8	An area of complex channelling identified during the most recent phase of assessment cutting into the interpreted Bolders Bank formation. Channel fill is characterised by numerous horizontal reflectors, possibly indicating well-	Straight through SEP	233450 (Parametric Sonar data)

ID	Classification	Archaeological discrimination	Depth Range (mBSB)		Description	Area	Data Source
			From	To			
					layered sediments which may have been deposited in a low-energy environment. Feature is largely identified beneath a distinct, flat, horizontal reflector overlain by a slightly layered, occasionally chaotic unit. It is possible that this horizontal reflector represents the base of the mobile sand unit; however, there is also the possibility of the feature representing an erosion surface or former terrestrial landscape which has the potential to contain sediments and material of palaeoenvironmental and archaeological interest. Feature corresponds with a very slight topographic high identified on the MBES data indicating a possible banked feature.		
79080	Simple cut and fill	P2	0.1	2.7	A small, shallow simple cut and fill identified during the most recent phase of assessment either directly below the seabed or below a veneer or modern marine sediments, cutting into the interpreted Bolders Bank formation. Feature has a distinct, undulating basal reflector and unit fill characterised by draping reflectors indicating slightly layered fill. Possible small cut and fill, however, also has the potential of being an internal Bolders bank feature. Possibly related to nearby feature 79081.	Straight through SEP	233450 (Parametric Sonar data)
79081	Simple cut and fill	P2	0.3	6.0	A small, shallow simple cut and fill identified during the most recent phase of assessment either directly below the seabed or below a veneer or modern marine sediments, cutting into the interpreted Bolders Bank formation. Feature has a faint, undulating basal reflector which is not always clearly discernible. Unit fill is characterised by draping reflectors indicating slightly layered fill. Possible small cut and fill, however, also has the potential of being an internal Bolders bank feature. Possibly related to nearby feature 79080.	Straight through SEP	233450 (Parametric Sonar data)
79082	Channel	P1	0.1	5.4	An area of complex channelling identified during the most recent phase of assessment cutting into the interpreted Bolders Bank formation beneath a veneer of modern marine sediments. Channel fill is multi-phase and characterised by numerous horizontal reflectors, possibly indicating well-layered sediments which may have been deposited in a low-energy environment. Towards the north, a distinct, flat, horizontal reflector is identified at the top of the feature. It is possible that this horizontal reflector represents an erosion surface or former terrestrial landscape which has the potential to contain sediments and material of palaeoenvironmental and archaeological interest; however it may also be the base of a later phase of fill. Basal reflector is not always clearly discernible making the exact extents of the feature hard to define. Possible Botney Cut channel.	Through SEP along Sheringham Shoal	233450 (Parametric Sonar data)

Appendix II Seabed features of archaeological potential

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
72513	Dark reflector	386278	5909969	A2	2.6	0.8	0.2	-	Identified in the most recent SSS dataset as an elongate, slightly rounded dark reflector with a short, distinct shadow which appears longer at one end, indicating varying heights. No corresponding MBES contacts and no corresponding magnetic response, however it is not directly covered by magnetometer line and therefore the possibility of some ferrous material being present remains. Possible debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	233450	-
7035	Wreck	387699	5905833	A1	33.3	11.6	1.9	236	A wreck identified during the 2009 assessment as a wreck with hull and superstructure clearly visible on the SSS data, with no associated scour. Feature corresponds with the UKHO position for Aquarius (possibly), which was a British steam trawler of 187 gross tons that was mined when proceeding from Grimsby to fishing grounds (UKHO 9509).	DEP S to DEP N along Dudgeon	69680	UKHO 9509
7088	Debris	387543	5904417	A2	3.6	1.6	0.0	-	Feature identified during the 2009 geophysical assessment and interpreted as being a possible item of debris.	DEP S to DEP N along Dudgeon	69680	-
70025	Magnetic	387898	5903899	A2	-	-	-	68	A medium, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									which is either buried or has no surface expression.			
70026	Magnetic	387864	5903966	A2	-	-	-	19	A small positive monopole identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
7078	Debris	387820	5903394	A2	3.4	0.4	0.3	-	Feature identified during the 2009 geophysical assessment and interpreted as being a possible item of debris.	DEP S to DEP N along Dudgeon	69680	-
7061	Debris	387549	5902953	A2	3.1	1.7	0.6	-	Feature identified during the 2009 geophysical assessment and interpreted as being a possible item of debris, possibly with more than one object present.	DEP S to DEP N along Dudgeon	69680	-
70000	Magnetic	387793	5902855	A2	-	-	-	125	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70001	Magnetic	387791	5902821	A2	-	-	-	98	A medium, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70003	Dark Reflector	387814	5902603	A2	1.3	0.3	0.2	-	Distinct curvilinear anomaly with a tapered shadow identified during the 2014 geophysical assessment. The feature is reported as being visible on a quiet area of seabed. Possible item	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									of debris however has the potential of being a natural feature.			
7064	Dark Reflector	388342	5902245	A2	1.6	0.6	0.5	-	Distinct, slightly angular, anomaly with a clear tapered shadow identified during the 2009 and 2014 geophysical assessments. Smaller, possibly associated, features (70006, 70007 and 70008) surround the anomaly. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69680, 69682	-
70006	Dark Reflector	388326	5902241	A2	1.3	0.3	0.2	-	Elongated and angular with a distinct trapezium shadow identified during the 2014 assessment on quiet seabed in the vicinity of similar features (7064, 70007, 70008). Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69680, 69682	-
70007	Dark Reflector	388325	5902231	A2	1.2	0.8	0.4	-	Angular and distinct anomaly with a rounded rectangular shadow identified during the 2014 assessment on a quiet seabed in the vicinity of similar anomalies (7064, 70006, 70008). Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69680, 69682	-
70008	Dark Reflector	388324	5902234	A2	0.6	0.1	0.1	-	Elongated anomaly with a short triangular shadow identified during the 2014 assessment. Proximal to 7064, 70006, 70007. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69680, 69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70012	Dark Reflector	388552	5901962	A2	1.4	0.5	0.3	-	Slightly angular anomaly with a tapered shadow identified during the 2014 assessment on empty seabed. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
7050	Dark reflector	388578	5901760	A2	1.8	0.9	0.4	-	Feature identified during the 2009 geophysical assessment as a possible item of debris. Feature is reported as being a possible item of debris or boulder. Based on its description, the feature has been reclassified as a dark reflector.	DEP S to DEP N along Dudgeon	69680	-
7059	Dark Reflector	388963	5901712	A2	0.6	0.5	0.3	-	Distinct anomaly with a tapered shadow identified during the 2009 and 2014 assessments. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69680, 69682	-
7049	Debris	389428	5900810	A2	5.0	1.2	0.1	-	Feature identified during the 2009 geophysical assessment and interpreted as being a possible item of debris or disturbed sediment.	DEP S to DEP N along Dudgeon	69680	-
70019	Magnetic	390248	5900613	A2	-	-	-	40	Small but distinct anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70846	Magnetic	390226	5900535	A2	-	-	-	21	Small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70847	Magnetic	390249	5900516	A2	-	-	-	23	Small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70848	Magnetic	390309	5900480	A2	-	-	-	39	Small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70849	Debris	390440	5900425	A2	4.0	1.1	0.2	260	Feature was originally identified during the 2009 assessment as a possible item of debris (7062). During the 2014 assessment, the feature was identified again (70849) as two immediately adjacent, near parallel, distinct hard edged elongated dark reflectors measuring 2.0 x 0.3 x 0.1 m, with a defined rectangular shadow visible. The feature was seen to have a large associated magnetic contact indicating ferrous contact. Possible ferrous debris.	DEP S to DEP N along Dudgeon	69680, 69682	-
70850	Dark Reflector	390306	5900333	A2	1.8	1.0	0.3	-	Distinct angular anomaly isolated on a quiet seabed identified during the 2014 assessment. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
70851	Dark Reflector	390432	5900310	A2	1.2	0.9	0.3	-	Isolated angular anomaly with a defined tapered shadow identified during the 2014 assessment. Possible item of debris however has	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									the potential of being a natural feature.			
70880	Magnetic	390556	5900084	A2	-	-	-	75	A medium, distinct magnetic anomaly identified during the 2014 geophysical assessment (70880). Originally identified during the 2009 assessment as a small anomaly measuring 4 nT (7259) however the position and amplitude has been taken from the 2014 assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69680, 69682	-
70879	Debris	390707	5899962	A2	1.9	0.8	0.4	133	Elongated rectangular anomaly with a rectangular shadow identified during the 2014 assessment. Feature is reported as having a slight, oblong depression before it and curvilinear scour. Large associated magnetic contact. Possible ferrous debris.	DEP S to DEP N along Dudgeon	69682	-
70852	Magnetic	390963	5899958	A2	-	-	-	431	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
7236	Magnetic	390961	5899815	A2	-	-	-	17	A small magnetic anomaly identified during the 2009 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69680	-
70873	Magnetic	391061	5899603	A2	-	-	-	51	A medium, distinct magnetic anomaly identified during the 2014 geophysical assessment. Part of an area of	DEP S to DEP N	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									multiple anomalies. Possible ferrous debris which is either buried or has no surface expression.	along Dudgeon		
70874	Magnetic	391046	5899617	A2	-	-	-	125	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Part of an area of multiple anomalies. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70875	Magnetic	391049	5899630	A2	-	-	-	36	A small magnetic anomaly identified during the 2014 geophysical assessment. Part of an area of multiple anomalies. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70876	Magnetic	391038	5899633	A2	-	-	-	30	A small magnetic anomaly identified during the 2014 geophysical assessment. Part of an area of multiple anomalies. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70330	Magnetic	391190	5899834	A2	-	-	-	24	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70329	Magnetic	391252	5899857	A2	-	-	-	35	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70328	Magnetic	391285	5899840	A2	-	-	-	31	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70326	Magnetic	391410	5899691	A2	-	-	-	39	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70853	Dark Reflector	391350	5899643	A2	1.6	1.3	0.4	-	Distinct angular anomaly with a distinct hard edge and with a rectangular shadow with diffuse edges identified during the 2014 geophysical assessment. Located near similar anomaly, approximately 29 m SSW (70854). Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
70854	Dark Reflector	391356	5899670	A2	1.3	0.9	0.3	-	Angular anomaly with a distinct tapered shadow identified during the 2014 geophysical assessment. on a quiet seabed. Located approximately 29 m to the NNE of similar anomaly (70853). Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
70855	Magnetic	391393	5899598	A2	-	-	-	34	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70856	Dark Reflector	391507	5899564	A2	0.9	0.8	0.2	-	Slightly angular anomaly with a distinct tapered shadow identified during the 2014 geophysical assessment. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
7058	Debris	391546	5899608	A2	1.7	1.0	0.4	-	Distinct elongated anomaly with a clear tapered shadow on a quiet seabed. Identified during both the 2009 and 2014 geophysical assessments. Possible item of debris.	DEP S to DEP N along Dudgeon	69680, 69682	-
7046	Debris	391258	5899468	A2	3.2	0.4	0.2	-	A possible item of debris identified during the 2009 assessment. Feature wasn't identified in the geophysical data during the 2014 assessment and the feature was interpreted as possibly having been covered by sediment.	DEP S to DEP N along Dudgeon	69680, 69682	-
70870	Dark reflector	391295	5899297	A2	2.2	1.0	0.5	-	A distinct anomaly with tapered shadow identified during the 2014 assessment. This is located approximately 5 m south-east of an item of debris identified during the 2009 assessment. Based on the proximity, the features are likely the same and, as such, have been grouped together here. The measurements have been updates and the position has been taken from the 2014 assessment. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69680, 69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70871	Dark Reflector	391308	5899336	A2	1.1	0.7	0.3	-	Distinct triangular anomaly with a clear tapered shadow identified during the 2014 geophysical assessment. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
70872	Magnetic	391342	5899360	A2	-	-	-	308	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Part of an area of multiple anomalies. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70857	Dark Reflector	391541	5899474	A2	1.2	0.7	0.4	-	Distinct elongated anomaly a hard edge and tapered shadow identified during the 2014 geophysical assessment. Feature reported as being surrounded by similar, smaller anomalies. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
70858	Dark Reflector	391532	5899444	A2	1.1	0.8	0.1	-	Diffuse angular anomaly with a small shadow identified during the 2014 geophysical assessment. Feature reported as being surrounded by similar, smaller anomalies. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
70859	Dark Reflector	391529	5899432	A2	0.8	0.2	0.1	-	Slightly elongated anomaly with a distinct shadow showing some height variation identified during the 2014 geophysical assessment. Feature reported as being surrounded by similar, smaller anomalies. Possible	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									item of debris however has the potential of being a natural feature.			
70860	Debris	391485	5899453	A2	1.5	0.7	0.4	-	Irregular anomaly, partial semi-circle which appears slightly buried identified during the 2014 geophysical assessment. Distinct shadow visible showing some height variation. Possible item of debris.	DEP S to DEP N along Dudgeon	69682	-
70861	Debris	391471	5899411	A2	3.4	0.5	0.1	70	A diffuse rectangular elongated anomaly with a clear oblong shadow identified during the 2014 geophysical assessment. Associated with a medium magnetic contact. Possible ferrous debris.	DEP S to DEP N along Dudgeon	69682	-
7057	Debris	391771	5899459	A2	2.3	0.4	0.5	-	Distinct, hard edged anomaly with a defined triangular shadow and slight depression on a quiet seabed. Identified during the 2009 and 2014 geophysical assessment. Possible item of debris.	DEP S to DEP N along Dudgeon	69680, 69682	-
70323	Debris	391730	5899448	A2	53.0	0.3	0.1	-	Curvilinear dark reflector with a diffuse oblong shadow identified during the 2014 geophysical assessment. Joins anomaly 70324. Possible linear item of debris or rope or chain, however has the potential of being a seabed scar.	DEP S to DEP N along Dudgeon	69682	-
70324	Depression	391718	5899451	A2	5.0	2.1	0.3	-	Circular dark reflector with an associated bright reflector identified during the 2014 geophysical assessment. Proximal to linear feature 70323. Identified on the	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									multibeam bathymetry as a shallow depression. Possible partially buried debris item however has the potential of being an anchor pull up scar.			
70862	Magnetic	391666	5899378	A2	-	-	-	158	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Part of an area of multiple anomalies. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70863	Debris	391690	5899233	A2	1.4	1.1	0.6	-	Distinct anomaly with a clear elongated hard edge identified during the 2014 geophysical assessment. Defined tapered shadow visible. Possible item of debris.	DEP S to DEP N along Dudgeon	69682	-
7051	Dark reflector	391585	5899174	A2	1.1	0.2	0.2	-	Feature identified during the 2009 geophysical assessment. Feature is reported as being a possible item of debris or boulder and, as such, has been reclassified as a dark reflector. Feature was not identified during the 2014 geophysical assessment possibly due to being subsequently covered by sediment.	DEP S to DEP N along Dudgeon	69680, 69682	-
70867	Magnetic	391413	5899215	A2	-	-	-	298	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Part of an area of multiple anomalies. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70864	Dark Reflector	391476	5899172	A2	1.1	1.0	0.3	-	Diffuse, slightly elongated anomaly with a clear tapered shadow identified	DEP S to DEP N	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									during the 2014 geophysical assessment. Possible item of debris however has the potential of being a natural feature.	along Dudgeon		
70865	Dark Reflector	391472	5899176	A2	8.0	0.7	0.3	-	A diffuse anomaly with a surrounding depression with tapered shadow identified during the 2014 assessment. This is located approximately 2 m north-east of an item of debris identified during the 2009 assessment. Based on the proximity, the features are likely the same and, as such, have been grouped together here. The measurements have been updated and the position has been taken from the 2014 assessment. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69680, 69682	-
7052	Debris	391776	5899143	A2	1.9	0.9	0.5	-	Feature identified during the 2009 geophysical assessment and interpreted as being a possible item of debris.	DEP S to DEP N along Dudgeon	69680	-
70318	Magnetic	392014	5899223	A2	-	-	-	21	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70319	Magnetic	391990	5899207	A2	-	-	-	57	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70312	Magnetic	392347	5898995	A2	-	-	-	22	A small, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
70311	Magnetic	392416	5898920	A2	-	-	-	34	A small, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	DEP S to DEP N along Dudgeon	69682	-
7056	Seabed disturbance	393029	5898410	A2	3.5	0.3	0.2	-	Feature identified during the 2009 geophysical assessment and interpreted as being a possible seabed disturbance. Possibly contains debris items however may be a natural feature.	DEP S to DEP N along Dudgeon	69680	-
70258	Dark Reflector	394551	5897132	A2	8.3	0.2	0.2	-	A diffuse elongated dark reflector orientated perpendicular to the sediment trend identified during the 2014 geophysical assessment. Feature is reported as having an irregular shadow. Possible item of debris however has the potential of being a natural feature.	DEP S to DEP N along Dudgeon	69682	-
7124	Debris	379429	5887967	A2	20.2	0.2	0.1	-	Previously identified in the 2009 dataset as linear debris. The feature was not identified within the most recent dataset. It is possible that this is due to burial by mobile sediments and, as such, the feature has been retained as potential archaeology based on the previous interpretation.	Through SEP along Sheringham Shoal	61035, 233450	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
72640	Debris field	380064	5887128	A2	16.9	7.1	0.5	-	Identified in the most recent SSS dataset as a group of very small dark reflectors with bright shadows. No corresponding MBES contacts and not covered by magnetometer data and, as such, it is not possible to confirm whether the feature is comprised ferrous material. Possible debris field.	Through SEP along Sheringham Shoal	233450	-
72632	Magnetic	382479	5884311	A2	-	-	-	21	Identified in the most recent Mag. dataset as a small, broad dipole. No corresponding SSS or MBES contacts. Possible ferrous debris either buried or with no surface expression.	Straight through SEP	233450	-
72593	Debris field	382823	5884249	A2	27.1	22.8	0.5	-	Identified in the most recent SSS dataset as a large spread of dark reflectors with shadows, comprising small rounded objects and more elongated features, situated on a featureless area of the seabed. In the MBES data this is visible as an area of small mounds within a depression. There are five clear separate mounds, the largest measures 2.3 x 2.2 x 0.1 m. The depression extends to the south and appears angular and not easily definable. No corresponding magnetic response. Possible non-ferrous debris field.	Straight through SEP	233450	-
72596	Wreck	382091	5886033	A1	36.4	15.6	0.5	-	Identified in the most recent SSS dataset, as a distinct oval outline which is pointed at one end and slightly flattened at the other,	Straight through SEP	233450	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									interpreted as being a possible wreck. Feature is orientated north-west to south-east, and is situated on a featureless area of seabed. The possible hull appears intact on one side and slightly more degraded on the other. If a wreck, it may be partially buried or, upside down as there is very little internal detail visible. In the MBES data the feature is visible as a sub-rounded linear mound. The outline of the hull is distinct, however, there is no clear internal structure visible. The north-east side of the wreck has some sediment accumulation along it. The north-west end is rounded and whilst distinct, has no clear edges unlike the south-east end. Not directly covered by magnetometer data and, as such, it is not possible to confirm whether the feature comprises ferrous material, although if it were, it would be expected to have been picked up by the nearest survey lines given its size, suggesting it may be largely non-ferrous in its construction. Feature has no corresponding UKHO record. Possible debris however had the potential of being a previously uncharted wreck.			
72546	Debris field	381779	5887533	A2	10.3	7.5	0.9	-	Identified in the most recent SSS dataset as a group of small dark reflectors, a cluster of approximately three objects with a very bright,	Straight through SEP	233450	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									uneven shadows and a rounded dark reflector with a shadow close to this. The feature looks anomalous to the surrounding seabed. In the MBES data this is visible as curved, elongate mound directly next to a smaller, rounded mound, situated at the north-east edge of an area of sand waves. No corresponding magnetic response; however the feature isn't directly covered by a line of magnetometer data. Possible debris field.			
72683	Dark reflector	381738	5891245	A2	4.5	1.7	0.7	-	Identified in the most recent SSS dataset as a rounded dark reflector with a bright pointed shadow. This has variable reflectivity and appears unusual, particularly within the clear even seabed. It is visible in the MBES dataset as an uneven rounded mound with a possible secondary segment on the east side. No corresponding Mag. contact. Possible non-ferrous debris however has the potential of being a natural feature.	Around SEP	233450	-
70653	Magnetic	383995	5884003	A2	-	-	-	51	A medium magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70651	Magnetic	384172	5884371	A2	-	-	-	50	A medium magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris	Around SEP	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
									which is either buried or has no surface expression.			
70645	Magnetic	384110	5884522	A2	-	-	-	495	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70646	Magnetic	384151	5884523	A2	-	-	-	83	A medium, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70647	Magnetic	384228	5884503	A2	-	-	-	166	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70648	Magnetic	384264	5884448	A2	-	-	-	62	A medium, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70807	Debris	384722	5885456	A2	2.5	2.4	0.6	158	Hard edged partially buried dark reflector anomaly with an internal bright reflector and distinct shadow identified during the 2014 geophysical assessment. Hard edged anomaly, isolated and distinct in a sandy part of the seabed. Distinct associated magnetic anomaly. Possible ferrous debris.	Around SEP	69682	-

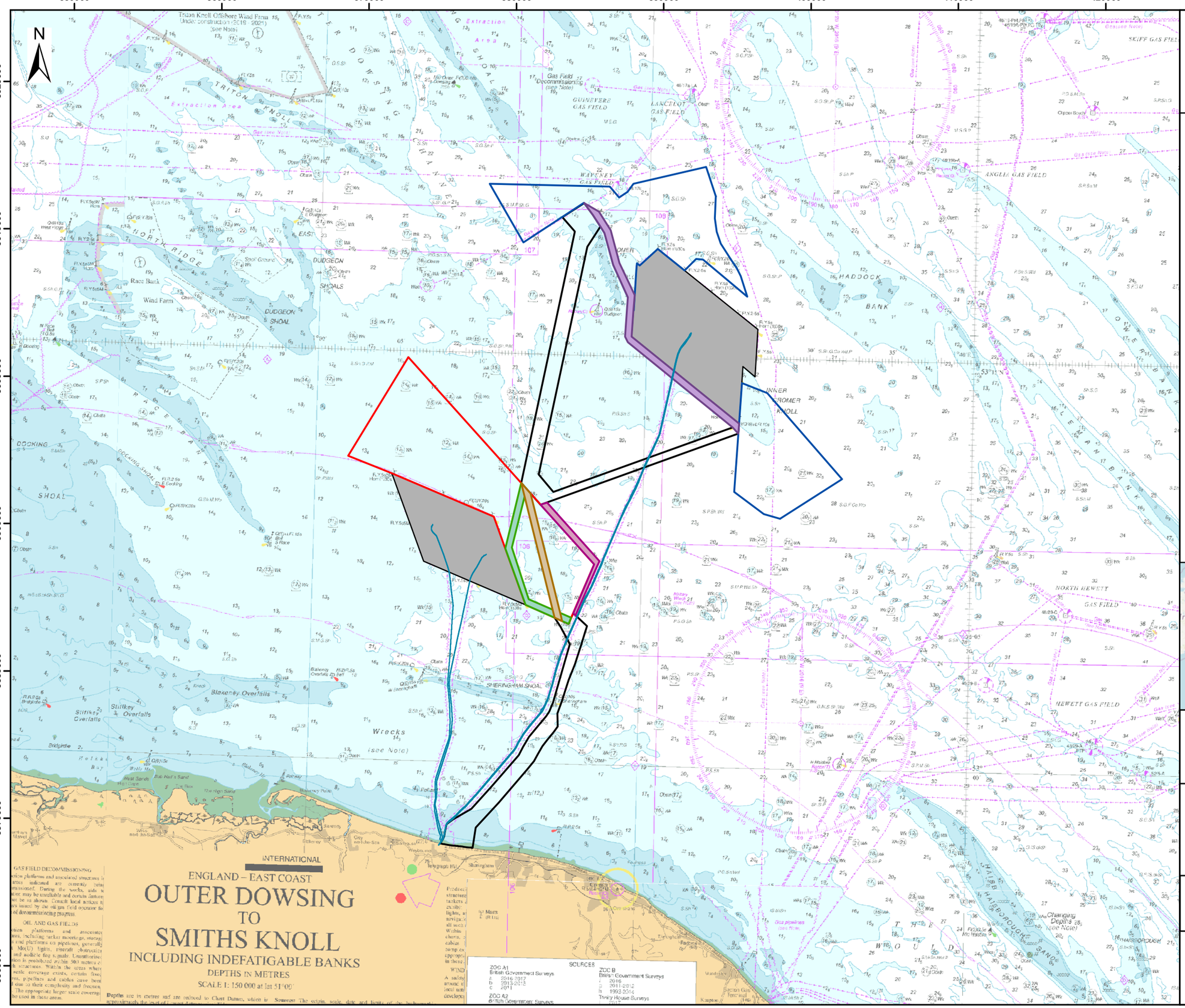
ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70640	Magnetic	384768	5885694	A2	-	-	-	50	A medium, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70641	Magnetic	384642	5885547	A2	-	-	-	40	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70637	Magnetic	385080	5886312	A2	-	-	-	30	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70634	Magnetic	385074	5886438	A2	-	-	-	129	A large, distinct magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70633	Magnetic	385139	5886653	A2	-	-	-	33	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70810	Debris	385150	5886540	A2	2.4	0.4	0.3	-	Irregular shaped linear hard-edged dark reflector anomaly with a bright shadow and in a slight depression identified during the 2014 geophysical assessment. Possible debris remains, isolated and distinct on a flat and even part of the seabed.	Around SEP	69682	-

ID	Classification	Easting	Northing	Archaeological discrimination	Length (m)	Width (m)	Height (m)	Magnetic Amplitude (nT)	Description	Area	Wessex Archaeology Report ref.	External references
70632	Magnetic	385081	5886778	A2	-	-	-	38	A small magnetic anomaly identified during the 2014 geophysical assessment. Possible ferrous debris which is either buried or has no surface expression.	Around SEP	69682	-
70818	Rope/chain	385507	5887246	A2	19.4	1.4	0.3	249	Diffuse looking long and thin linear dark reflector with a faint shadow extending from a dark, thin, 'hook' like dark reflector with a bright shadow identified during the 2014 geophysical assessment. Corresponds with a large magnetic anomaly. Possible length of rope or chain with an associated ferrous item of debris, possibly an anchor.	Around SEP	69682	-

1. Co-ordinates are in WGS84 UTM31N
2. Positional accuracy estimated ±10 m

Sheringham and Dudgeon Extension Projects

Figure 1
Location of Additional Offshore Export Cable Corridor Options



Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

Data Sources: n/a

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 7.5 15 km

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Report:

Dudgeon and Sheringham Offshore Wind Farm Extensions
Archaeological Assessment of Geophysical Data
Addendum

Royal HaskoningDHV
Enhancing Society Together

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Sheringham and Dudgeon Extension Projects

Figure 2.01

Palaeogeographic features of archaeological potential

Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

- No SBP coverage

Palaeogeographic features

- Channel
- Complex cut and fill
- High amplitude reflector
- Simple cut and fill
- Shallow horizontal reflector

Data Sources: Wessex Archaeology

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 1.5 3 km

0 0.85 1.7 Miles

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Report:

Dudgeon and Sheringham Offshore Wind Farm Extensions Archaeological Assessment of Geophysical Data Addendum

Royal HaskoningDHV
Enhancing Society Together

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Sheringham and Dudgeon Extension Projects

Figure 2.02

Palaeogeographic features of archaeological potential

Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

- No SBP coverage

Palaeogeographic features

- Channel
- Complex cut and fill
- High amplitude reflector
- Simple cut and fill
- Shallow horizontal reflector

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 1.5 3 km

0 0.85 1.7 Miles

A	17/08/2020	1:50,000	A3	KF	MM	TM
REV	DATE	SCALE	SIZE	DRW	CHK	APR

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Addendum

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Sheringham and Dudgeon Extension Projects

Figure 2.03

Palaeogeographic features of archaeological potential

Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

- No SBP coverage

Palaeogeographic features

- Channel
- Complex cut and fill
- High amplitude reflector
- Simple cut and fill
- Shallow horizontal reflector

Data Sources: Wessex Archaeology

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 1.5 3 km

0 0.85 1.7 Miles

A	17/08/2020	1:50,000	A3	KF	MM	TM
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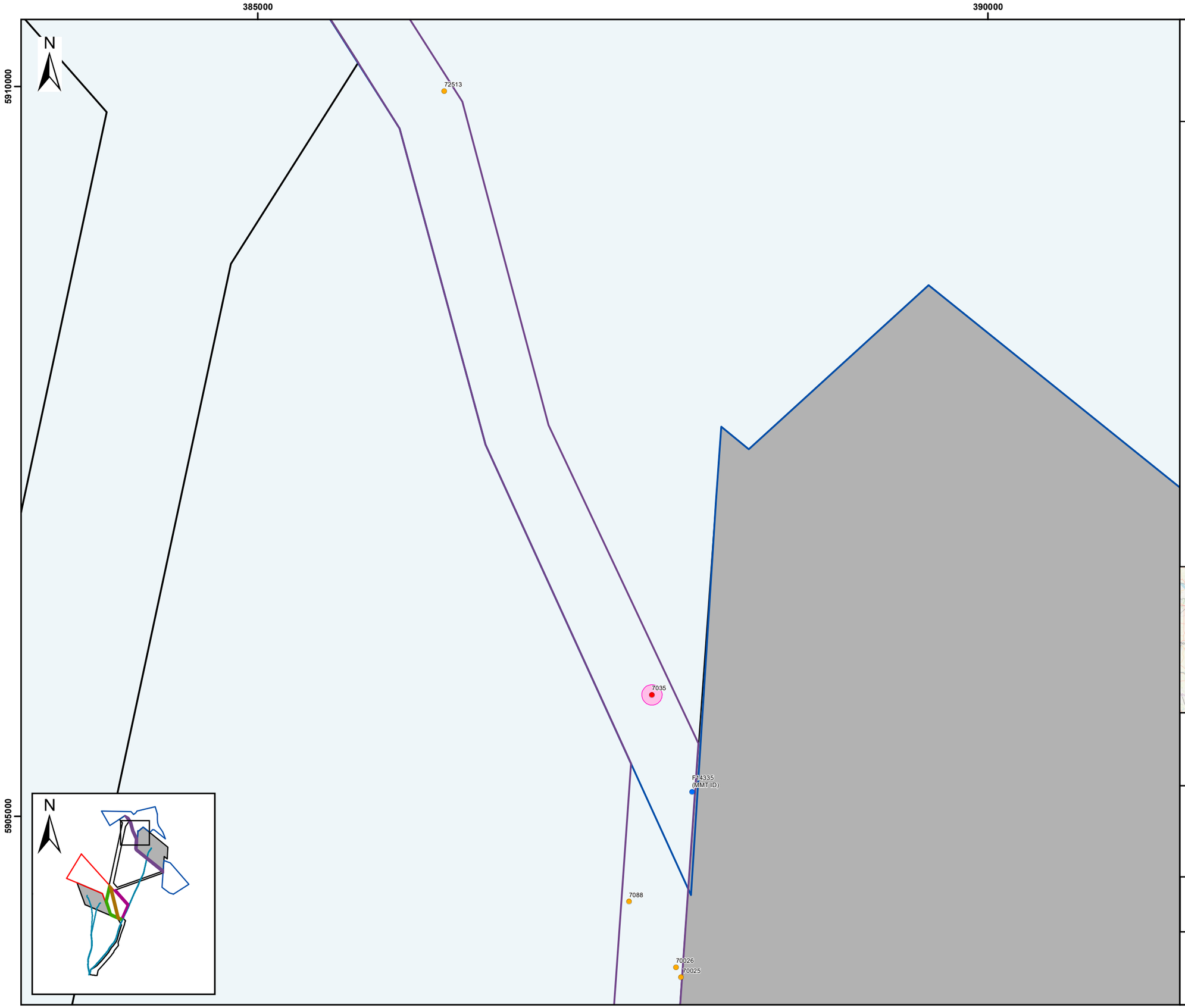

Sheringham and Dudgeon Extension Projects

Figure 3.01

Seabed features of archaeological potential

Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

- No geophysical coverage
- SSS and MBES data only
- Recommended Archaeological Exclusion Zones (AEZs)
- Seabed feature extents
- A1 – Anthropogenic origin of archaeological interest
- A2 – Uncertain origin of possible archaeological interest
- Wooden Debris

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 0.75 1.5 km

0 0.4 0.8 Miles

A	17/08/2020	1:25,000	A3	KF	MM	TM
REV	DATE	SCALE	SIZE	DRW	CHK	APR

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Sheringham and Dudgeon Extension Projects

Figure 3.02

Seabed features of archaeological potential

Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

- No geophysical coverage
- SSS and MBES data only
- Recommended Archaeological Exclusion Zones (AEZs)
- Seabed feature extents
- A1 – Anthropogenic origin of archaeological interest
- A2 – Uncertain origin of possible archaeological interest
- Wooden Debris

Data Sources: Wessex Archaeology

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 0.75 1.5 km

0 0.4 0.8 Miles

A	17/08/2020	1:25,000	A3	KF	MM	TM
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Sheringham and Dudgeon Extension Projects

Figure 3.03

Seabed features of archaeological potential

Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

- No geophysical coverage
- SSS and MBES data only
- Recommended Archaeological Exclusion Zones (AEZs)
- Seabed feature extents
- A1 – Anthropogenic origin of archaeological interest
- A2 – Uncertain origin of possible archaeological interest
- Wooden Debris

Data Sources: Wessex Archaeology

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 0.75 1.5 km

0 0.4 0.8 Miles

A	17/08/2020	1:25,000	A3	KF	MM	TM
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Sheringham and Dudgeon Extension Projects

Figure 3.04

Seabed features of archaeological potential

Legend:

- Dudgeon Extension Project AfL Area
- Sheringham Extension Project AfL Area
- Offshore Cable Corridor
- Existing Offshore Wind Farm Export Cable
- Existing Offshore Wind Farm

Offshore Export Cable Corridor Options

- Around SEP
- DEP S to DEP N along Dudgeon
- Straight through SEP
- Through SEP along Sheringham Shoal

- No geophysical coverage
- SSS and MBES data only
- Recommended Archaeological Exclusion Zones (AEZs)
- Seabed feature extents
- A1 – Anthropogenic origin of archaeological interest
- A2 – Uncertain origin of possible archaeological interest
- Wooden Debris

Data Sources: Wessex Archaeology

Document No: PB8164-RHD-ZZ-OF-DR-Z-0085

Co-ordinate System: WGS 1984 UTM Zone 31N

0 0.75 1.5 km

0 0.4 0.8 Miles

A	17/08/2020	1:25,000	A3	KF	MM	TM
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