FIVE ESTUARIES OFFSHORE WIND FARM

ENVIRONMENTAL STATEMENT

VOLUME 6, PART 5, ANNEX 2.4: MAIN ARRAY AND EXPORT CABLE ROUTE – ENVIRONMENTAL FEATURES REPORT

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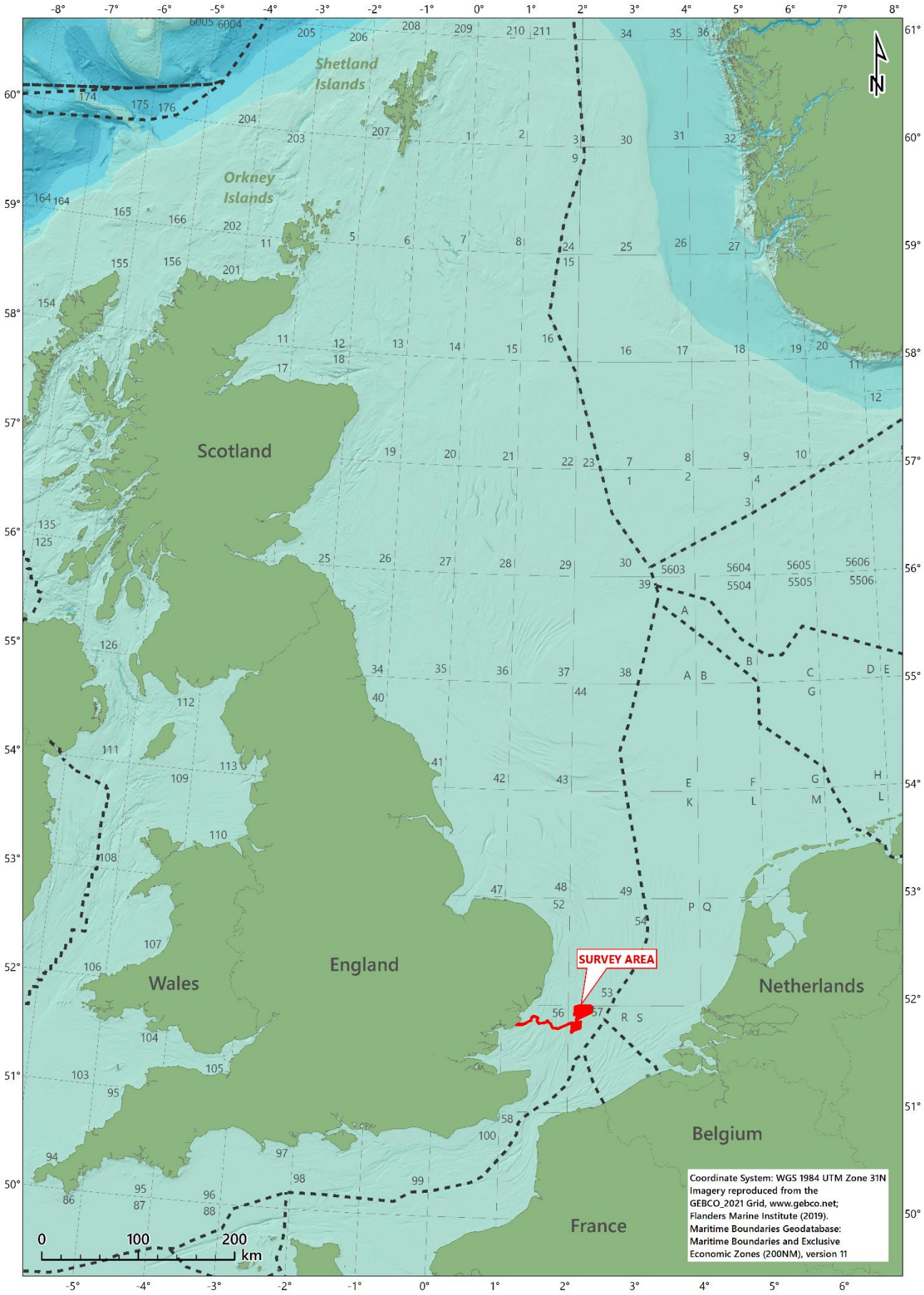
Frontispiece



Executive Summary

Introduction

On the instruction of Five Estuaries Offshore Wind Farm Limited, Fugro performed a benthic site characterisation survey at the Five Estuaries Offshore Wind Farm (OWF) development area. The main array (comprising north and south arrays) was located approximately 50 km off the east coast of England and adjacent to the existing Galloper OWF. The cable landfall site is located between Holland-on-Sea and Frinton-on-Sea, Essex. Operations were conducted using the MV Marshall Art during the survey period 7 to 16 November 2021.

Survey Strategy

The main objectives of the survey were to establish the presence of any sensitive habitats across the development area, specifically those listed as Annex I and Oslo and Paris Commission (OSPAR) habitats, and to establish the physico-chemical and biological properties of the sediment at key locations. The environmental survey strategy was based on an initial review of publicly available regional data, and aligned with the approach agreed with Natural England, the Marine Management Organisation and Cefas.

A total of 64 environmental sediment sampling stations were proposed: 17 stations within the main arrays and interconnector route and 47 stations within the export cable route corridor. At each environmental sampling station, one macrofaunal and one particle size distribution (PSD) sample were to be acquired. Sediment chemistry samples were to be acquired at 12 of the sampling stations, targeting areas with the greatest predicted mud content. A total of 20 environmental video stations were proposed: 6 drop-down video (DDV) samples of hard/coarse substrate and 14 transects in areas of conservation focus were proposed with locations determined after a review of the geophysical data.

Three stations (FE6_05, FE7d_02 and FE7f_02) failed to acquire a macrofauna and PSD sample due to potential hard seabed substrata, and one station (FE6_11) failed to acquire a sediment chemistry sample after three attempted samples. Photographic stills and video data were acquired at all proposed locations. The underwater visibility at the shallowest locations was poor due to local environmental conditions, resulting in eight locations being re-run.

Seabed Habitats

Habitats were variable across the survey area with six distinct biotope complexes/biotopes assigned ‘Piddocks with sparse associated fauna in sublittoral very soft chalk or clay (A4.231)’; ‘Circalittoral coarse sediment (A5.14)’; ‘Infralittoral mixed sediment (A5.43)’; ‘Circalittoral mixed sediment (A5.44)’; ‘*Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment’ (A5.445) and ‘*Sabellaria spinulosa* on stable circalittoral mixed sediment (A5.611)’. One broad habitat ‘Sublittoral sediment’ (A.5), one habitat ‘Sublittoral sand’ (A5.2) were also assigned. Following the analysis of the macrofaunal and particle size distribution samples, these biotope complexes/biotopes will be further refined.

Potentially Sensitive Habitats or Species

Three potentially sensitive habitats occurred within the survey area.

Stony reef areas with low potential to qualify as Annex I geogenic reef habitat were identified from three stations (FE4_01, FE4_03 and FE4_04) in the eastern offshore extents of the export cable route.

The United Kingdom Biodiversity Action Plan (UK BAP) listed priority habitat 'Peat and clay exposures with piddocks' occurred patchily at five stations, one within the north array and four within the eastern offshore extents of the export cable route.

The priority habitat and Marine Conservation Zone (MCZ) Habitat Feature of Conservation Interest (FOCI) 'Subtidal sands and gravels' was identified at one station (FE1_04) in the north array.

No other potentially sensitive habitats or species were identified within the survey area.

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Abbreviations

BSH	Broad-scale habitat
BSL	Below sea level
CBD	Convention on Biological Diversity
CM	Central meridian
DDV	Drop-down video
DG	Day grab
EC	European Commission
ECC	Export cable route corridor
ECR	Export cable route
EEA	European Environment Agency
EMODnet	European Marine Observation and Data Network
EOL	End of line
EPSG	European Petroleum Survey Group
EUNIS	European Nature Information System
FA	Fauna sample A
FOCI	Feature of Conservation Interest
GPS	Global Positioning System
HD	High definition
HG	Hamon grab
JNCC	Joint Nature Conservation Committee
LAT	Lowest Astronomical Tide
LED	Light emitting diode

MCZ	Marine Conservation Zone
MPA	Marine Protected Area
MV	Motor vessel
NERC	Natural Environment and Rural Communities
NS	No sample
NT	Not triggered
OSPAR	Oslo and Paris Commission
OWF	Offshore Wind Farm
PSD	Particle size distribution
SAC	Special Area of Conservation
SC	Sediment chemistry sample
SOL	Start of line
SPA	Special Protection Area
SSS	Side scan sonar
UKBAP	United Kingdom Biodiversity Action Plan
UTC	Coordinated Universal Time
UTM	Universal Transverse Mercator
WGS 84	World Geodetic System 1984
?	Identification is uncertain

Document Arrangement

Fugro - Mobilisation and Calibration Report - Fugro Mercator
Fugro - Mobilisation and Calibration Report - Fugro Seeker
Fugro - Mobilisation Report – Marshall Art
Fugro - WPM1 & WPM2 - Acquisition / Operations Report - Fugro Mercator
Fugro - WPM3 - Acquisition / Operations Report - Fugro Seeker
Fugro - WPM1, WPM2 & WPM3 - Acquisition / Operations Report - Marshall Art
Fugro - WPM1 & WPM2 - Processing Report - Fugro Mercator
Fugro - WPM3 - Processing Report - Fugro Seeker
Fugro - WPM1 - Main Array - Seafloor and Shallow Geological Results Report
Fugro - WPM2 & WPM3 - ECR - Seafloor and Shallow Geological Results Report
Fugro - WPM1, WPM2 & WPM3 - Main Array & ECR - Environmental Features Report
Fugro - WPM1, WPM2 & WPM3 - Main Array & ECR - Benthic Ecology Monitoring Report

1. Introduction

1.1 General Project Description

On the instruction of Five Estuaries Offshore Wind Farm Limited, Fugro performed a benthic site characterisation survey at the Five Estuaries Offshore Wind Farm (OWF) development area. The main array (comprising north and south arrays) site was located approximately 50 km off the east coast of England and adjacent to the existing Galloper OWF, with the cable landing site located between Holland-on-Sea and Frinton-on-Sea, Essex (Figure 1.1). Operations were conducted using the MV Marshall Art during the survey period 7 to 16 November 2021.

The benthic site characterisation survey was carried out to inform the Environmental Impact Assessment for the Five Estuaries OWF development, with the survey strategy aligned with the approach agreed with Natural England, the Marine Management Organisation and Cefas. The proposed development comprised a north array, south array, an array interconnector and an export cable route (ECR).

Appendix A outlines the guidelines for use of this report.

1.2 Scope of Work

1.2.1 Geophysical Survey

Geophysical survey data acquisition was conducted in the north array, south array, interconnector route and export cable route corridor (ECC). The geophysical data were utilised in the refinement of the environmental survey design.

1.2.2 Environmental Survey

The environmental survey was conducted to characterise the benthic habitats and species within the survey area and to establish whether any sensitive habitats were present in the area, specifically habitats listed under Annex I of the EU Habitats Directive and habitats listed by the Oslo and Paris Commission (OSPAR) as threatened and/or declining habitats (OSPAR, 2008), by the means of drop-down video (DDV) at each location. In addition, grab samples were collected to establish physico-chemical and biological properties of the sediment at key locations and will be presented in the benthic ecology monitoring report.

This report details the results of the environmental features assessment.

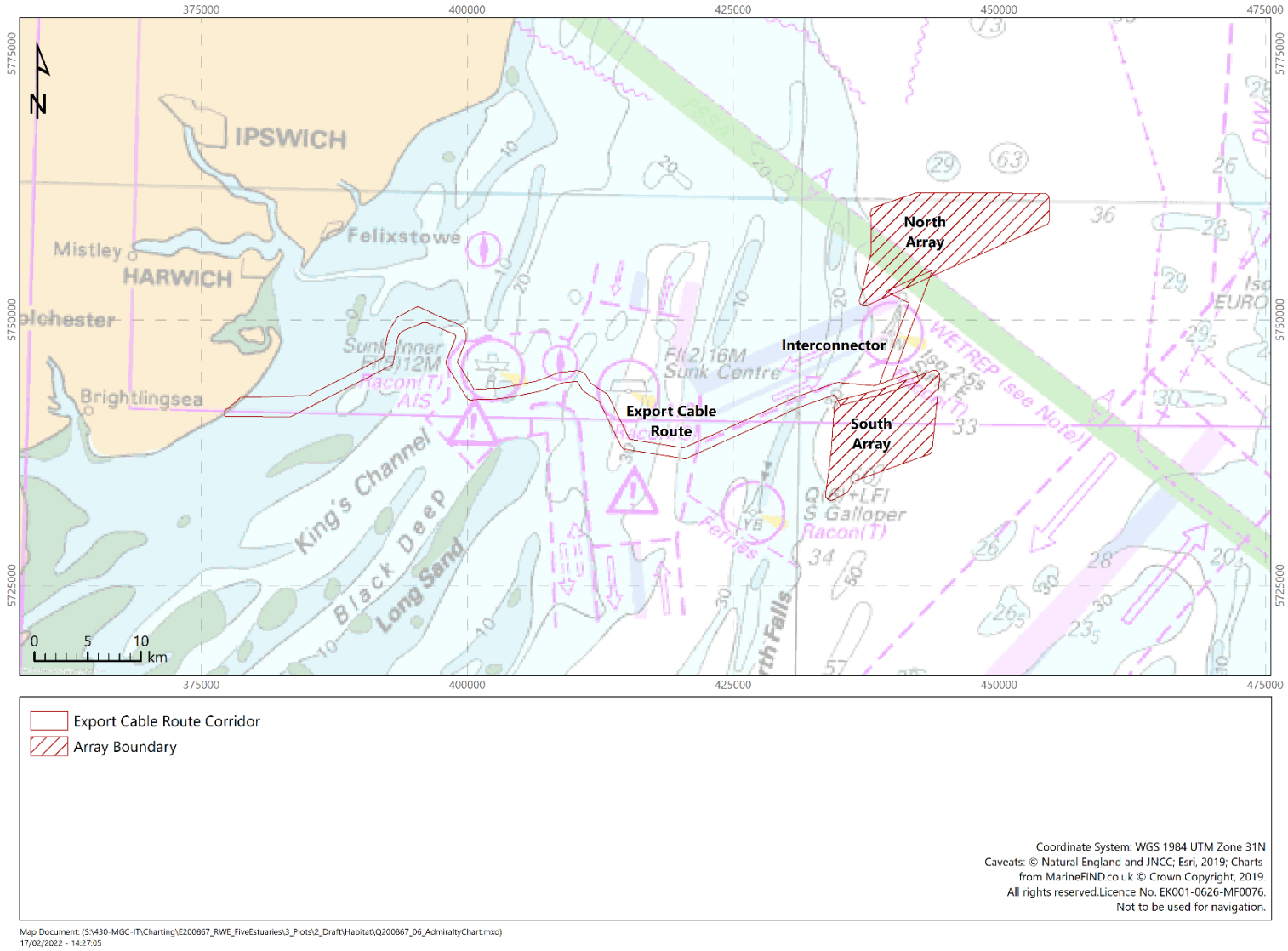


Figure 1.1: Five Estuaries Offshore Wind Farm development area

1.3 Environmental Legislation

Following the UK exit from the European Union, several changes have been implemented to the Habitats (Conservation of Habitats and Species Regulations 2017) and the Offshore (Offshore Marine Conservation (Natural Habitats &c.) Regulations 2017, referred to as the 2017 Regulations. The changes have been made via the Conservation of Habitats and Species (Amendment (EU Exit) Regulations 2019), referred to as the 2019 Regulations. The 2017 Regulations transposed the requirements of the EU Habitats Directive and certain elements of the Wild Birds Directive (known as the Nature Directives), into UK law (Gov.UK, 2021).

Most of these changes have involved transferring functions from the European Commission (EC) to the appropriate authorities in the UK, with all other processes or terms in the Habitats and Offshore Regulations remaining unchanged and existing guidance being still relevant (Gov.UK, 2021).

Amongst the changes to the 2017 Regulations is the creation of a 'national site network' within the UK territory, comprising the protected sites already designated under the Nature Directives (previously known as Natura 2000) and any further sites designated under these Regulations. Protected sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Maintaining a coherent network of protected sites with conservation objectives is still required to fulfil the UK's commitment to maintain environmental protections and continue to meet international legal obligations, such as the Bern Convention, the OSPAR Convention, the Bonn Convention, the Ramsar Convention and the Convention on Biological Diversity (CBD; Gov.UK, 2021).

The Marine and Coastal Access Act 2009 relates to the management of the marine environment, providing a planning framework for marine development. The Act enables the creation of Marine Protected Areas (MPAs) for nationally and regionally important marine features including broad-scale habitats (BSH) and features of conservation interest (FOCI). Broad-scale habitats represents the main types of seabed and associated biota in UK waters; protection of each habitat and biota, ensure protection of the full range of marine biodiversity. As such, MPAs include the range of marine wildlife, not just rare or threatened features, whereas FOCI represent habitats and/or species that may be highly sensitive to human activities and therefore need protection (Joint Nature Conservation Committee [JNCC], 2016).

The UK Biodiversity Action Plan (UKBAP), superseded by the UK Post-2010 Biodiversity Framework, produced a list of important (priority) habitats and species for the protection of the UK's biodiversity, under the CBD. In England, the Framework is legislated under the Natural Environment and Rural Communities (NERC) Act 2006.

This habitat investigation assesses the possible presence of marine Annex I habitats afforded protection under SACs, as well as PMFs, OSPAR threatened and/or declining species and habitats, and priority habitats and species for which Marine Protected Areas may be designated.

1.4 Regional Habitats and Protected Areas

Based on the European Marine Observation and Data Network (EMODnet) seabed habitats map, the Five Estuaries OWF and ECR are located in an area likely to comprise the European Nature Information System (EUNIS) habitats 'Circalittoral coarse sediment' (A5.14), 'Deep circalittoral coarse sediment' (A5.15), 'Circalittoral fine sand' (A5.25)', Circalittoral muddy sand' (A5.26), 'Deep circalittoral sand' (A5.27), 'Circalittoral sandy mud' (A5.35), 'Circalittoral mixed sediment' (A5.44) and 'Deep circalittoral mixed sediments' (A5.45) (Figure 1.2; EMODnet, 2019).

Table 1.1 lists the nearby relevant protected areas within 15 km of the survey area, summarising the protected or habitats and species of conservation importance for which they were designated to protect. Figure 1.3 spatially displays the protected areas in relation to the Five Estuaries OWF and ECC survey area. The survey area also overlaps the southern North Sea SAC, which is designated for the Harbour porpoise *Phocoena phocoena*, which is an Annex II species.

Table 1.1: Summary of nearby protected areas

Protected Area	Status	Distance* [km]	Direction*	Protected Habitats/Species
Margate and Long Sands	Special Area of Conservation	0	ECR passes through	'Sandbanks which are slightly covered by sea water all the time'
Outer Thames Estuary	Special Protected Area	0	ECR passes through	Red-throated diver (*Gavia stellata*) Common tern (*Sterna hirundo*) Little tern (*Sternula albifrons*)
Hamford Water	Special Protected Area	3	N	Little tern (*Sternula albifrons*) Avocet (*Recurvirostra avosetta*) Dark bellied brent goose (*Branta bernicla bernicla*) Shelduck (*Tadorna tadorna*) Teal (*Anas crecca*) Ringed plover (*Charadrius hiaticula*) Grey plover (*Pluvialis squatarola*) Black-tailed godwit (*Limosa limosa*) Redshank (*Tringa totanus*)
Kentish Knock East	Marine Conservation Zone	8	S	'Subtidal coarse sediment' 'Subtidal sand' 'Subtidal mixed sediments'
Blackwater, Crouch, Roach and Colne Estuary	Marine Conservation Zone	5.5	SW	'Intertidal mixed sediments' 'Native oyster (*Ostrea edulis*) beds' 'Native oyster (*Ostrea edulis*)'

Protected Area	Status	Distance* [km]	Direction*	Protected Habitats/Species
Colne Estuary	Special Protected Area	10	SW	Little tern (*Sternula albifrons*) Common pochard (*Aythya farina*) Dark bellied brent goose (*Branta bernicla bernicla*) Hen harrier (*Circus cyaneus*) Ringed plover (*Charadrius hiaticula*) Redshank (*Tringa totanus*)
Orford Inshore	Marine Conservation Zone	13	NW	'Subtidal mixed sediments'
Deben Estuary	Special Protected Area	13	N	Avocet (*Recurvirostra avosetta*) Dark bellied brent goose (*Branta bernicla bernicla*)
Essex Estuaries	Special Area of Conservation	14	SW	'Estuaries' 'Mudflats and sandflats not covered by seawater at low tide' 'Salicornia and other annuals colonising mud and sand' 'Spartina swards (Spartinion maritimae' 'Atlantic salt meadows (Glauco-Puccinellietalia maritimae)' 'Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)'
Stour and Orwell Estuaries	Special Protected Area	14	W	Hen harrier (*Circus cyaneus*) Black-tailed godwit (*Limosa limosa islandica*) Dunlin (*Calidris alpina alpina*) Grey plover (*Pluvialis squatarola*) Pintail (*Anas acuta*) Redshank (*Tringa totanus*) Ringed plover (*Charadrius hiaticula*) Shelduck (*Tadorna tadorna*) Turnstone (*Arenaria interpres*)
Alde-Ore Estuary	Special Protected Area	14	N	Avocet (*Recurvirostra avosetta*) Lesser black-backed gull (*Lucus fuscus*) Little tern (*Sternula albifrons*) Marsh harrier (*Circus aeruginosus*) Redshank (*Tringa totanus*) Ruff (*Philomachus pugnax*) Sandwich Tern (*Sterna sandivicensis*)

Notes
* = Distance and direction from closest sampling site
ECR = Export cable route

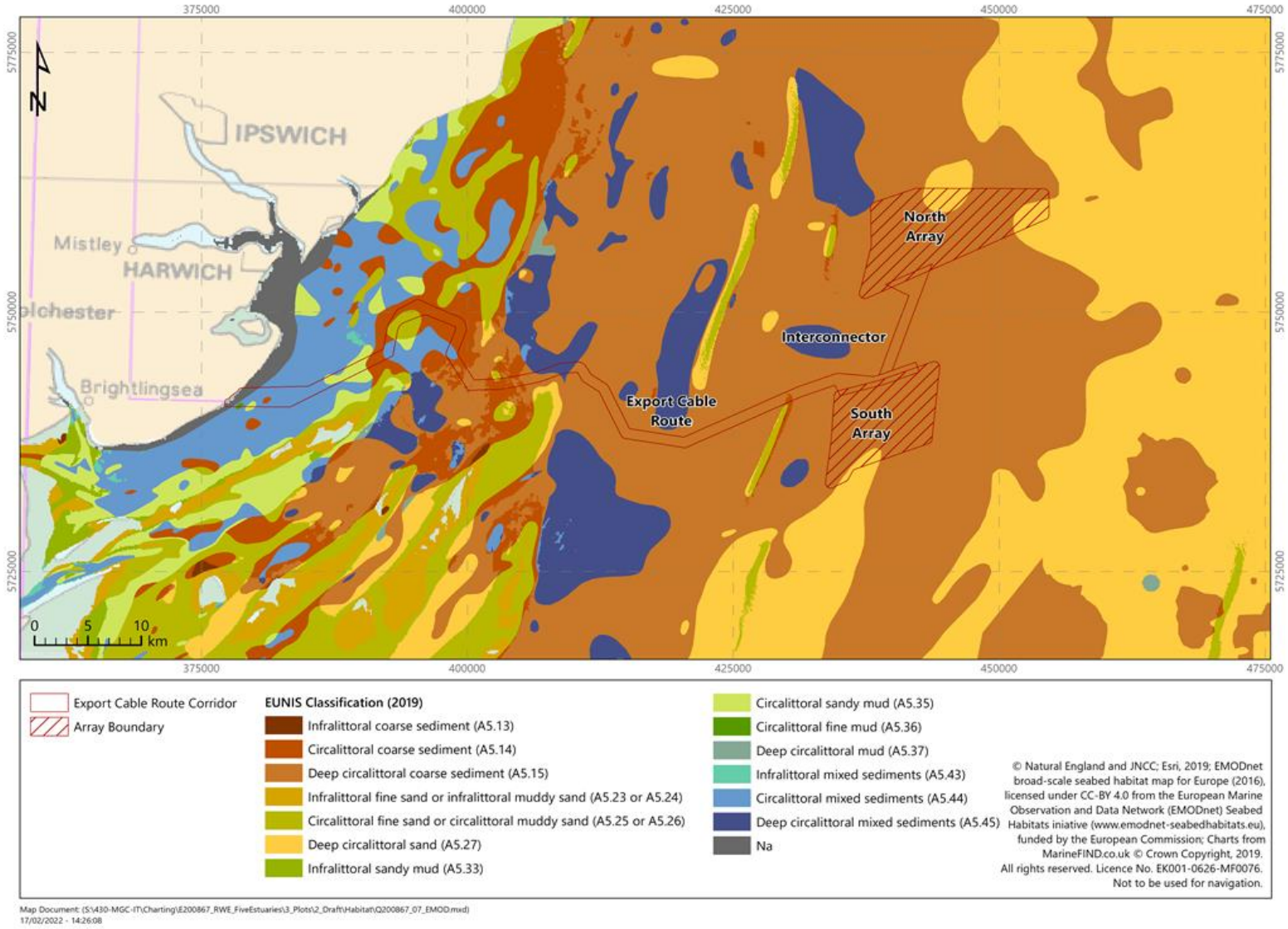


Figure 1.2: EMODnet seabed habitats in relation to the survey area

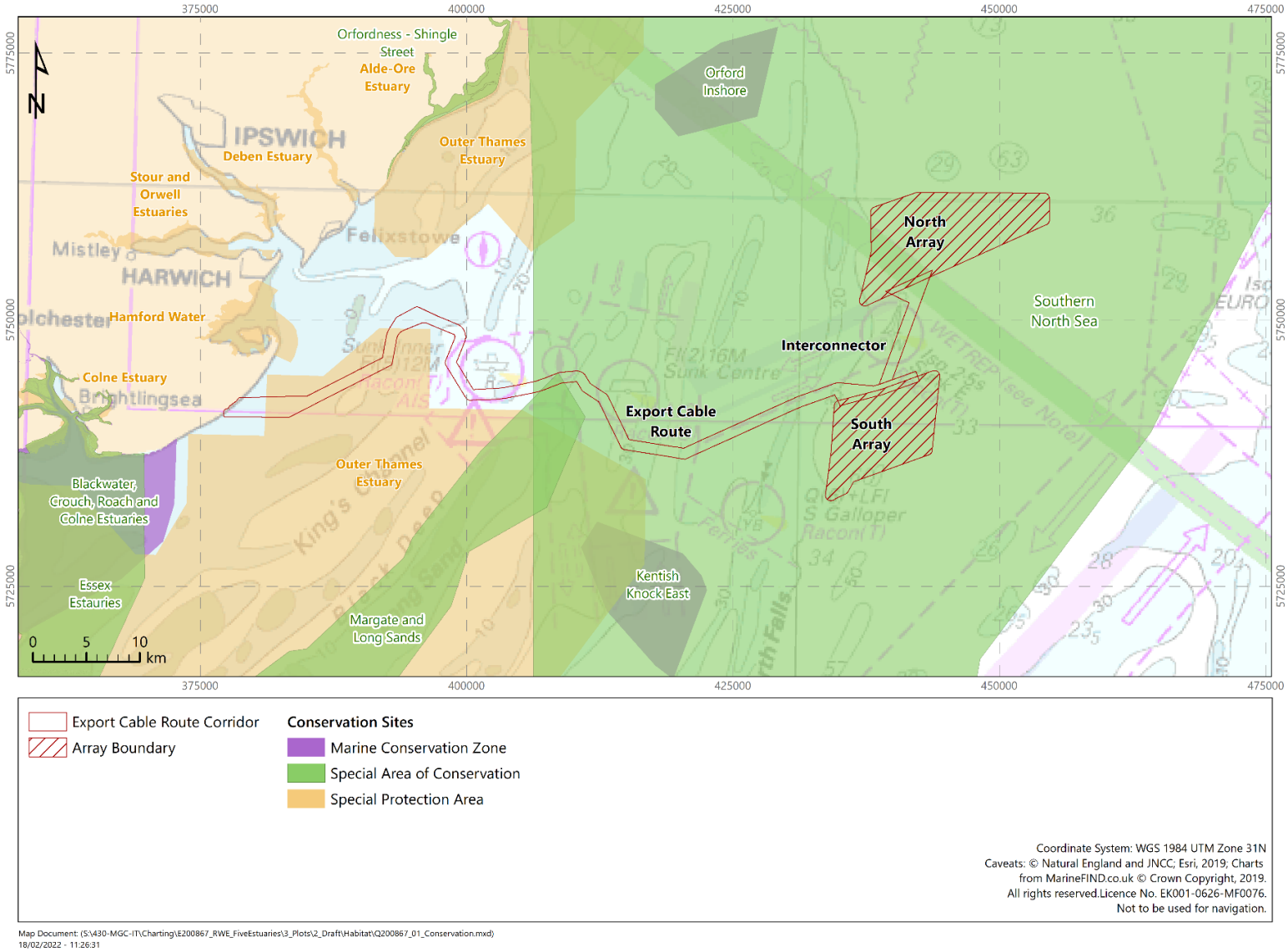


Figure 1.3: Protected areas relevant to the survey area

1.5 Coordinate Reference System

All coordinates detailed in this report are referenced to World Geodetic System 1984 (WGS 84), Universal Transverse Mercator (UTM) projection Zone 31N central meridian 3° East (CM 3° E). Table 1.2 provides the detailed geodetic and projection parameters.

Table 1.2: Project geodetic and projection parameters

Global Navigation Satellite System (GNSS) Geodetic Parameters	
Datum:	World Geodetic System 1984 (WGS 84)
Spheroid:	World Geodetic System 1984
Semi major axis:	a = 6 378 137.000 m
Reciprocal flattening:	1/f = 298.257 223 563
Project Projection Parameters	
Grid Projection:	Universal Transverse Mercator (UTM)
UTM Zone:	31N (EPSG: 32631)
Central Meridian:	3° E
Longitude of Origin	003° 00′ 00″ East
Latitude of Origin:	00° 00′ 00″ North
False Easting:	500 000 m
False Northing:	0 m
Scale factor on Central Meridian:	0.9996
Units:	metre
Notes EPSG = European Petroleum Survey Group	

2. Survey Strategy

2.1 Geophysical Data

The geophysical scope of work comprised acquisition of data within the north array, south array, along the array interconnector route and export cable route corridor. Geophysical data were acquired using a multibeam echosounder, side scan sonar (SSS), sub-bottom profiler, single magnetometer and single-channel sparker. Infill surveys ensured 100 % coverage of the main arrays, interconnector and ECC. Gaps in the SSS data presented within this report is due to continuing analysis.

Further details can be found in the geophysical operations reports (Fugro, 2021a; 2022).

2.2 Habitat Assessment

2.2.1 Rationale

The environmental survey strategy was based on an initial review of publicly available regional data, and aligned with the approach agreed with Natural England, the Marine Management Organisation and Cefas. These sample locations were further refined based on the findings of the geophysical survey. Additional stations/transects were selected after a review of the SSS and bathymetric data, with particular emphasis on locating areas of potential conservation value (e.g. Annex I listed habitats), boundaries between areas of differing sonic reflectivity, bathymetric highs and lows and areas characteristic of the general background conditions of the site. All sampling locations were selected by Fugro environmental scientists following the review of the geophysical data and approved by the client.

2.2.2 Main Arrays and Interconnector

A total of eight environmental grab sampling stations were selected in the north array, six grab sampling stations were selected in the south array, and three grab sampling stations were selected along the array interconnector route. At each of these 17 environmental grab sampling stations a single macrofaunal sample and a single particle size distribution (PSD) sample were to be acquired.

Of these stations, three stations were proposed for sediment chemistry analysis, targeting areas with the greatest predicted mud content.

Acceptable sampling accuracy was agreed with the client as within 50 m of the target location. If after three attempts no sample was attained, the station would be moved 50 m and re-attempted. If no sample was acquired after moving 50 m, the station was to be abandoned.

A total of one drop-down video (DDV) sample of hard/coarse substrate and two DDV transects located in areas of potential conservation interest were proposed in the north array.

Table 2.1 provides the coordinates, data to be acquired and rationale for each location. Figures 2.1 and 2.2 provide a spatial display of the proposed survey locations overlain on the SSS mosaic.

Table 2.1: Proposed sampling stations, main arrays and interconnector route

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Rationale	Data and Sample Acquisition
North Array				
FE1_01	437 904.9	5 754 004.2	Irregular rough seafloor feature to investigate via DDV transect	Video and stills FA, PSD
FE1_02	439 440.8	5 759 631.3	Localised rough feature to investigate with DDV transect. Evidence of trawling in area	Video and stills FA, PSD
FE1_03	439 237.0	5 755 430.0	Sand waves on/off ridge	FA, PSD
FE1_04	440 530.0	5 757 411.0	Representative of larger area of station FE1_02. Mixed rough ground with areas of sand ripples. Low potential of hard/coarse substrate to investigate with DDV sample	Video and stills FA, PSD
FE1_05	442 807.0	5 755 913.0	Representative of larger area with rougher signature. Potentially less mixed sediments than that of stations to the west, with sand ripples and mega-ripples	FA, PSD, SC
FE1_06	442 882.0	5 760 008.2	Representative of larger area. Transitory area of rippled sand, containing stations FE1_05, FE1_07 and FE1_08, to the south and east and an area to the west	FA, PSD
FE1_07	447 081.0	5 758 229.0	Sand ripples and waves representative of eastern half of the north array	FA, PSD
FE1_08	450 866.0	5 759 026.0	Sand ripples and waves	FA, PSD
South Array				
FE2_01	435 851.0	5 742 898.0	Representative of wider area. Section to west of larger sand ripples and waves. Potentially mixed sediments interspersed with sand ripples	FA, PSD
FE2_02	436 225.0	5 741 075.0	Representative of potentially mixed sediments and sand ripples, approximately 700 m wide area running NE/SW, transitional from station FE2_01 to larger sand waves and ripples area to west	FA, PSD
FE2_03	437 540.0	5 737 498.0	Representative of sand waves and ripples area, approximately 3 km wide, running centrally NE/SW through the south array	FA, PSD, SC
FE2_04	439 870.0	5 742 101.0	Representative of sand waves and ripples area, approximately 3 km wide, running centrally NE/SW through the south array	FA, PSD
FE2_05	442 677.0	5 743 137.0	Representative of area west of sand waves and ripples area. Similar in signature to station FE2_02, potentially mixed sediments interspersed with sand ripples	FA, PSD

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Rationale	Data and Sample Acquisition
FE2_06	441 940.3	5 739 316.1	Representative of area west of sand waves and ripples area. Similar in signature to station FE2_02, potentially mixed sediments interspersed with sand ripples	FA, PSD
Interconnector Route				
FE3_01	440 936.2	5 748 447.8	Representative large area of potentially mixed sediments; smoother signature than sand ripples and waves located in the north and south of the Interconnector route but interspersed with some rougher signatures and sand ripples. Evidence of trawling throughout	FA, PSD, SC
FE3_02	439 733.8	5 745 513.7	Representative rougher area with sand waves and ripples in the north and south of the Interconnector route, interspersed with smoother signatures of potentially mixed sediments as station FE3_02	FA, PSD
FE3_03	442 019.7	5 751 415.1	Representative of transitory area between smoother area as station FE3_01 and area of sand waves and ripples to the west and north. Station located in smoother signature, potentially mixed sediments	FA, PSD

Notes
DDV = Drop-down video
FA = Faunal sample A
PSD = Particle size distribution sample
SC = Sediment chemistry sample

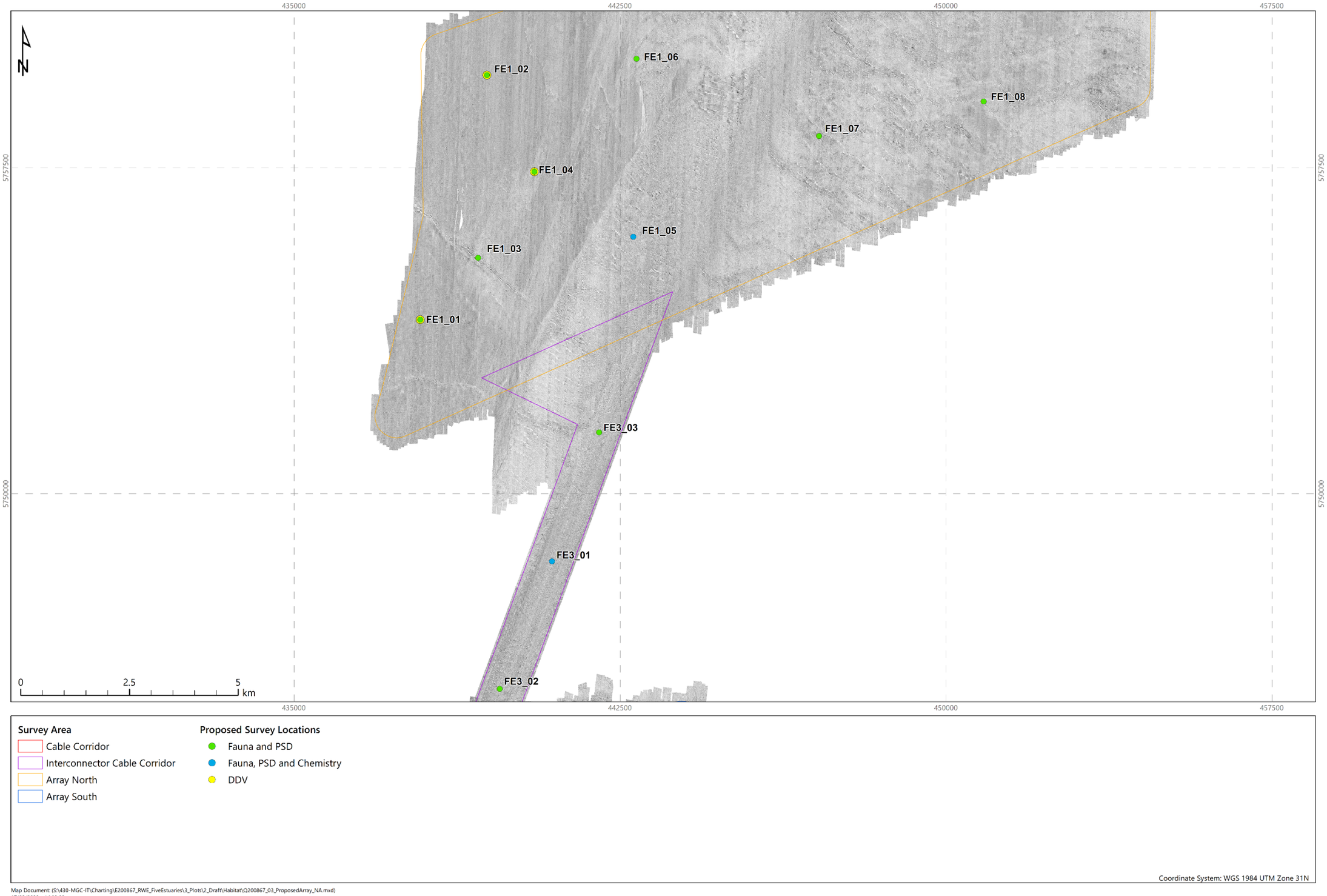


Figure 2.1: Proposed environmental survey locations in the north array and northern section of the interconnector route overlain on side scan sonar data

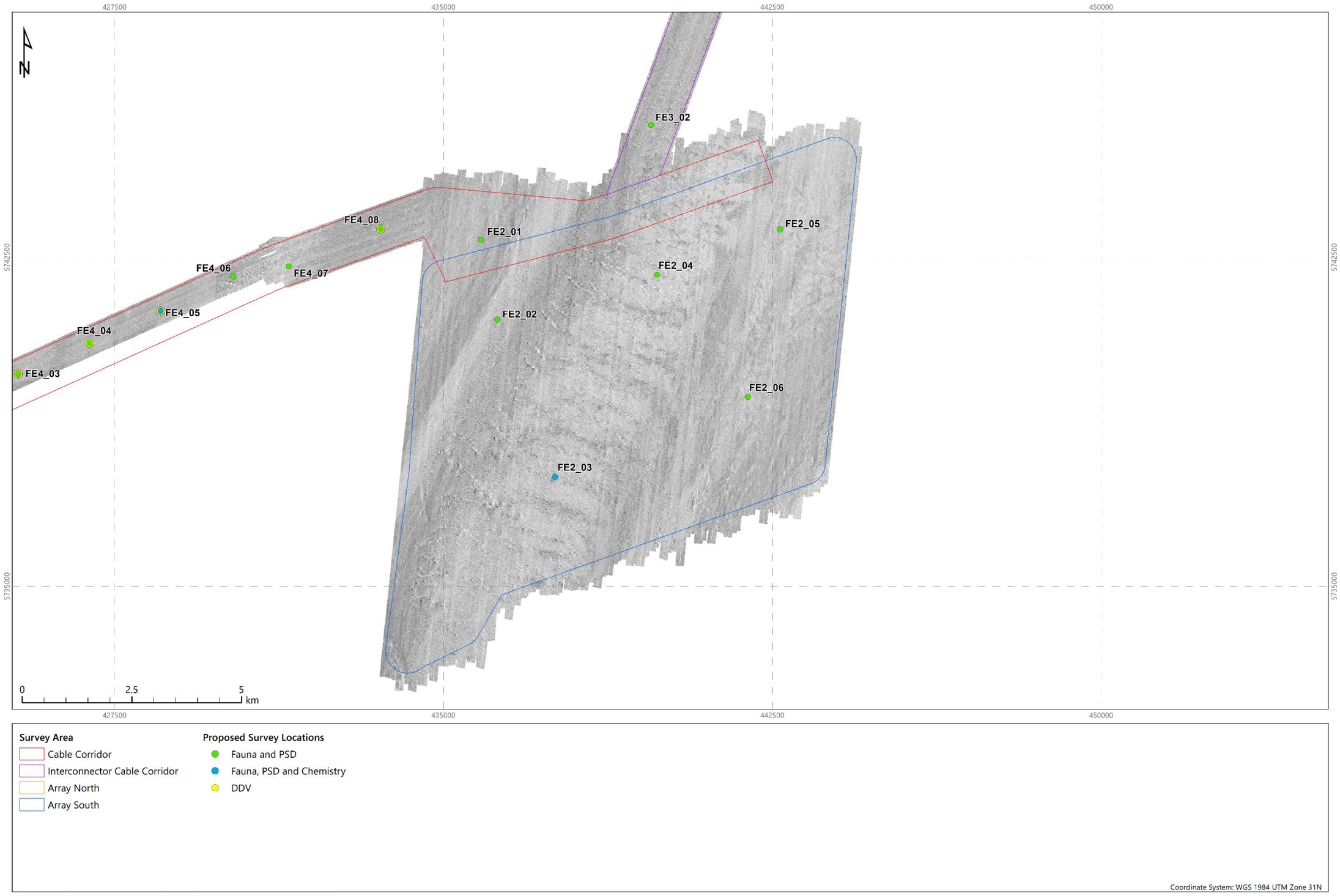


Figure 2.2: Proposed environmental survey locations in the south array and southern section of the interconnector route overlain on side scan sonar data

2.2.3 Export Cable Route

A total of 47 environmental grab sampling stations were selected within the export cable corridor. At each environmental grab sampling station a single macrofaunal sample and a single PSD sample were to be acquired.

Of these stations, nine stations were proposed for sediment chemistry analysis, targeting areas with the greatest predicted mud content.

Acceptable sampling accuracy was agreed with the client as within 50 m of the target location. If after three attempts no sample was attained, the station would be moved 50 m and re-attempted. If no sample was acquired after moving 50 m, the station was to be abandoned.

A total of five DDV samples of hard/coarse substrate and twelve DDV transects in areas of conservation focus were proposed.

Table 2.2 provides the coordinates, data to be acquired and rationale for each location. Figure 2.3 provides a spatial display of the proposed survey locations overlain on the SSS mosaic.

Table 2.2: Proposed sampling stations, export cable route

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Rationale	Data and Sample Acquisition
FE4_01	422 088.0	5 738 358.0	Selected for spatial coverage. Gravelly muddy sands with potential clay to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD
FE4_02	423 692.0	5 739 131.0	Selected for spatial coverage. Potential gravelly muddy sands with potential for clay to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD, SC
FE4_03	425 301.0	5 739 840.0	Selected for spatial coverage. Potential gravelly muddy sands with potential for clay to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD
FE4_04	426 929.0	5 740 543.0	Selected for spatial coverage. Potential gravelly muddy sands with potential for clay to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD
FE4_05	428 550.0	5 741 277.0	Selected for spatial coverage. Potential gravelly muddy sands with potential for clay to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD, SC
FE4_06	430 202.0	5 742 064.0	Selected for spatial coverage. Sand waves	FA, PSD
FE4_07	431 465.0	5 742 299.0	Selected for spatial coverage. provisionally located 500 m from Galloper interconnectors. Sand ripples	FA, PSD

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Rationale	Data and Sample Acquisition
FE4_08	433 566.5	5 743 146.2	Selected for spatial coverage. Potential gravelly muddy sands with potential for clay to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD
FE5_01	410 739.0	5 744 398.9	Selected for spatial coverage. Mixed sediments. Potential coarse substrates to investigate by means of DDV transect (feature of potential conservation interest). Possible trawl scars in area	Video and stills FA, PSD
FE5_02	411 906.0	5 743 421.0	Selected for spatial coverage. Potential mixed sediments with sand ripples	FA, PSD
FE5_03	412 839.0	5 742 381.0	Selected for spatial coverage. Potential gravelly muddy sands	FA, PSD
FE5_04	413 827.5	5 741 203.2	Selected for spatial coverage. Potential gravelly muddy sands with sand ripples in area	FA, PSD
FE5_05	414 453.9	5 739 853.3	Selected for spatial coverage. Potential gravelly muddy sands with sand ripples	FA, PSD
FE5_06	414 947.4	5 738 480.2	Selected for spatial coverage. Potential gravelly muddy sands. Small patch of feature of potential conservation interest (similar signature to others with DDV)	FA, PSD
FE5_07	416 360.4	5 737 761.0	Selected for spatial coverage. Mixed sediments with sand ripples.	FA, PSD
FE5_08	417 654.0	5 737 551.0	Selected for spatial coverage. Mixed sediments	FA, PSD
FE5_09	419 142.9	5 737 800.3	Selected for spatial coverage. Gravelly muddy sands. Potential for clay. Potential coarse sediments for investigation by means of DDV sample	Video and stills FA, PSD, SC
FE5_10	420 438.0	5 737 564.0	Selected for spatial coverage and edge of data overlap. Mixed sediments	FA, PSD
FE6_01	398 993.0	5 747 423.0	Selected for spatial coverage. Possible sand	FA, PSD
FE6_02	398 489.0	5 746 031.0	Selected for spatial coverage. Likely sand	FA, PSD
FE6_04	399 941.0	5 743 615.0	Selected for spatial coverage. Possible rippled (mixed sediments) or sands	FA, PSD
FE6_05	401 027.0	5 742 943.0	Selected for spatial coverage. Possible rippled sands	FA, PSD
FE6_06	402 426.0	5 743 023.0	Selected for spatial coverage. Sand waves	FA, PSD
FE6_07	403 871.0	5 743 138.0	Selected for spatial coverage. Sand ripples/waves	FA, PSD
FE6_08	405 301.0	5 743 436.0	Selected for spatial coverage. Sand ripples/waves	FA, PSD
FE6_09	406 753.0	5 743 803.0	Selected for spatial coverage. Sand ripples	FA, PSD
FE6_10	408 472.0	5 744 432.0	Located within the northern edge of Margate and Long Sands SAC. Sand ripples	FA, PSD

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Rationale	Data and Sample Acquisition
FE6_11	409 460.0	5 744 858.0	Selected for spatial coverage. Unknown from SSS but at edge of available data. Possible mixed sediments with some muds	FA, PSD, SC
FE7b_01	381 555.4	5 742 302.3	Potential hard/coarse substrate feature, extending east/west along the central ECR. Edge of 5 m LAT contour. DDV sample	Video and stills
FE7b_02	381 454.7	5 742 388.5	Central to area with potential hard/coarse signature, distinct from station FE7b_01 feature. DDV sample	Video and stills FA, PSD, SC
FE7b_03	381 508.9	5 742 019.1	Unknown mixed coarse sediments to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills
FE7b_04	382 109.0	5 742 112.9	Representative of area. Potential mixed sediments	FA, PSD, SC
FE7b_05	383 290.0	5 742 263.0	Selected for spatial coverage	FA, PSD
FE7b_06	384 667.0	5 742 324.0	Selected for spatial coverage. Potential mixed sediments with no features	FA, PSD
FE7c_01	385 936.0	5 742 691.0	Selected for spatial coverage. Potential mixed sediments with no features	FA, PSD
FE7c_02	387 190.0	5 743 318.0	Selected for spatial coverage. Possible mixed sediments	FA, PSD
FE7c_03	388 184.0	5 743 823.0	Selected for spatial coverage. Similar reflectivity to station FE7c_02	FA, PSD
FE7c_04	389 055.0	5 744 022.0	Selected for spatial coverage and central to area of low reflectivity; potentially mud/sandy mud to gravelly mud	FA, PSD, SC
FE7d_01	390 309.0	5 744 985.0	Selected for spatial coverage. Mixed sediments	FA, PSD
FE7d_02	391 572.8	5 745 581.8	Selected for spatial coverage. Possible mixed sediments, with stony ground and clay. Potential clay FOCI to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD
FE7d_02a	390 625.3	5 745 539.2	Similar feature but larger area, compared to station FE7d_02. Possible exposed clay or coarse sediment to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills
FE7d_03	392 632.9	5 746 248.0	Selected for spatial coverage and with highest potential for successful grab. Similar to station FE7d_02	FA, PSD
FE7d_03a	392 590.3	5 746 236.9	Unknown feature but similar to station FE7d_02a. Potential coarse sediments and to be investigated by means of DDV sample	Video and stills

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Rationale	Data and Sample Acquisition
FE7e_01	392 863.0	5 747 783.0	Selected for spatial coverage. North-eastern (transitory?) end of higher reflectivity of station FE7c_02/03. Potentially stones to gravelly sands	FA, PSD
FE7e_01a	392 894.4	5 748 177.1	Edge of potential stony sediments; like station FE7e_01. Potential hard/coarse substrate and to be investigated by means of DDV sample	Video and stills
FE7e_02	392 970.0	5 748 303.0	Band of lower reflectivity 500 m NE of station FE7e_01 in slightly deeper area (10 m LAT) and potentially mixed sediments with mud content	FA, PSD, SC
FE7e_03	393 566.0	5 749 542.0	Selected for spatial coverage. Higher reflectivity and shallower water than station FE07e_02. Potentially rippled sand	FA, PSD
FE7e_03a	393 756.8	5 749 639.0	Likely coarse material in rippled sand to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills
FE7f_01	394 682.0	5 750 306.0	Selected for spatial coverage. Band of slightly deeper (> 10 m LAT) sediments with lower reflectivity than location to west. Potentially rippled sand and/or gravelly sand	FA, PSD
FE7f_02	395 936.0	5 750 566.0	Selected for spatial coverage. Water depth < 10 m LAT and transitional lower reflectivity from location to west. Potential gravel and sand sediments with possible clay to investigate by means of DDV transect (feature of potential conservation interest)	Video and stills FA, PSD
FE7g_01	397 129.0	5 749 909.0	Selected for spatial coverage. Area of lower reflectivity before slope to deeper water (10 m – 20 m LAT). Potentially mixed sediments	FA, PSD
FE7g_02	398 410.0	5 749 371.0	Selected for spatial coverage. Sand rippled slope	FA, PSD
FE7g_03	399 484.4	5 748 814.3	Low slope of sand rippled area, low reflectivity location of potentially muddier sand	FA, PSD, SC

Notes
DDV = Drop-down video
FA = Faunal sample A
PSD = Particle size distribution sample
SC = Sediment chemistry sample
SAC =Special Area of Conservation
SSS = Side scan sonar
ECR = Export cable route
LAT = Lowest Astronomical Tide
FOCI = Feature of Conservation Interest

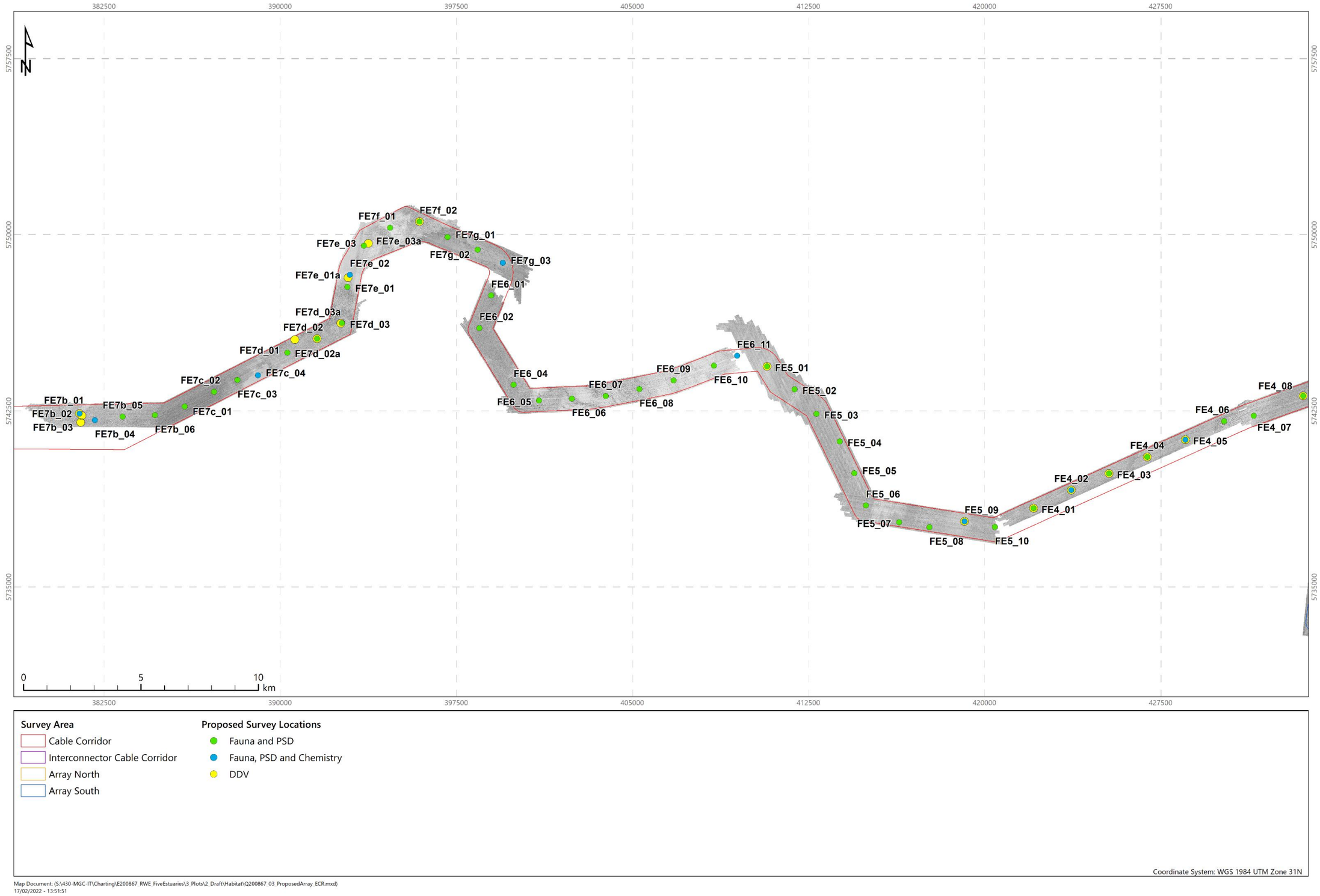


Figure 2.3: Proposed environmental survey locations along the export cable route overlain on side scan sonar data

3. Methods

3.1 Survey Methods

3.1.1 Seabed Photography

Operational procedures for seabed photography followed those outlined within Hitchin et al. (2015). Seabed photography was acquired using a Subsea Technology and Rentals Limited deep-sea camera system mounted within a purpose-built camera frame complete with one HD video camera, one high resolution stills camera, a separate strobe and four LED lamps.

Seabed video photographic data were displayed on a computer monitor and recorded directly onto a local hard drive. A video overlay was used to overlay a navigation string from the Hemisphere differential GPS, including the time, date, depth and location (easting and northing). The survey location and station number were also displayed (manually updated). The stills camera imagery was visible on a second window of the computer. Photographic data were viewed in real time via a sonar cable, assisting in the control of the camera in the water. Quad scaling lasers were set up 17 cm apart to provide a scale.

In areas of poor visibility, seabed photography was also acquired using a Bowtech SeaKnight HD underwater camera system mounted within a freshwater frame.

Further details of operational procedures for seabed photography can be found in the operations report (Fugro, 2021b).

3.1.2 Sediment Sampling

Faunal and PSD samples were acquired using a 0.1 m^2 mini Hamon grab. Chemistry samples were acquired using a 0.1 m^2 Day grab.

Further details of operational procedures for grab sampling can be found in the operations report (Fugro, 2021b).

3.2 Interpretation Methods

3.2.1 Seabed Habitats/Biotopes Classification

To assess the habitats present within the survey area, detailed analysis of video and still photographic data was undertaken noting the locations of any observed changes in sediment type and/or associated faunal community. Field sample descriptions were used to provide further information on sediment composition. Seabed photographic interpretation followed the guidelines outlined within Turner et al. (2016).

Taxa were recorded to the lowest possible taxonomic level. It should be noted that many species cannot be identified from photographic data alone and, as such, higher taxonomic levels were used.

Descriptions of the substrate composition, corresponding to sediment changes, were undertaken for each video segment. These descriptions were based on a reclassification of the Folk (1954) sediment classes and were developed to support the EUNIS habitat identification (Long, 2006) in conjunction with the Wentworth (1922) classification, the latter differentiating between 'pebbles', 'cobbles' and 'boulders' based on their dimensions. The Folk (1954) sediment classification was initially reclassified into four categories, namely 'coarse sediment', 'mixed sediment', 'mud and sandy mud' and 'sand and muddy sand' to be more aligned with the EUNIS classification. During this reclassification, elements of 'muddy sand' were contained within both latter categories (Long, 2006). For the purposes of this habitat assessment, aligned with the EMODnet substrate classification scheme, 'mud to muddy sand' and 'sand' are considered separately, with the former including the sub-categories 'mud', 'sandy mud' and 'muddy sand' (Kaskela et al., 2019). The Folk categories and sub-categories are defined by the proportions of 'mud', 'sand' and 'gravel'. For example, a description of muddy sand defines sediments that have sand as the principal component (50 % to 90 %) with a secondary component of mud (10 % to 50 %) and < 5 % gravel (Kaskela et al., 2019). The EMODnet Geology Consortium further revised the above categories to include the category 'rock and boulders' (Kaskela et al., 2019), which includes the Wentworth (1922) categories boulders and cobbles. The presence of shell fragments and observed anthropogenic features were also noted. Table 3.1 presents a summary of the sediment particle sizes and corresponding classifications.

Table 3.1: Sediment particle size and classification terms

<table>
<tr><th>Particle Size</th><th>Wentworth (1922)</th><th>Folk (1954)</th><th colspan="4">Folk, 5 Classes (Kaskela et al., 2019)</th></tr>
<tr><td>> 256 mm</td><td>Boulder</td><td rowspan="10">Gravel</td><td colspan="4">Rock and boulders</td></tr>
<tr><td>64 mm to 256 mm</td><td>Cobble</td></tr>
<tr><td>32 mm to < 64 mm</td><td rowspan="4">Pebbles</td><td rowspan="11">Coarse sediment:
(Gravel ≥ 80 %,
or
Gravel ≥ 5 %
and
Sand ≥ 90 %)</td><td rowspan="12">Mixed sediment:
(Mud ≥ 10 %-95 %
Sand < 90 %
Gravel ≥ 5%)</td><td rowspan="12">Mud to muddy sand*:
(Mud 10 %-95 %
Sand < 90 %
Gravel < 5 %)</td><td rowspan="12">Sand:
(Mud < 10 %
Sand ≥ 90 %
Gravel < 5%)</td></tr>
<tr><td>16 mm to < 32 mm</td></tr>
<tr><td>8 mm to < 16 mm</td></tr>
<tr><td>4 mm to < 8 mm</td></tr>
<tr><td>2 mm to < 4 mm</td><td>Granules</td></tr>
<tr><td>1 mm to < 2 mm</td><td>Very coarse sand</td><td rowspan="5">Sand</td></tr>
<tr><td>0.5 mm to < 1 mm</td><td>Coarse sand</td></tr>
<tr><td>0.25 mm to < 0.5 mm</td><td>Medium sand</td></tr>
<tr><td>0.125 mm to < 0.25 mm</td><td>Fine sand</td></tr>
<tr><td>62.5 µm to 0.125 mm</td><td>Very fine sand</td></tr>
<tr><td>> 4 µm to 62.5 µm</td><td>Silt</td><td rowspan="2">Mud</td><td rowspan="2">-</td></tr>
<tr><td>> 1 µm to 4 µm</td><td>Clay</td></tr>
<tr><td colspan="7">Notes
* = Mud to muddy sand includes:
Mud (Mud ≥ 90 %, Sand <10 %, Gravel < 5%);
Sandy mud (Mud 50 % to 90 %, Sand 10 % to 50 %, Gravel < 5%);
Muddy sand (Mud 10 % to 50 %, Sand 50 % to 90 %, Gravel < 5%) (Kaskela et al., 2019)</td></tr>
</table>

Habitats within the survey area have been classified in accordance with the EUNIS habitat classification (European Environment Agency [EEA], 2019). Table 3.2 summarises the EUNIS hierarchy, with an example of the coding system. The EUNIS classification system is designed to incorporate small-scale temporal variations (e.g. seasonal) into the biotope/habitat categories. However, biological communities and marine environments can be highly dynamic and temporally variable, therefore the biotopes and habitats identified by the current assessment are representative of the survey area at the time of sampling only.

EUNIS classifications were coded for each habitat type observed from video data. Although, theoretically, a biotope can be assigned to any sized area of seabed, for the purposes of this assessment the commonly accepted minimum habitat size of 25 m^2 was adopted. Over an area with a patchy distribution of a specific habitat, this minimum size can be split into several discrete patches (Parry, 2019).

Table 3.2: EUNIS (EEA, 2019) biotope classification hierarchy example

Level	Example Classification Name	Example Classification Code
1. Environment	Marine habitats	A
2. Broad habitat types	Sublittoral sediments	A5
3. Main habitats	Sublittoral sand	A5.2
4. Biotope complexes	Circalittoral muddy sand	A5.26
5 & 6. Biotopes and sub-biotopes	*Amphiura brachiata* with *Astropecten irregularis* and other echinoderms in circalittoral muddy sand	A5.262

3.2.2 Sensitive Habitats and Species

Following an initial review of video and photography data the presence of any sensitive habitat and species were assessed using the methods outlined below.

3.2.2.1 Sandbanks

No specific assessment criteria have been defined for this Annex I habitat. However, the habitat is characterised by distinct topographic features (i.e. elongated, rounded or irregular 'mound' shapes), which may arise from horizontal or sloping plains of sandy sediment at depths of less than 20 m (but can include channels or other areas greater than 20 m deep). Where areas of horizontal or sloping sandy habitat are closely associated with the banks, they are included within the Annex I type. As a result, all geophysical and ground-truthing data were reviewed to assess whether these characteristics were present in the survey area.

3.2.2.2 Peat and Clay Exposures with Piddocks

No specific assessment criteria have been defined for this priority habitat. However, when reviewing the geophysical and video data, identification of peat and/or clay seabed sediments would be further investigated for presence of piddocks and piddock holes.

3.2.2.3 Subtidal Sands and Gravels

The subtidal sands and gravels priority habitat incorporates the 'Sublittoral coarse sediment' and 'Sublittoral sand' broad habitats within the EUNIS habitat classification (EEA, 2019). Seabed photographic data were reviewed in detail to characterise the sediments within the survey area and broad habitat types were selected, which are comparable to the priority habitats. Associated epifaunal assemblages were identified to determine whether they constituted component habitats. The assigned EUNIS main habitat type will be used to assess the presence of any potential priority habitats.

3.2.2.4 Stony Reefs Assessment

Table 3.3 presents the criteria used to assess potential stony reefs in the survey area (Irving, 2009). When considering the potential of an area to qualify as stony reef habitat, the overarching criterium is the sediment composition, with at least 10 % of stones larger than 64 mm for a habitat to be considered as reef like (Irving, 2009). However, the relationship between the coarse material and sediment matrix in which it lies is integral in determining reefiness. Specifically, clast-supported implies that the cobbles are touching each other, whereas matrix-supported implies that there is finer sediment surrounding each cobble. Reefs are also defined as having relief from the seafloor, meaning they are topographically distinct from the surrounding seabed. In keeping with the definition of the Habitats Directive Interpretation Manual, elevation is used as another criterion for assessment (Irving, 2009).

The epifaunal community of potential reef habitat is also a determinant of reefiness, and proportion of epifaunal taxa is included as an assessment criterion. Within the Irving (2009) scheme, areas of potential stony reef habitat must be greater than 25 m^2 to be classified as reef. There are three categories of stony reef 'low', 'medium' and 'high', however, when determining whether an area of the seabed should be considered as Annex I stony reef, if a 'low' is scored in any of the four characteristics (composition, elevation, extent or biota), then a strong justification would be required for this area to qualify as reef under the EU Habitats Directive (Irving, 2009).

Table 3.3: Main characterising features of a stony reef (Irving, 2009)

Characteristic	Not a 'stony reef'	Resemblance to being a 'stony reef'		
		Low	Medium	High
Composition Diameter of cobbles/boulders > 64 mm. Percentage cover relates to a minimum area of 25 m^2. This 'composition' characteristic also includes 'patchiness'.	10 %	10 % to 40 % Matrix supported	> 40 % to 95 %	> 95 % Clast supported
Elevation Minimum height (64 mm) relates to minimum size of constituent cobbles. This characteristic could also include 'distinctness' from the surrounding seabed	Flat seabed	< 64 mm	64 mm to 5 m	> 5 m
Extent	< 25 m^2	> 25 m^2		
Biota	Dominated by infaunal species	-	-	> 80 % epifaunal species

Further to the criteria outlined in Irving (2009), JNCC hosted a workshop to further refine the definition of a stony reef (Golding et al, 2020). When evaluating the importance of 'low' reef, two additional criteria were presented (stability and biodiversity) to determine the value of 'low' stony reef. These two criteria have also been considered in the stony reef assessment. Table 3.4 presents the additional features of a 'low' stony reef as outlined in Golding et al (2020).

Table 3.4: Additional features of a 'low' stony reef (Golding et al, 2020)

Characteristic	Non reef biotopes	Possible Reef Biotopes	Reef Biotopes
Stability	Infaunal and other sediment dependent species Have annual or short-lived erect species Have scour tolerant or crustose species	Has partial cover of perennial erect species and some less robust species	Stable and relatively species divers habitat Good cover of perennial erect species
Biodiversity – Key species	No key species	> 1 and < 3 key species	≥ 3 key species
Notes Key species were derived from data from Wales			

3.2.2.5 *Sabellaria spinulosa* reef

Video and geophysical data were reviewed according to JNCC guidelines which propose criteria for assessment of 'reefiness' of *S. spinulosa* aggregations (Gubbay, 2007; Table 3.5). It was decided that a *S. spinulosa* reef could be simply defined as an area of *S. spinulosa* that is elevated from the seabed and has a large spatial extent. Colonies may be patchy within an

area defined as reef with a range of elevations. It should be noted that these criteria are not fully accepted/agreed thresholds for *S. spinulosa* reef identification and should be used as a guide only.

Table 3.5: Measures of 'Reefiness' of *Sabellaria spinulosa* Aggregations (Gubbay, 2007)

Characteristic	Not a *Sabellaria* Reef	*Sabellaria* 'Reefiness'		
		Low	Medium	High
Elevation (cm) Average Tube Height	< 2	2 – 5	5 – 10	> 10
Extent (m^2)	< 25	25 – 10 000	10 000 – 1 000 000	> 1 000 000
Patchiness (% Cover)	< 10	10 – 20	20 – 30	> 30

The JNCC (Gubbay, 2007) guidelines do not provide a method for combining the three *S. spinulosa* reefiness measures to provide a single overall reefiness of a potential reef. As such, the method used in the JNCC/CEFAS report (Jenkins et al., 2015) has been utilised to create a measure of reef structure (Table 3.6). As shown in elevation and patchiness has been combined to give a 'reefiness structure'. For each transect, percentage of each reefiness structure category was calculated to indicate prevalence of *S. spinulosa* reefs along the transect.

Table 3.6: *Sabellaria spinulosa* reef structure matrix

Reef Structure			Elevation [cm]			
			< 2	2 to 5	5 to 10	> 10
			Not a Reef	Low	Medium	High
Patchiness	< 10 %	Not a Reef				
	10 % to 20 %	Low				
	20 % to 30 %	Medium				
	> 30 %	High				
***Sabellaria spinulosa* Reefiness Assessment**						
Not a Reef		Low Reef		Medium Reef		High Reef

4. Results

4.1 Field Operations

4.1.1 Main Arrays and Interconnector

Photographic stills and video data were successfully acquired at the two DDV transects and the one DDV sample location within the north array.

Grab samples were successfully acquired at all of the 17 proposed stations. A complete suite of samples (one macrofauna and one PSD sample) were retained at all stations. Chemistry samples were retained at all 3 proposed stations.

Tables 4.1 and 4.2 detail the acquired photographic data acquired at each station and transect and completed grab sampling stations. Appendices B.1 and B.2 provide detailed survey logs. Figures 4.1 and 4.3 spatially present completed sampling locations.

Table 4.1: Completed drop-down video, main arrays and interconnector

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]						
Station		Easting	Northing	Depth [m BSL]	Length [m]	Data Acquisition
North Array						
FE1_01	SOL	437 885.3	5 753 933.8	35	104	2 min 55 sec 22 stills
	EOL	437 908.6	5 754 035.4			
FE1_02	SOL	439 412.2	5 759 537.7	39	125	3 min 28 sec 15 stills
	EOL	439 437.1	5 759 660.3			
FE1_04	SOL	440 526.4	5 757 362.2	41	101	3 min 42 sec 24 stills
	EOL	440 537.7	5 757 462.2			

Notes
BSL = Below sea level
SOL = Start of line
EOL = End of line

Table 4.2: Completed sampling stations, main arrays and interconnector

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Depth [m BSL]	Sample Acquisition
North Array				
FE1_01	437 900.5	5 754 008.1	35	FA, PSD
FE1_02	439 441.7	5 759 646.8	38	FA, PSD
FE1_03	439 233.4	5 755 425.7	39	FA, PSD
FE1_04	440 540.7	5 757 414.0	40	FA, PSD
FE1_05	442 804.7	5 755 900.6	47	FA, PSD, SC
FE1_06	442 887.4	5 760 017.8	43	FA, PSD

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Depth [m BSL]	Sample Acquisition
FE1_07	447 079.1	5 758 232.8	48	FA, PSD
FE1_08	450 856.0	5 759 015.6	48	FA, PSD
South Array				
FE2_01	435 857.3	5 742 896.9	37	FA, PSD
FE2_02	436 222.5	5 741 088.0	52	FA, PSD
FE2_03	437 539.7	5 737 482.5	50	FA, PSD, SC
FE2_04	439 887.4	5 742 099.2	50	FA, PSD
FE2_05	442 684.3	5 743 140.8	46	FA, PSD
FE2_06	441 937.1	5 739 315.4	50	FA, PSD
Interconnector Route				
FE3_01	440 933.5	5 748 446.2	52	FA, PSD, SC
FE3_02	439 736.7	5 745 508.7	50	FA, PSD
FE3_03	442 021.0	5 751 430.3	52	FA, PSD

Notes
BSL = Below sea level
SC = Sediment chemistry sample
PSD = Particle size distribution
FA = Faunal sample A

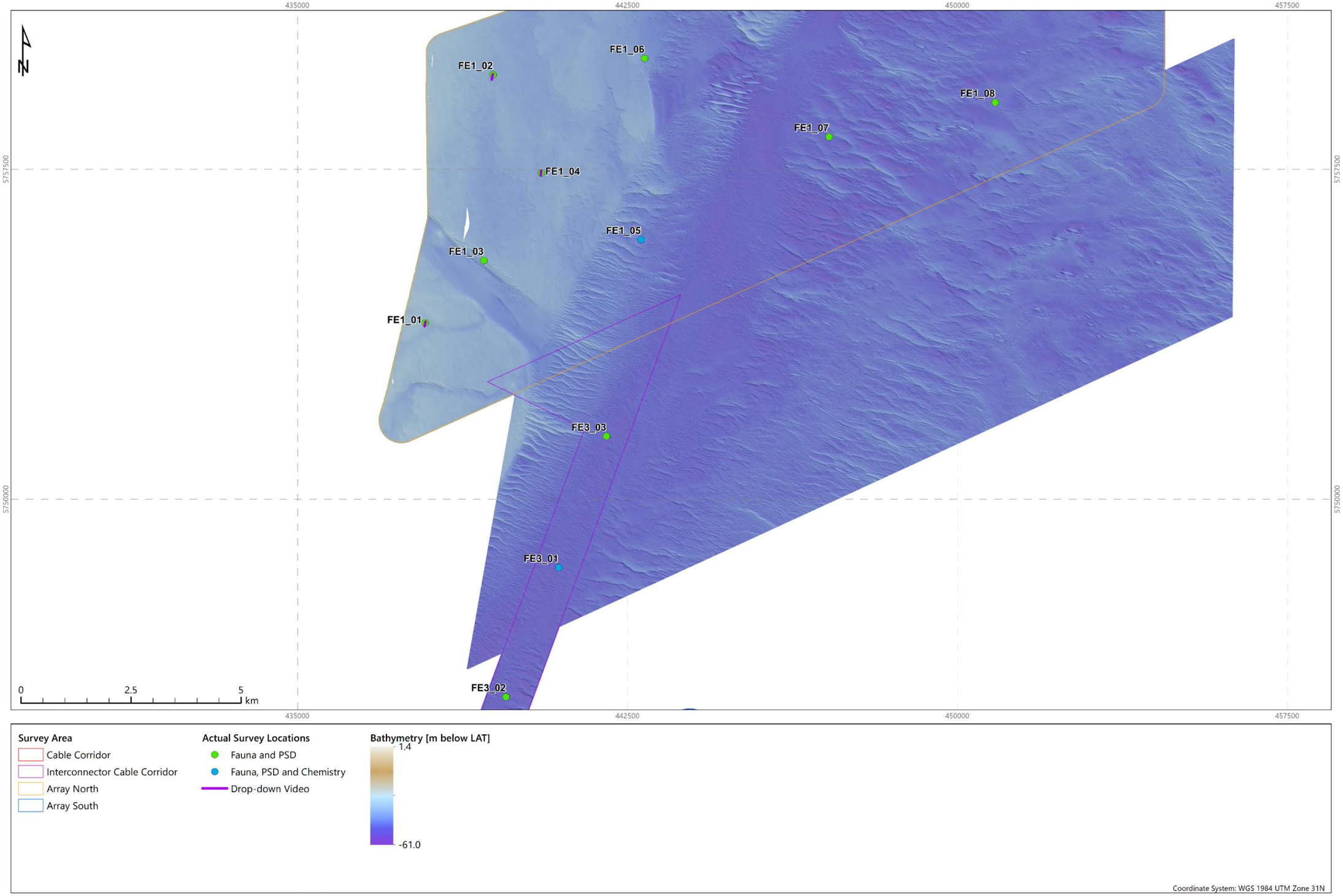


Figure 4.1: Completed environmental survey locations in the north array and northern part of the interconnector route overlain bathymetry data

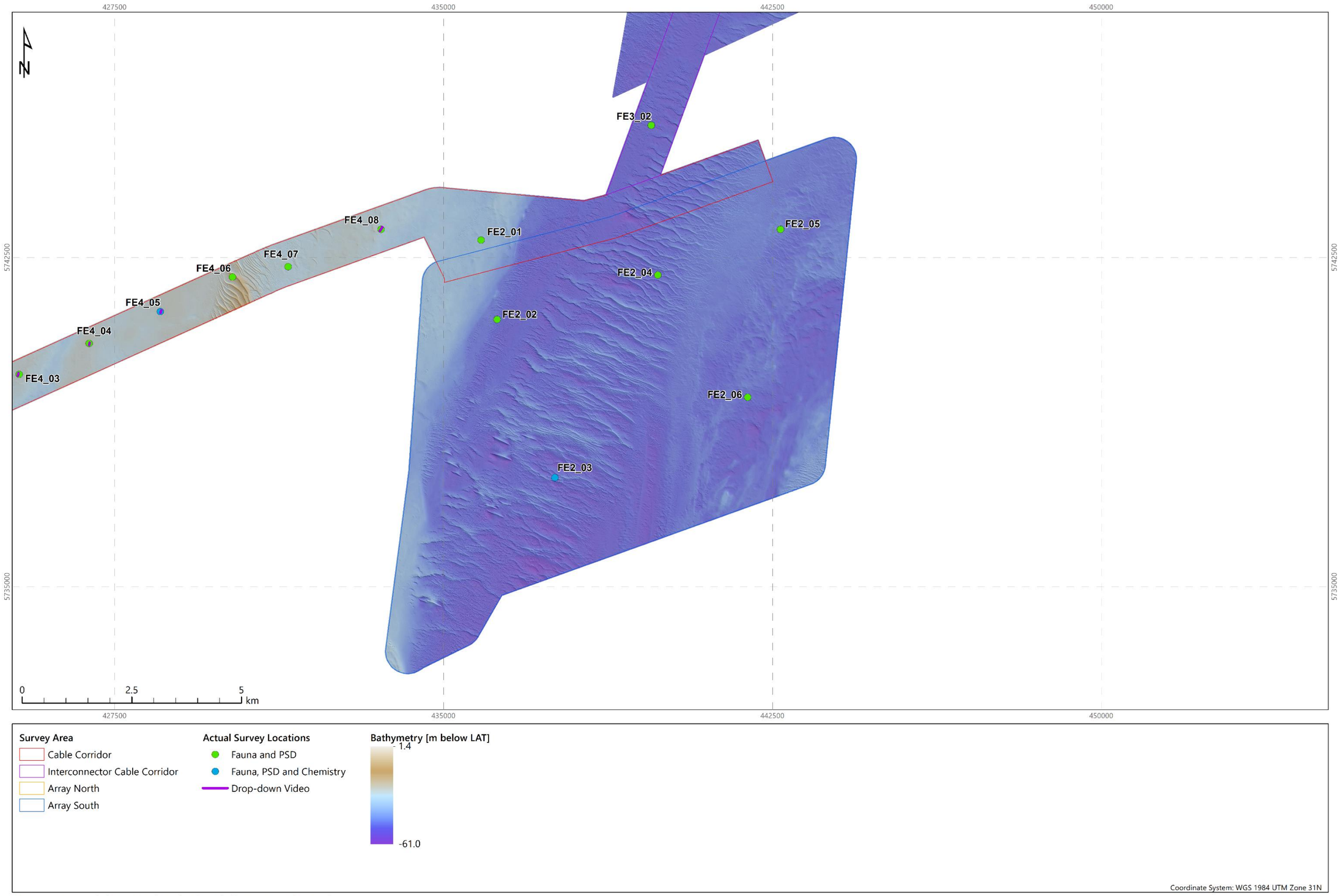


Figure 4.2: Completed environmental survey locations in the south array and southern part of the interconnector route overlain on bathymetry data

4.1.2 Export Cable Route

Photographic stills and video data were attempted at all 17 DDV locations. The underwater visibility at the shallowest locations (ten stations in total) was poor due to local environmental conditions, resulting in eight locations being re-run. Of the ten stations with poor underwater visibility, the visibility at seven stations was sufficient to enable the description of sediment type and characterising taxa to be established. At three stations (FE5_01c, FE7d_02 and FE7e_01a), underwater visibility was too poor to enable characterisation from the video data.

Grab samples were successfully acquired at 44 out of the 47 proposed stations. A complete suite of samples (one macrofauna and one PSD sample) was retained at 44 stations. Three stations (FE6_05, FE7d_02 and FE7f_02) failed to acquire any sediment samples due to hard seabed substrata.

Chemistry samples were retained at eight out of nine proposed stations. At station FE6_11a faunal and PSD sample were successfully acquired at the proposed location with the Hamon grab but due to hard seabed substrata, the Day grab failed to acquire a sediment chemistry sample.

At station FE4_02 a faunal and PSD sample were successfully acquired at the proposed location with the Hamon grab but due to potential hard seabed substrata, the Day grab failed to acquire a sediment chemistry sample. A sediment chemistry sample was successfully acquired 50 m away at FE4_02_50 m.

Tables 4.3 and 4.4 detail the photographic data acquired at each station and transect and completed grab sampling stations. Appendices B.1 and B.2 provide detailed survey logs. Figure 4.3 spatially presents completed sampling locations.

Table 4.3: Completed drop-down video, export cable route

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]						
Station		Easting	Northing	Depth [m BSL]	Length [m]	Data Acquisition
FE4_01	SOL	422 084.1	5 738 388.4	25	70	1 min 37 sec 14 stills
	EOL	422 074.9	5 738 318.7			
FE4_02	SOL	423 696.1	5 739 158.2	28	55	2 min 23 sec 15 stills
	EOL	423 704.6	5 739 103.5			
FE4_03	SOL	425 304.1	5 739 863.4	25	61	2 min 30 sec 22 stills
	EOL	425 290.8	5 739 803.5			
FE4_04	SOL	426 928.5	5 740 559.0	24	54	2 min 35 sec 18 stills
	EOL	426 915.8	5 740 506.8			
FE4_05	SOL	428 559.9	5 741 295.4	25	65	3 min 12 sec 18 stills
	EOL	428 542.2	5 741 233.2			
FE4_08*	SOL	433 598.7	5 743 190.2	30	104	2 min 23 sec 25 stills
	EOL	433 545.2	5 743 101.1			

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]						
Station		Easting	Northing	Depth [m BSL]	Length [m]	Data Acquisition
FE5_01c*†	SOL	410 734.3	5 744 368.9	28	45	2 min 27 sec 7 stills
	EOL	410 714.9	5 744 409.7			
FE5_09a*	SOL	419 137.9	5 737 781.9	35	52	2 min 06 sec 18 stills
	EOL	419 164.0	5 737 827.4			
FE7b_01a*†	SOL	381 528.2	5 742 283.3	7	59	4 min 13 sec 12 stills
	EOL	381 564.8	5 742 329.3			
FE7b_02†	SOL	381 480.8	5 742 416.3	6	60	4 min 27 sec 9 stills
	EOL	381 427.2	5 742 389.7			
FE7b_03†	SOL	381 528.8	5 742 039.4	6	13	3 min 53 sec 12 stills
	EOL	381 538.8	5 742 030.4			
FE7d_02†	SOL	391 599.2	5 745 598.3	7.5	58	2 min 44 sec 8 stills
	EOL	391 553.9	5 745 561.4			
FE7d_02a†	SOL	390 654.1	5 745 557.3	6	50	3 min 30 sec 14 stills
	EOL	390 625.8	5 745 516.6			
FE7d_03a*†	SOL	392 614.5	5 746 259.4	10.5	58	3 min 19 sec 8 stills
	EOL	392 584.9	5 746 209.1			
FE7e_01a*†	SOL	392 909.0	5 748 203.1	12	56	1 min 40 sec 7 stills
	EOL	392 881.2	5 748 154.4			
FE7e_03a_a*†	SOL	393 784.9	5 749 691.9	10.5	81	5 min 40 sec 16 stills
	EOL	393 758.8	5 749 615.6			
FE7f_02a*†	SOL	395 971.3	5 750 593.3	12	68	5 min 40 sec 15 stills
	EOL	395 941.8	5 750 532.6			

Notes
* = Re-run location
† = Poor visibility
BSL = Below sea level
SOL = Start of line
EOL = End of line

Table 4.4: Completed sampling stations, export cable route

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Depth [m BSL]	Sample Acquisition
FE4_01	422 078.8	5 738 359.0	25	FA, PSD
FE4_02	423 674.4	5 739 131.5	29	FA, PSD
FE4_02_50 m	423 735.0	5 739 129.6	32	SC
FE4_03	425 320.9	5 739 835.5	26	FA, PSD
FE4_04	426 917.3	5 740 541.2	25	FA, PSD
FE4_05	428 539.4	5 741 265.1	25	FA, PSD, SC

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Depth [m BSL]	Sample Acquisition
FE4_06	430 185.9	5 742 055.0	20	FA, PSD
FE4_07	431 455.4	5 742 290.7	28	FA, PSD
FE4_08	433 573.9	5 743 137.9	30	FA, PSD
FE5_01	410 746.6	5 744 408.1	29	FA, PSD
FE5_02	411 912.2	5 743 423.5	32	FA, PSD
FE5_03	412 846.6	5 742 397.9	26	FA, PSD
FE5_04	413 826.3	5 741 184.3	34	FA, PSD
FE5_05	414 455.6	5 739 845.1	40	FA, PSD
FE5_06	414 949.9	5 738 472.5	36	FA, PSD
FE5_07	416 356.7	5 737 746.5	24	FA, PSD
FE5_08	417 652.6	5 737 558.3	40	FA, PSD
FE5_09	419 128.1	5 737 791.1	39	FA, PSD, SC
FE5_10	420 459.5	5 737 566.0	29	FA, PSD
FE6_01	398 985.2	5 747 405.1	15	FA, PSD
FE6_02	398 490.1	5 746 039.6	15	FA, PSD
FE6_04	399 938.6	5 743 631.8	17	FA, PSD
FE6_06	402 432.1	5 743 025.2	17	FA, PSD
FE6_07	403 878.5	5 743 139.3	20	FA, PSD
FE6_08	405 303.2	5 743 437.7	22	FA, PSD
FE6_09	406 767.5	5 743 814.2	20	FA, PSD
FE6_10	408 482.6	5 744 447.2	21	FA, PSD
FE6_11	409 467.8	5 744 861.7	23	FA, PSD
FE7b_02	381 456.3	5 742 394.6	9	FA, PSD, SC
FE7b_04	382 114.7	5 742 115.2	8	FA, PSD, SC
FE7b_05	383 300.8	5 742 269.4	9	FA, PSD
FE7b_06	384 667.1	5 742 324.3	10	FA, PSD
FE7c_01	385 941.5	5 742 696.5	9	FA, PSD
FE7c_02	387 198.6	5 743 325.9	9	FA, PSD
FE7c_03	388 197.6	5 743 823.6	9	FA, PSD
FE7c_04	389 049.8	5 744 032.0	11	FA, PSD, SC
FE7d_01	390 302.2	5 744 980.6	9	FA, PSD
FE7d_03	392 631.5	5 746 248.7	10.5	FA, PSD
FE7e_01	392 869.0	5 747 787.2	12	FA, PSD
FE7e_02	392 971.9	5 748 305.2	12	FA, PSD, SC
FE7e_03	393 569.7	5 749 546.2	10.5	FA, PSD
FE7f_01	394 683.0	5 750 306.8	10	FA, PSD

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]				
Station	Easting	Northing	Depth [m BSL]	Sample Acquisition
FE7g_01	397 060.6	5 749 907.1	9	FA, PSD
FE7g_02	398 410.2	5 749 373.2	11	FA, PSD
FE7g_03	399 473.2	5 748 809.2	16	FA, PSD, SC

Notes
BSL = Below sea level
SC = Sediment chemistry sample
PSD = Particle size distribution
FA = Faunal sample A

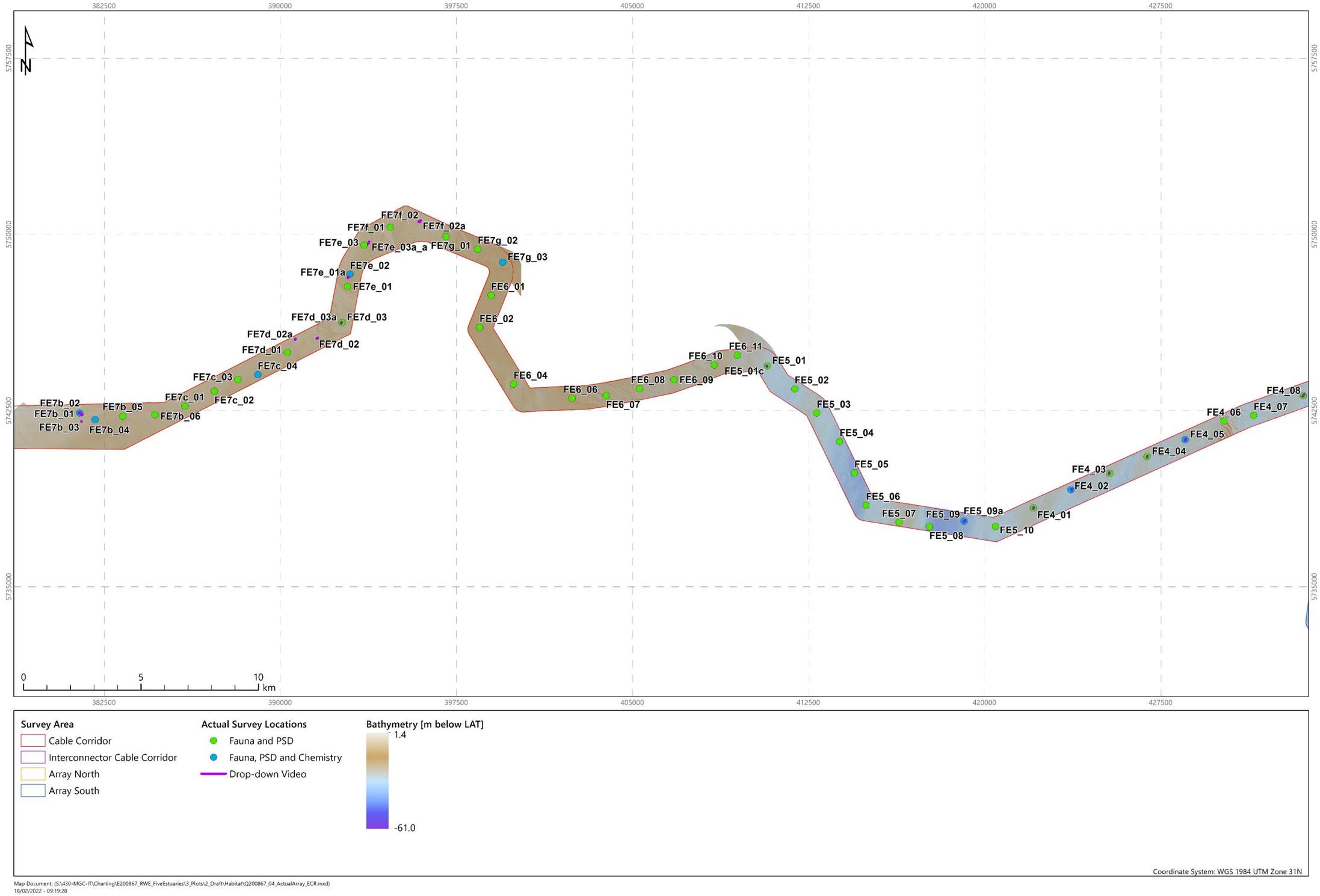


Figure 4.3: Completed environmental sampling locations within the export cable route, overlain on bathymetry data

4.2 Seabed Habitats and Fauna

4.2.1 Main Arrays and Interconnector

Three locations in the north array were investigated by means of drop-down video.

Station FE1_01 in the south-western extents of the north array, and station FE1_02 in the north-western extents of the north array were selected to investigate an area of irregular and/or rough seabed. The sediments at these stations comprised sandy gravel/gravelly sand with a mud component and a varying proportion of cobbles and were in water depths > 35 m below sea level (BSL). These sediments were classified as the EUNIS biotope complex 'Circalittoral mixed sediment' (A5.44).

At station FE1_01 patches of exposed consolidated clay (and fragmented clays) were recorded as a matrix within the mixed sediments. Due to the presence of the consolidated clay the EUNIS biotope 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) was also assigned to this station.

Station FE1_04, in the western extents of the north array, was selected to investigate rough ground within an area of mobile sands. The sediments at this location comprised rippled sand with a varying proportion of pebbles, cobbles and shell fragments in water depths of 41 m BSL. These sediments were classified as the EUNIS biotope complex 'Circalittoral coarse sediment' (A5.14).

Table 4.5 presents the EUNIS classification hierarchy for the habitats observed within the north array, together with the corresponding JNCC (2015) classification. Figure 4.4 spatially displays the habitat distribution across the north array and highlights occurrences of potential sensitive habitats.

Table 4.5: Habitat classifications, main arrays and interconnector route

EUNIS (EEA, 2019) Habitat Classification					Equivalent JNCC (2015) Classification
Environment Level 1	Broad Habitat Level 2	Habitat Level 3	Biotope Complex Level 4	Biotope Level 5	
A Marine	A4 Sublittoral rock and other hard substrata	A4.2 Atlantic and Mediterranean moderate energy circalittoral rock	A4.23 Communities on soft circalittoral rock	A4.231 Piddocks with sparse associated fauna in sublittoral very soft chalk or clay	CR.MCR.SfR.Pid Piddocks with sparse associated fauna in sublittoral very soft chalk or clay
	A5 Sublittoral sediment	A5.1 Sublittoral coarse sediment	A5.14 Circalittoral coarse sediment	-	SS.SCS.CCS Circalittoral coarse sediment
		A5.4 Sublittoral mixed sediment	A5.44 Circalittoral mixed sediment	-	SS.SMx.CMx Circalittoral mixed sediment

Notes
EUNIS = European Nature Information System
EEA = European Environment Agency
JNCC = Joint Nature Conservation Committee

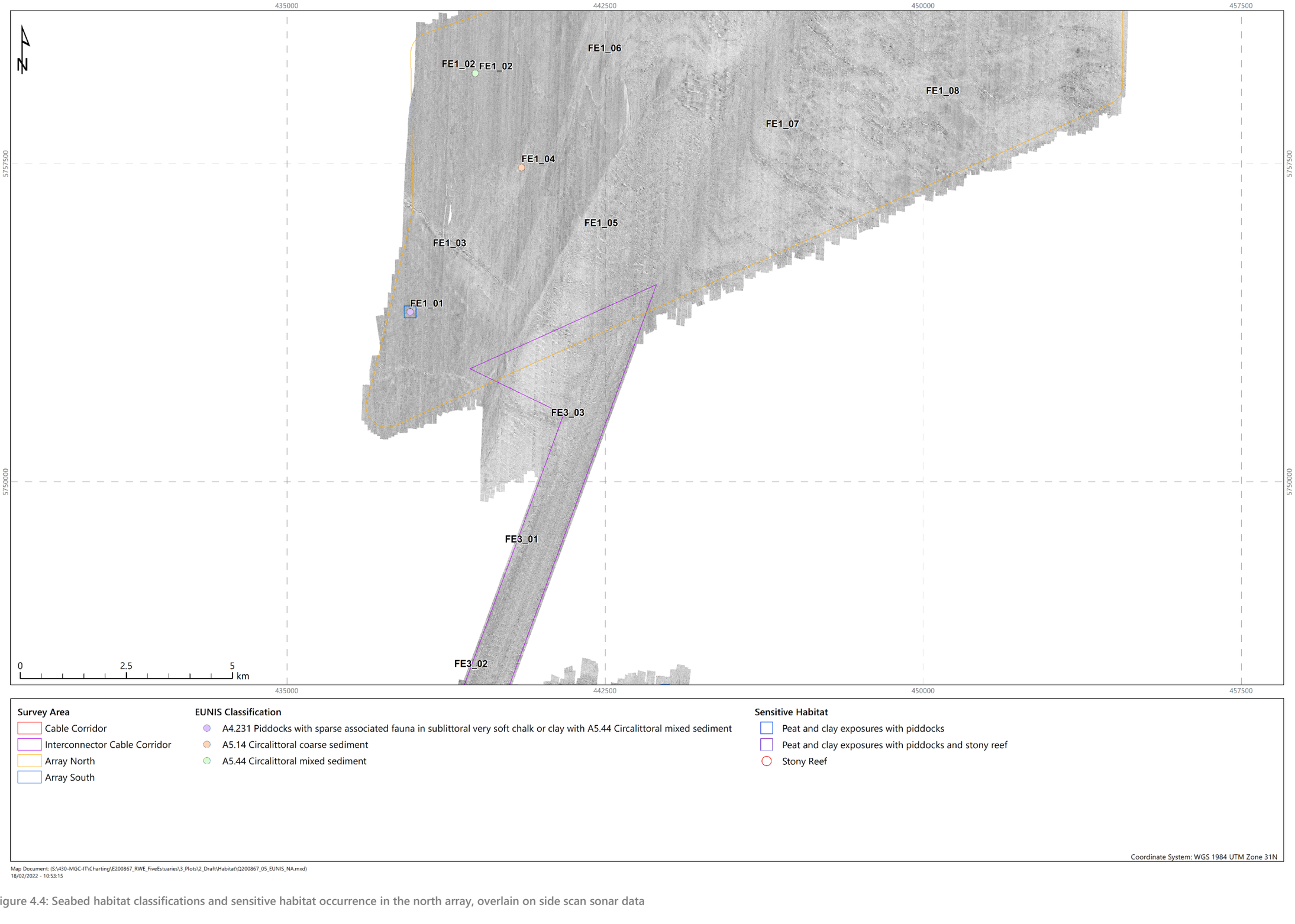


Figure 4.4: Seabed habitat classifications and sensitive habitat occurrence in the north array, overlain on side scan sonar data

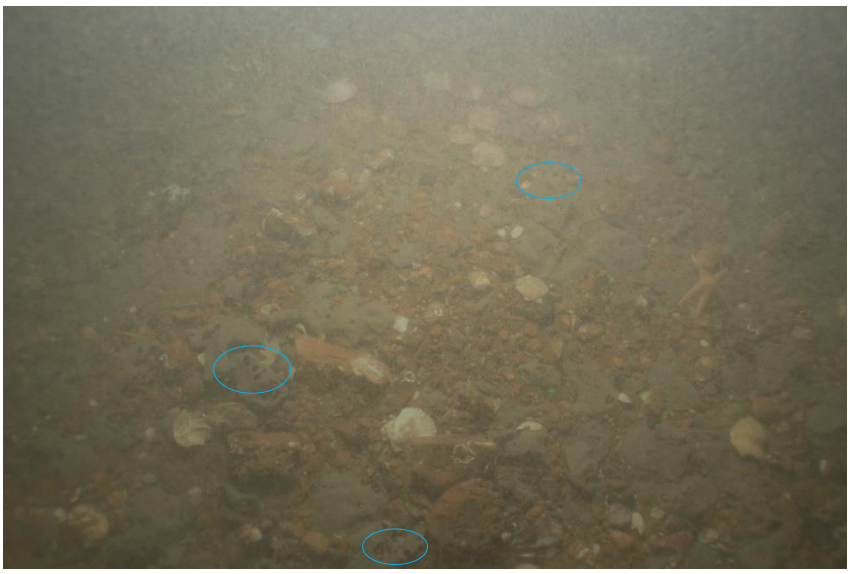
4.2.1.1 Piddocks with Sparse Associated Fauna in Sublittoral Very Soft Chalk or Clay (A4.231)

'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) occurs on circalittoral soft rock, such as soft chalk or clay and has been most frequently report from tide-swept areas off the south-east of England (Tillin & Hill, 2016). The rock is sufficiently soft to be bored by bivalves, with the piddock *Pholas dactylus* the most widespread borer recorded. As soft chalk and firm clay are often too soft for sessile filter-feeding animals to colonise in large numbers, an extremely impoverished sessile epifauna is typically seen. Mobile fauna often includes the crabs *Necora puber* and *Cancer pagurus* (EEA, 2019).

Areas of firm clay seabed occurred patchily in association with the biotope complex 'Circalittoral mixed sediment' (A5.44) at one station within the north array (station FE1_01). Small pieces of firm clay were also recovered from the grab sample acquired at station FE1_02. These firm clay sediments were shown by seabed photography to have the characteristic round burrows of piddocks. As is typical of this biotope, the clay seabed itself had little or no attached epifauna. The most commonly occurring mobile epifauna reported from this biotope were starfish (*Asterias rubens*), hermit crabs (Paguridae) and brittlestars (Ophiuroidea including *Ophiura albida*). It should be noted, however, that as this biotope occurred in relatively small patches within the biotope complex 'Circalittoral mixed sediment' (A5.44), some overlap of epifauna from the adjacent habitat was likely to have occurred.

Figure 4.5 presents example grab sample and seabed photographs of this biotope.

A



A: Photograph FE1_01_20

'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) with 'Circalittoral mixed sediment' (A5.44)

Firm clay with gravel and cobbles

Starfish (*Asterias rubens*)

Queen scallop (*Aequipecten opercularis*)

Bioturbation (likely piddock burrows)

B

B: Grab sample photograph FE1_01

'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) with 'Circalittoral mixed sediment' (A5.44)

Firm clay with gravel

C

B: Grab sample photograph FE1_01

'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) with 'Circalittoral mixed sediment' (A5.44)

Sieved sample

Firm clay with gravel

Brittlestars (*Ophiura albida*)

Notes Laser distance (green) is 17 cm
Piddock holes have been circled in blue

Figure 4.5: Example grab sample and seabed photographs of 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) and 'Circalittoral mixed sediment' (A5.44)

4.2.1.2 Circalittoral Coarse Sediment (A5.14)

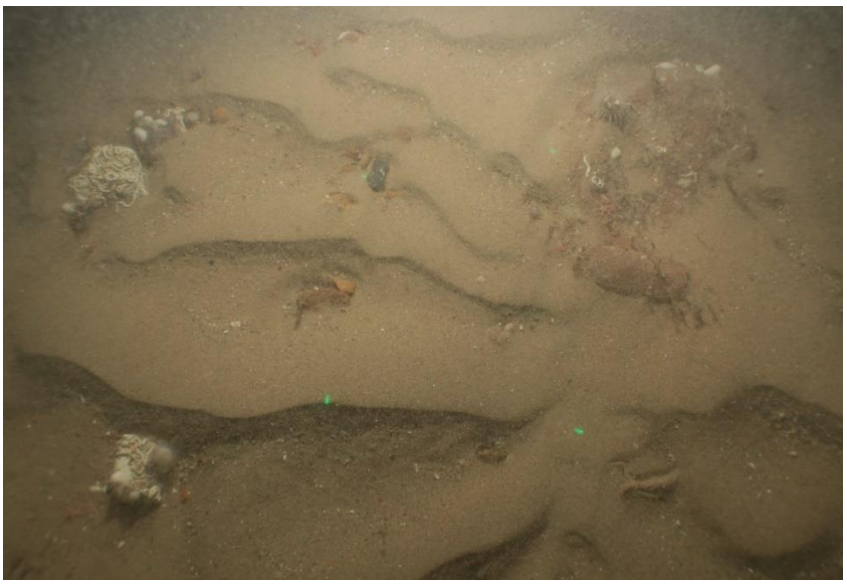
'Circalittoral coarse sediment' (A5.14) is described as 'tide-swept circalittoral coarse sands, gravel and shingle generally in depths of over 15 m to 20 m. This habitat may be found in tidal channels of marine inlets, along exposed coasts and offshore. This habitat, as with shallower coarse sediments, may be characterised by robust infaunal polychaetes, mobile crustacea and bivalves. Certain species of sea cucumber (e.g. *Neopentadactyla*) may also be prevalent in these areas along with the lancelet *Branchiostoma lanceolatum*' (EEA, 2019).

This biotope complex was assigned to station FE1_04 in the north array in an area of mobile sediments, as indicated on the geophysical data. From photographic data the seabed comprised rippled sands with patchy areas of sandy gravel and cobbles, which was corroborated by the field observations of the grab sample at this station. The SSS data also indicated patchiness in the area, with ripples mixed with rough sediments.

Characteristic fauna observed in photographic data included starfish (*A. rubens*), brittlestars (Ophiuroidea including *O. albida*), sea urchins (*Psammechinus miliaris*) and queen scallops (*Aequipecten opercularis*). Low-lying gravel and cobbles, which were subject to sediment disturbance were almost exclusively colonised by serpulid worms (Serpulidae including *Spirobranchus* sp.). The upper surface of more stable cobbles and pebbles were sparsely colonised by encrusting bryozoans, and soft coral (*Alcyonium digitatum*).

Figure 4.6 presents example grab sample and seabed photographs of this biotope complex.

A



A: Seabed photograph FE1_04_06

'Circalittoral coarse sediment' (A5.14)

Ripped gravelly sand with cobbles
Soft coral (*Alcyonium digitatum*)
Faunal turf (Hydrozoa/Bryozoa)
Serpulid worms (Serpulidae)

B

B: Seabed photograph FE1_04_07

'Circalittoral coarse sediment' (A5.14)

Sandy gravel with cobbles
Soft coral (Alcyonium digitatum)
Faunal turf (Hydrozoa/Bryozoa)
Serpulid worms (Serpulidae)
Brittlestars (Ophiuroidea)

C

C: Grab sample photograph FE1_04

'Circalittoral coarse sediment' (A5.14)

Sandy gravel

Notes Laser distance (green) is 17 cm

Figure 4.6: Example grab sample and seabed photographs of 'Circalittoral coarse sediment' (A5.14)

4.2.1.3 Circalittoral Mixed Sediment (A5.44)

'Circalittoral mixed sediment' (A5.44) is described as 'mixed (heterogeneous) sediment habitats in the circalittoral zone (generally below 15 m to 20 m) including well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in or lying upon mud, sand or gravel. Due to the variable nature of the seabed a variety of communities can develop which are often very diverse. A wide range of infaunal polychaetes, bivalves, echinoderms and burrowing anemones such as *Cerianthus lloydii* are often present in such habitat and the presence of hard substrata (shells and stones) on the surface enables epifaunal species to become established, particularly hydroids such as *Nemertesia* spp. and *Hydrallmania falcata* (EEA, 2019).

This biotope complex was assigned to the areas of mixed sediments comprising varying proportions of mud, sand, gravel, pebbles and cobbles. This biotope complex was recorded at two stations within the north array (FE1_01 and FE1_02).

Characteristic fauna present included brittlestars (Ophiuroidea), starfish (*A. rubens*), sea urchins (*P. miliaris*), anemones (*Urticina* sp.), queen scallops (*A. opercularis*), faunal turf (Hydrozoa/Bryozoa) and soft coral (*A. digitatum*). Faunal tubes (Serpulidae, including *Spirobranchus* sp.) were also frequently observed.

Figure 4.7 presents example seabed photographs of this biotope complex.

A

A: Seabed photograph FE1_01_12

'Circalittoral mixed sediment' (A5.44)

Muddy sandy gravel with cobbles
Faunal tubes (Serpulidae)
Sea urchin (*Psammechinus miliaris*)

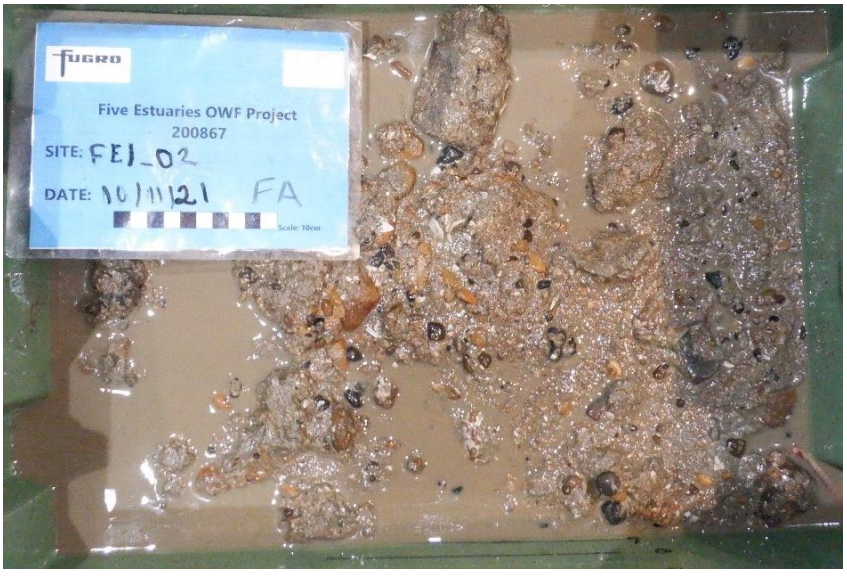
B

B: Seabed photograph FE1_01_15

'Circalittoral mixed sediment' (A5.44)

Muddy sandy gravel with cobbles and boulder
Faunal tubes (Serpulidae)
Brittlestars (Ophiuroidea)
Faunal turf (Hydrozoa/Bryozoa)

C



C: Grab sample photograph FE1_02

'Circalittoral mixed sediment' (A5.44)

Gravelly muddy sand

Notes Laser distance (green) is 17 cm

Figure 4.7: Example grab sample and seabed photographs of 'Circalittoral mixed sediment' (A5.44)

4.2.2 Export Cable Route

Stations furthest offshore, in waters depths > 20 m BSL, generally comprised gravelly muddy sand/sandy mud, with varying proportions of cobbles and shell fragments. These sediments were classified as the EUNIS biotope complex 'Circalittoral mixed sediment' (A5.44).

Stations FE4_01, FE4_02, and FE4_03, in the eastern extents of the ECC, were selected to investigate potential exposed clay. At these stations, patches of exposed consolidated clay (and fragmented clays) were recorded as a matrix within the mixed sediments. Due to the presence of the consolidated clay the EUNIS biotope 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) was also assigned to these stations.

Stations FE4_04 and FE5_09, in the eastern extents of the ECC, were also selected to investigate potential exposed clay. Although exposed clay was not evident in the photographic data, consolidated clay was retained in the grab samples at both stations. The sediment at these stations comprised gravelly sandy mud/muddy sand with a varying proportion of cobbles and shell fragments. These two stations had differing benthic assemblages and have been classified as two different biotopes '*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611) and '*Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445).

Crusts of the ross worm *Sabellaria spinulosa* were recorded at station FE4_04 associated with the mixed sediments, therefore this station was classified as the biotope '*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611).

Dense aggregations of brittlestars (*Ophiothrix fragilis*) were recorded at stations FE4_05 and FE5_09 associated with the mixed sediments, therefore these stations were classified as the biotope '*Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445).

Three stations (FE7b_03, FE7d_02a and FE7f_02a) located in waters depths < 20 m BSL, generally comprised gravelly muddy sand/sandy mud, with varying proportions of cobbles and shell fragments. These sediments were classified as the EUNIS biotope complex 'Infralittoral mixed sediment' (A5.43).

Poor underwater visibility encountered at four shallow water stations (FE7b_02, FE7d_03a, FE7e_01a and FE7e_03a) meant that the exact sediment composition could not be determined from photographic data alone. Therefore, it was considered appropriate to leave the EUNIS classification at the broad habitat level 'Sublittoral sediment' (A5) for two stations (FE7b_02 and FE7e_01a). Grab samples were acquired at these stations, and the EUNIS classification for these stations will be further refined in the ecology monitoring report. The other two stations (FE7d_03a and FE7e_01a) were classified as the EUNIS habitat 'Sublittoral sand' (A5.2), with no grab samples acquired at these locations and will therefore not be further refined.

Table 4.5 presents the EUNIS classification hierarchy for the habitats observed within the ECC, together with the corresponding JNCC (2015) classification and Figure 4.8 spatially displays the habitat distribution across the survey area and highlight occurrences of potential sensitive habitats.

Table 4.6: Habitat classifications, export cable route

EUNIS (EEA, 2019) Habitat Classification					Equivalent JNCC (2015) Classification
Environment Level 1	Broad Habitat Level 2	Habitat Level 3	Biotope Complex Level 4	Biotope Level 5	
A Marine	A4 Sublittoral rock and other hard substrata	A4.2 Atlantic and Mediterranean moderate energy circalittoral rock	A4.23 Communities on soft circalittoral rock	A4.231 Piddocks with sparse associated fauna in sublittoral very soft chalk or clay	CR.MCR.SfR.Pid Piddocks with sparse associated fauna in sublittoral very soft chalk or clay
		A5.2 Sublittoral sand	-	-	SS.SSa Sublittoral sands and muddy sands
		A5.4 Sublittoral mixed sediment	A5.43 Infralittoral mixed sediment	-	SS.SMx.IMx Infralittoral mixed sediment
			A5.44 Circalittoral mixed sediment	A5.445 *Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment	SS.SMx.CMx.OphMx *Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment
		A5.6 Sublittoral biogenic reef	A5.6 Sublittoral polychaete worm reefs on sediment	A5.611 *Sabellaria spinulosa* on stable circalittoral mixed sediment	SS.SBR.PoR.SspiMx *Sabellaria spinulosa* on stable circalittoral mixed sediment

Notes
EUNIS = European Nature Information System
JNCC = Joint Nature Conservation Committee
EEA = European Environment Agency

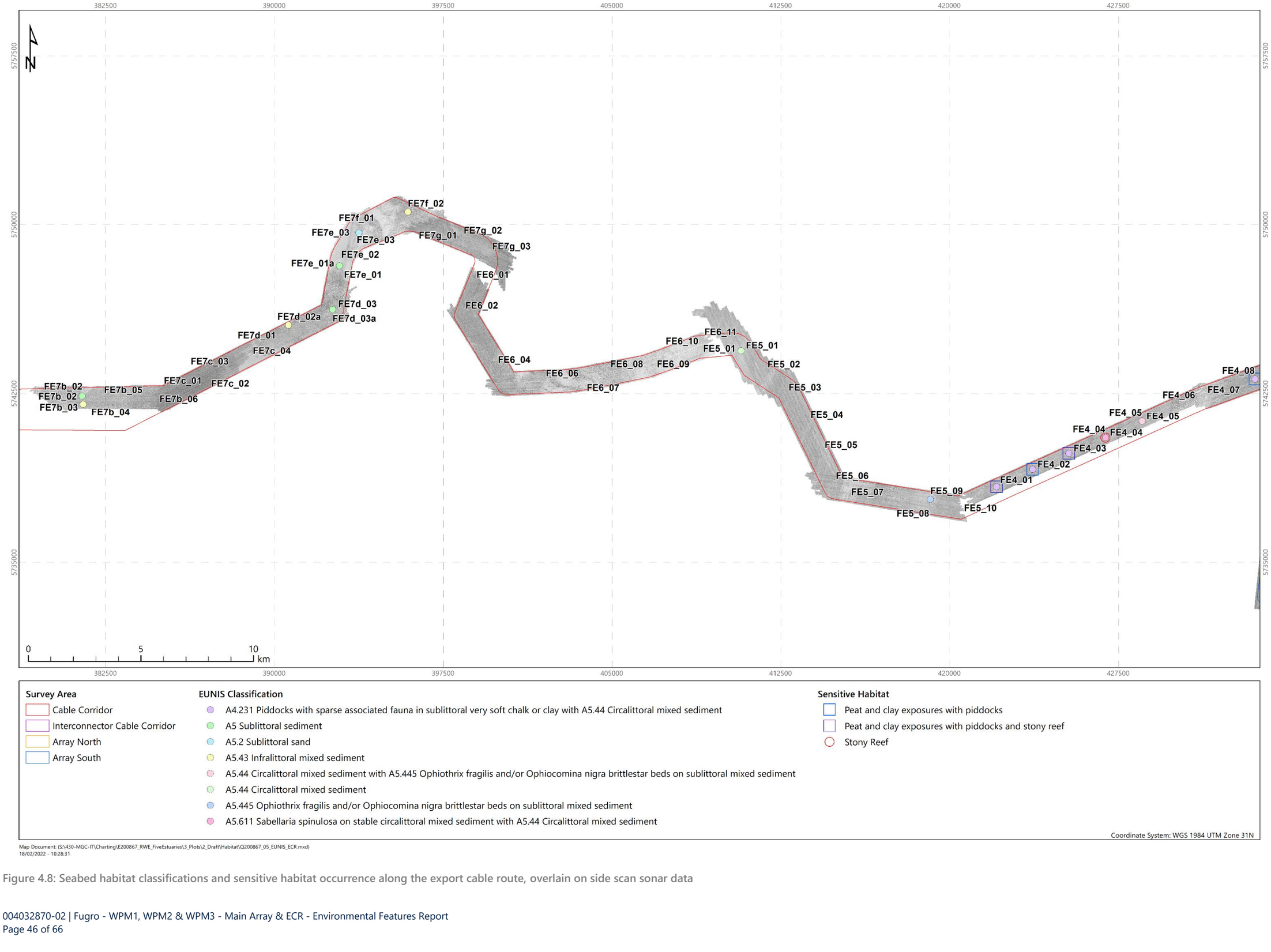


Figure 4.8: Seabed habitat classifications and sensitive habitat occurrence along the export cable route, overlain on side scan sonar data

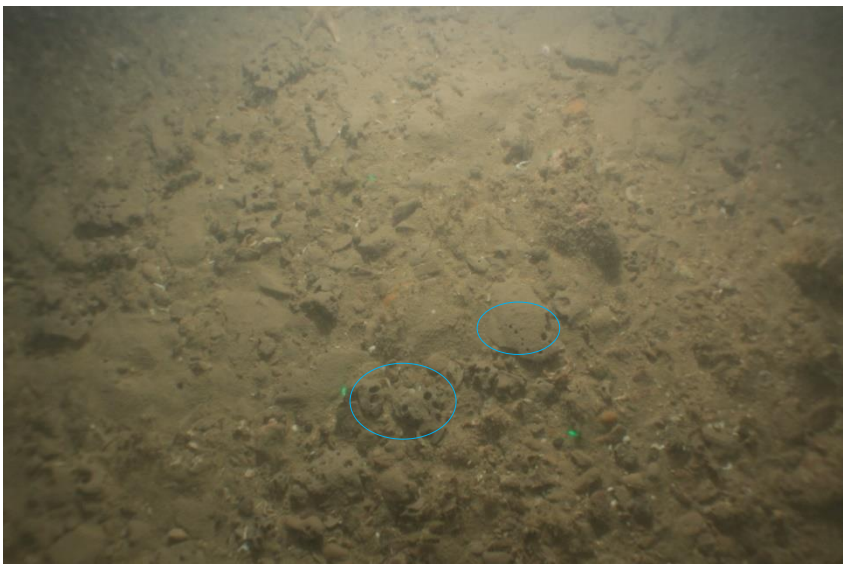
4.2.2.1 Piddocks with Sparse Associated Fauna in Sublittoral Very Soft Chalk or Clay (A4.231)

'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) occurs on circalittoral soft rock, such as soft chalk or clay and has been most frequently report from tide-swept areas off the south-east of England (Tillin & Hill, 2016). The rock is sufficiently soft to be bored by bivalves, with the piddock *Pholas dactylus* the most widespread borer recorded. As soft chalk and firm clay are often too soft for sessile filter-feeding animals to colonise in large numbers, an extremely impoverished sessile epifauna is typically seen. Mobile fauna often includes the crabs *Necora puber* and *Cancer pagurus* (EEA, 2019).

Areas of firm clay seabed occurred patchily at three stations within the ECC (stations FE4_01, FE4_02, and FE4_03). Small pieces of firm clay were also recovered from the grab sample acquired at station FE4_08. These firm clay sediments were shown by seabed photography to have the characteristic round burrows of piddocks. As is typical of the biotope, the clay seabed itself had little or no, attached epifauna. The most commonly occurring mobile epifauna reported from this biotope were starfish (*Asterias rubens*), hermit crabs (Paguridae) and brittlestars (Ophiuroidea including *Ophiura albida*). It should be noted however, that as this biotope occurred in relatively small patches within the biotope complex 'Circalittoral mixed sediment' (A5.44), some overlap of epifauna from the adjacent habitat was likely to have occurred.

Figure 4.9 presents example grab sample and seabed photographs of this biotope complex.

A



A: Seabed photograph FE4_01_13

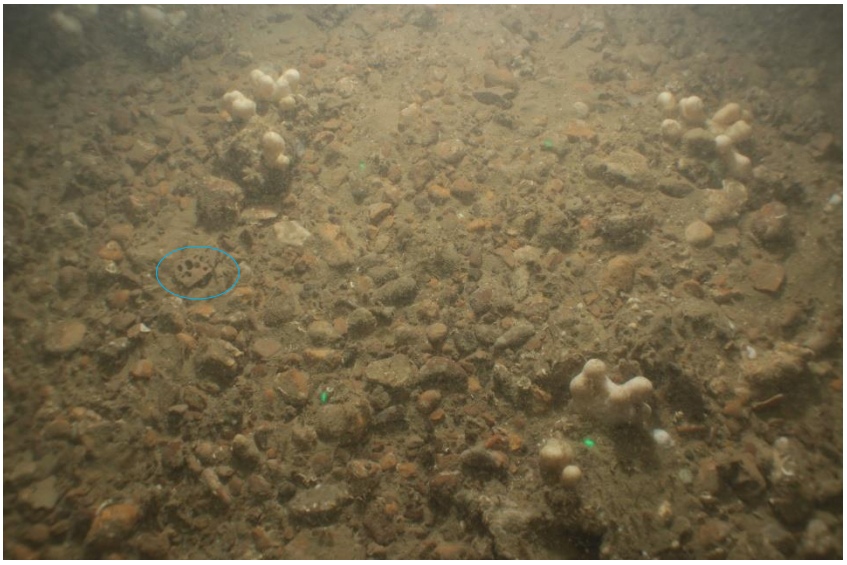
'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231)

Gravelly sandy mud/muddy sand with firm clay fragments

Starfish (*Asterias rubens*)

Bioturbation (likely piddock burrows)

B



B: Seabed photograph FE4_02_08

'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231)

Gravelly sandy mud/muddy sand with firm clay fragments

Soft coral (*Alcyonium digitatum*)

Bioturbation (likely piddock burrows)

C

C: Grab sample photograph FE4_01

'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231)

Sieved sample

Firm clay

Notes Laser distance (green) is 17 cm Piddock holes have been circled in blue

Figure 4.9: Example grab sample and seabed photographs of 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231)

4.2.2.2 Infralittoral Mixed Sediment (A5.43)

'Infralittoral mixed sediment' (A5.43) is described as shallow mixed (heterogeneous) sediments in fully marine or near fully marine conditions, supporting various animal-dominated communities, with relatively low proportions of seaweeds. This biotope complex may include well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in mud, sand or gravel. Due to the quite variable nature of the sediment type, a widely variable array of communities may be found (EEA, 2019).

This biotope complex was assigned to areas of mixed sediments comprising varying proportions of mud, sand and gravel observed along the nearshore sections of the ECC (stations FE7b_03, FE7d_02a and FE7f_02a) located in waters depths < 20 m BSL. Sparse fauna was observed from the photographic data due to poor visibility, therefore images of this biotope complex have not been presented. Fauna recorded included bryozoan (*Flustra foliacea*), soft coral (*A. digitatum*) and faunal turf (Hydrozoa/Bryozoa).

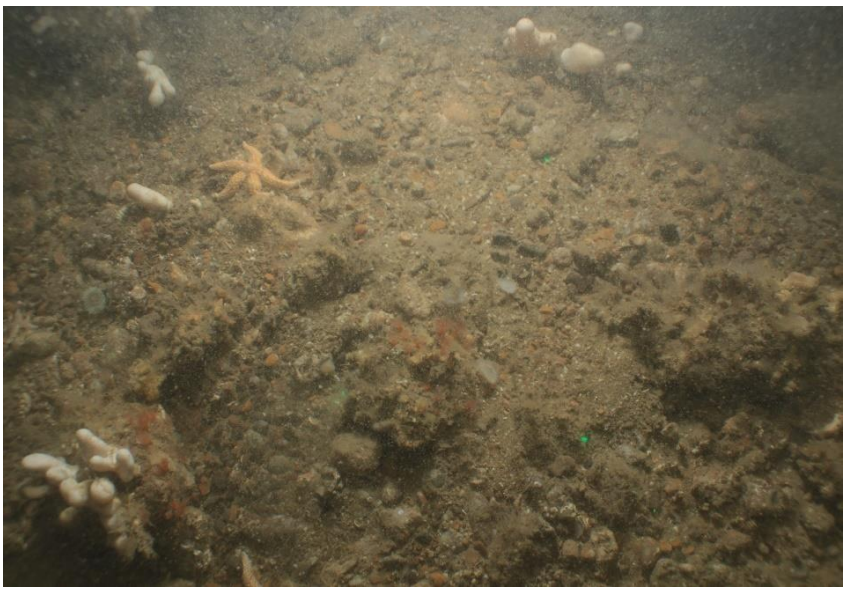
4.2.2.3 Circalittoral Mixed Sediment (A5.44)

'Circalittoral mixed sediment' (A5.44) is described as 'mixed (heterogeneous) sediment habitats in the circalittoral zone (generally below 15 m to 20 m) including well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in or lying upon mud, sand or gravel. Due to the variable nature of the seabed a variety of communities can develop which are often very diverse. A wide range of infaunal polychaetes, bivalves, echinoderms and burrowing anemones such as *Cerianthus lloydii* are often present in such habitat and the presence of hard substrata (shells and stones) on the surface enables epifaunal species to become established, particularly hydroids such as *Nemertesia* spp. and *Hydrallmania falcata* (EEA, 2019).

This biotope complex was assigned to the areas of mixed sediments comprising varying proportions of mud, sand, gravel, pebbles and cobbles. This biotope complex was reported along the sections of the ECC furthest offshore. 'Circalittoral mixed sediments' was the most frequently recorded biotope complex across the ECC, occurring at 6 stations (stations FE4_01, FE4_02, FE4_03, FE4_05, FE4_08 and FE5_01). Characteristic fauna present included brittlestars (Ophiuroidea, including *Ophiothrix fragilis*), starfish (*A. rubens*), sea urchins (*P. miliaris*), anemones (Actiniaria including *Urticina* sp. and Sagartiidae), queen scallops (*A. opercularis*) and faunal turf (Hydrozoa/Bryozoa). Faunal tubes (Serpulidae, including *Spirobranchus* sp.) were also frequently observed.

Figure 4.10 presents example seabed photographs of this biotope complex.

A



A: Seabed photograph FE4_03_07

'Circalittoral mixed sediment' (A5.44)

Gravelly muddy sand with cobbles
Starfish (*Asterias rubens*)
Soft coral (*Alcyonium digitatum*)
Anemones (Actiniaria)

B

B: Seabed photograph FE4_05_16

'Circalittoral mixed sediment' (A5.44)

Muddy sandy gravel with pebbles and cobbles
Faunal tubes (Serpulidae)
Soft coral (*Alcyonium digitatum*)
Anemones (Actiniaria)

C

C: Grab sample photograph FE4_05

'Circalittoral mixed sediment' (A5.44)

Muddy gravelly sand/sandy gravel

Notes Laser distance (green) is 17 cm

Figure 4.10: Example grab sample and seabed photographs of 'Circalittoral mixed sediment' (A5.44)

4.2.2.4 *Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment (A5.445)

'Ophiothrix fragilis and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445) is described as a circalittoral sediments which is characterised by dense aggregations of brittlestars. The abundance of the brittlestars may be patchy throughout the biotope. Taxa associated with this biotope include, soft coral (*A. digitatum*), anemones, and hydroids. The underlying sediments also contain a diverse infaunal community (EEA, 2019).

This biotope was observed at stations FE4_05 and FE5_09. The characteristic epifauna present included dense aggregations of brittlestars (*Ophiothrix fragilis*). Other taxa included faunal turf (Hydrozoa/Bryozoa), sea urchins (*P. miliaris*), soft coral (*A. digitatum*), anemones (*Urticina* sp. and Sagartiidae) and starfish (*A. rubens*).

Figure 4.12 presents example seabed photographs of this biotope complex.

A

A: Seabed Photograph FE4_05_18

'Ophiothrix fragilis and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445)

Sandy muddy gravel

Brittlestars (*Ophiothrix fragilis*)

Anemones (Actinaria)

B

B: Seabed photograph FE5_09a_05

'Ophiothrix fragilis and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445)

Gravely sandy mud/muddy sand

Brittlestars (*Ophiothrix fragilis*)

C

B: Grab sample photograph FE5_09

'*Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445)

Sieved sample

Brittlestar (*Ophiothrix fragilis*)

Sea urchin (*Psammechinus miliaris*)

Notes Laser distance (green) is 17 cm

Figure 4.11: Example grab sample and seabed photographs of *'Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445)

4.2.2.5 *Sabellaria spinulosa* on Stable Circalittoral Mixed Sediment (A5.611)

'Sabellaria spinulosa on stable circalittoral mixed sediment' (A5.611) is described as 'the tube-building polychaete *Sabellaria spinulosa* at high abundances on mixed sediment. These species typically form loose agglomerations of tubes forming a low-lying matrix of sand, gravel, mud and tubes on the seabed. The infauna comprises typical sublittoral polychaete species such as *Protodorvillea kefersteini, Pholoe synophthalmica, Harmothoe* spp*., Scoloplos armiger, Mediomastus fragilis, Lanice conchilega* and cirratulids, together with the bivalve *Abra alba*, and tube building amphipods such as *Ampelisca* spp.. The epifauna comprise a variety of bryozoans including *Flustra foliacea, Alcyonidium diaphanum* and *Cellepora pumicosa*, in addition to calcareous tubeworms, pycnogonids, hermit crabs and amphipods' (EEA, 2019).

This biotope was observed at station FE4_04. The characteristic epifauna present included ross worm (*Sabellaria spinulosa*), faunal turf (Hydrozoa/Bryozoa), sea urchins (*P. miliaris*), soft coral (*A. digitatum*), anemones (*Urticina* sp. and Sagartiidae) and starfish (*A. rubens*).

Figure 4.12 presents example seabed photographs of this biotope complex.

A

A: Seabed Photograph FE4_04_03

'*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611)

Gravelly muddy sand with cobbles
Ross worm (*Sabellaria spinulosa*)
Soft coral (*Alcyonium digitatum*)

B

B: Seabed photograph FE4_04_13

'*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611)

Gravelly muddy sand with cobbles
Ross worm (*Sabellaria spinulosa*)
Soft coral (*Alcyonium digitatum*)
Starfish (*Asterias rubens*)
Anemones (Actinaria)

C

B: Seabed photograph FE4_04

'*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611)

Sieved sample
No observed conspicuous fauna

Notes Laser distance (green) is 17 cm

Figure 4.12: Example grab sample and seabed photographs of '*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611)

4.3 Potential Sensitive Habitats and Species

4.3.1 Main Arrays and Interconnector

4.3.1.1 Peat and Clay Exposures with Piddocks

Peat and clay exposures with piddocks are classified as a UKBAP listed priority habitat ('Peat and clay exposures with piddocks') and a MCZ Habitat FOCI ('Peat and clay exposures'). Piddocks are elongated burrowing bivalves and include *Pholas dactylus, Barnea candida* and *Barnea parva*. These are capable of boring into the soft peat and clay, creating a unique and fragile habitat (JNCC, 2011a).

Peat and clay exposures with either existing or historical evidence of piddock activity are unusual communities of limited extent. This habitat has been reported intertidally on southern coasts of the UK, from the north-west coast to the south and east coasts of England. Although the distribution of the subtidal element of this habitat is relatively unknown, they are likely to occur near intertidal occurrences.

Patchily distributed, clay exposures were observed from the seabed video in the north array (station FE1_01).

No peat was observed from either the seabed photographic data or from the grab samples.

4.3.1.2 Subtidal Sands and Gravels

Subtidal sands and gravels are classified as a priority habitat and a Marine Conservation Zone (MCZ) Habitat FOCI although it is recognised that this habitat is the most common habitat present subtidally around the coast of the UK (JNCC, 2011b).

'Sublittoral sand and gravel' habitats occur in a wide variety of environments and range from mainly sand, through various combinations of sand and gravel, to mainly gravel. The JNCC biotope complex 'Circalittoral coarse sediment' (SS.SCS.CCS) observed within the north array is categorised within this broad habitat. Although 'Subtidal sands and gravels' are identified as a priority habitat and thought to be of conservation importance, this habitat is widespread within UK waters and represented elsewhere in the MPA network (JNCC, 2015).

4.3.1.3 Stony Reef

To qualify as a 'stony reef' there should be a minimum elevation of 64 mm above the seabed, a coverage of at least 10 % cobbles and boulders and a minimum area extent of 25 m^2. However, if 'low' is scored in any of the categories a strong justification would be required to consider the reef as contributing to the Marine Natura site network of qualifying reefs in terms of the EU Habitats Directive (Irving, 2009).

The habitat biotopes 'Circalittoral mixed sediment' (A5.44), which include mosaics of shell, cobbles and pebbles were observed within the North array. Due to the presence of cobbles, and occasional boulders in the photographic data, a stony reef assessment was required at all three stations. All of the areas assessed were classified as 'not a reef' (Table 4.7).

Table 4.7: Summary of 'Stony reef' classifications

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]							
Transect		Easting	Northing	Stony Reef Characteristics			
				% Cover Cobbles and Boulders	Elevation	Epifaunal Coverage	Overall Assessment
FE1_01	SOL	437 890.1	5 753 947.0	< 10	< 64 mm	< 80	Not a Reef
	EOL	437 903.4	5 754 015.0				
FE1_02	SOL	439 425.0	5 759 580.0	< 10	< 64 mm	< 80	Not a Reef
	EOL	439 430.8	5 759 641.0				
FE1_04	SOL	440 525.7	5 757 342.0	< 10	Flat seabed	< 80	Not a Reef
	EOL	440 521.6	5 757 366.0				
	SOL	440 521.6	5 757 366.0	< 10	< 64 mm	< 80	Not a Reef
	EOL	440 533.1	5 757 432.0				
	EOL	440 533.1	5 757 432.0				
	SOL	440 533.1	5 757 432.0	< 10	Flat seabed	< 80	Not a Reef
	EOL	440 533.6	5 757 442.0				
Key:		Not a Reef			Low Reef		

4.3.1.4 Other Potentially Sensitive Habitats and Species

No other Annex I habitats, OSPAR threatened and/or declining species and habitats or UK BAP priority habitats and species were observed within the Five Estuaries north array.

4.3.2 Export Cable Route

4.3.2.1 Peat and Clay Exposures with Piddocks

Peat and clay exposures with piddocks are classified as a UKBAP listed priority habitat ('Peat and clay exposures with piddocks') and a MCZ Habitat FOCI ('Peat and clay exposures'). Piddocks are elongated burrowing bivalves and include *Pholas dactylus, Barnea candida* and *Barnea parva*. These are capable of boring into the soft peat and clay, creating a unique and fragile habitat (JNCC, 2011a).

Peat and clay exposures with either existing or historical evidence of piddock activity are unusual communities of limited extent. This habitat has been reported intertidally on southern coasts of the UK, from the north-west coast to the south and east coasts of England. Although the distribution of the subtidal element of this habitat is relatively unknown, they are likely to occur near intertidal occurrences.

Patchily distributed clay exposures were observed from seabed video at four stations (FE4_01, FE4_02, FE4_03 and FE4_08) within the eastern offshore extents of the ECC.

No peat was observed from either the seabed photographic data or from the grab samples.

4.3.2.2 Stony Reef

To qualify as a 'stony reef' there should be a minimum elevation of 64 mm above the seabed, a coverage of at least 10 % cobbles and boulders and a minimum area extent of 25 m^2. However, if 'low' is scored in any of the categories a strong justification would be required to consider the reef as contributing to the Marine Natura site network of qualifying reefs in terms of the EU Habitats Directive (Irving, 2009).

The biotope complexes 'Infralittoral mixed sediment' (A5.43) and 'Circalittoral mixed sediment' (A5.44), which include mosaics of mud, shell, cobbles and pebbles, were widely observed across the ECC. Due to the presence of cobbles, and occasional boulders in the photographic data, a stony reef assessment was required at five stations. Where cobbles and boulders were infrequently recorded, this did not warrant a full stony reef assessment.

All of the areas assessed were classified as either 'not a reef' or 'low reef' (Table 4.8).

Along one section of DDV transect FE4_01, cobbles and boulders were classified as 'low' (10 % to 40 %). These were low-lying, matrix-supported, with sediment covering much of the low-lying surfaces. The elevation was classified as 'medium' (64 mm to 5 m), however the elevation was at the lower end of the scale, in the order of 10 cm to 20 cm. Epifauna associated with the upper surfaces of the hard substrate was predominantly short faunal turf (Hydrozoa/Bryozoa). Other taxa were sparse in comparison and included hydroids (*Nemertesia antennina*), soft coral (*A. digitatum*), bryozoans (Flustridae and *Pentapora foliacea*). Taking into consideration the percentage cover of cobbles and boulders, elevation the cobble and boulder component was classified overall as 'low' resemblance to a stony reef. Using the criteria of stability in Golding et al (2020), the stability was defined as 'possible reef biotope' whereby the cobbles and boulders has partial cover of perennial erect species. The number of key species identified from the video data (biodiversity) was classified as 'reef biotope' (≥ 3 key species). These relevant species were bryozoan (*P.foliacea*), soft coral (*A. digitatum*) and hydroids (*N. antennina*), although it should be noted these species were sparsely recorded.

Along two sections of DDV transect FE4_03, cobbles and boulders were classified as 'low' (10 % to 40 %). These were low-lying and matrix-supported. The elevation was classified as 'medium' (64 mm to 5 m), however the elevation was at the lower end of the scale, in the order of 10 cm to 20 cm. Epifauna associated with the upper surfaces of the hard substrate was predominantly faunal turf (Hydrozoa/Bryozoa) and soft coral (*A. digitatum*). Other taxa included anemones (Actinaria including Sagartiidae), hydroids (*Nemertesia antennina*) and sponges (Porifera). Taking into consideration the percentage cover of cobbles and boulders, elevation, the cobble and boulder component was classified overall as 'low' resemblance to a stony reef. Using the criteria of stability in Golding et al (2020), the stability was defined as 'possible reef biotope' whereby the cobbles and boulders has partial cover of perennial erect species. The number of key species identified from the video data (biodiversity) was classified as 'possible reef biotope' (< 3 key species). These relevant species were soft coral

(*A. digitatum*) and hydroids (*N. antennina*), although it should be noted these species were sparsely recorded.

Along the entirety of DDV transect FE4_04, cobbles and boulders were classified as 'low' (10 % to 40 %). These were low-lying and matrix-supported. The elevation was classified as 'low' (< 64 mm), therefore the cobble and boulder component was classified as 'low' resemblance to a stony reef. Using the criteria of stability in Golding et al (2020), the stability was defined as 'possible reef biotope' whereby the cobbles and boulders has partial cover of perennial erect species. The number of key species identified from the video data (biodiversity) was classified as 'possible reef biotope' (< 3 key species). These relevant species was soft coral (*A. digitatum*), although it should be noted this species were sparsely recorded.

Table 4.8: Summary of 'Stony reef' classifications

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]							
Transect		Easting	Northing	Stony Reef Characteristics			
				% Cover Cobbles and Boulders	Elevation	Epifaunal Coverage	Overall Assessment
FE4_01	SOL	422 081.2	5 738 384.0	10 – 40	64 mm – 5 m	< 80	Low
	EOL	422 088.0	5 738 350.0				
	SOL	422 088.0	5 738 350.0	< 10	Flat seabed	< 80	Not a Reef
	EOL	422 075.3	5 738 320.0				
FE4_02	SOL	423 694.8	5 739 153.0	< 10	< 64 mm	< 80	Not a Reef
	EOL	423 704.4	5 739 104.0				
FE4_03	SOL	425 304.3	5 739 864.0	< 10	< 64 mm	< 80	Not a reef
	EOL	425 306.9	5 739 850.0				
	SOL	425 306.9	5 739 850.0	10 – 40	64 mm – 5 m	< 80	Low
	EOL	425 321.6	5 739 836.0				
	SOL	425 321.2	5 739 830.0	10 – 40	< 64 mm	< 80	Low
	EOL	425 308.7	5 739 819.0				
	SOL	425 308.7	5 739 819.0	10 – 40	64 mm – 5 m	< 80	Low
	EOL	425 292.4	5 739 804.0				
FE4_04	SOL	426 928.5	5 740 559.0	10 – 40	< 64 mm	< 80	Low
	EOL	426 916.1	5 740 507.0				
FE4_05	SOL	428 559.6	5 741 294.0	< 10	Flat seabed	< 80	Not a Reef
	EOL	428 542.2	5 741 233.0				
Key:		Not a Reef		Low Reef		Medium	

4.3.2.3 *Sabellaria spinulosa* Reef

To qualify as potential Annex I biogenic reef habitat, *S. spinulosa* aggregations must occur at an elevation of greater than 2 cm and represent greater than 10 % seabed coverage; additionally, occurrences of this habitat must be at least 25 m^2 in area (Gubbay, 2007).

Table 4.9 summarises the results of the reefiness assessment undertaken. *Sabellaria spinulosa* was recorded at four stations, station FE4_04 in the offshore eastern extents of the ECC and stations (FE7b_02, FE7d_02 and FE7f_02). At all stations the *S. spinulosa* aggregations were classified as 'not a reef'.

Table 4.9: Summary of estimated *Sabellaria spinulosa* reefiness structure

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]					
Station	Video Coordinates		Reef Structure		Overall Assessment
	Easting [m]	Northing [m]	Elevation [cm]	Patchiness [% cover]	
FE4_04	426 928.5	5 740 559.0	-	-	-
	426 928.2	5 740 555.0			
	426 928.2	5 740 555.0	< 2	> 30	Not a reef
	426 930.8	5 740 551.0			
	426 930.8	5 740 551.0	< 2	> 30	Not a reef
	426 926.9	5 740 515.0			
	426 926.9	5 740 515.0	-	-	-
	426 916.1	5 740 507.0			
FE7f_02a	395 971.5	5 750 593.6	-	-	-
	395 951.8	5 750 568.3			
	395 951.8	5 750 568.3	< 2	< 10	Not a reef
	395 952.0	5 750 567.7			
	395 952.0	5 750 567.7	-	-	-
	395 948.7	5 750 556.5			
	395 948.7	5 750 556.5	< 2	< 10	Not a reef
	395 941.9	5 750 547.5			
	395 941.9	5 750 547.5	-	-	-
	395 941.7	5 750 533.2			
FE7d_02a	390 654.6	5 745 557.4	-	-	-
	390 624.3	5 745 517.2			
	390 624.3	5 745 517.2	< 2	< 10	Not a reef
	390 625.8	5 745 516.2			
	390 625.8	5 745 516.2	-	-	-
	390 626.0	5 745 516.8			
FE7b_02	381 481.1	5 742 416.6	-	-	-
	381 475.9	5 742 412.1			
	381 475.9	5 742 412.1	< 2	< 10	Not a reef
	381 474.6	5 742 410.7			
	381 474.6	5 742 410.7	-	-	-
	381 464.6	5 742 399.9			

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]					
Station	Video Coordinates		Reef Structure		Overall Assessment
	Easting [m]	Northing [m]	Elevation [cm]	Patchiness [% cover]	
	381 464.6	5 742 399.9	< 2	< 10	Not a reef
	381 454.1	5 742 393.7			
	381 454.1	5 742 393.7	-	-	-
	381 441.2	5 742 392.7			
FE7b_02	381 441.2	5 742 392.7	< 2	10 – 20	Not a reef
	381 431.1	5 742 390.9			
	381 431.1	5 742 390.9	< 2	20 – 30	Not a reef
	381 427.4	5 742 389.8			
Key	Not a reef	Low	Medium	High	

4.3.2.4 Other Potentially Sensitive Habitats and Species

No other Annex I habitats, OSPAR threatened and/or declining species and habitats or UK BAP priority habitats and species were observed within the Five Estuaries export cable route corridor.

5. Discussion

Integrated analysis of video and photographic data with geophysical data showed the sediments across the survey area were variable. The results were consistent with the predicted broad habitat distribution for the area (EMODnet, 2019) which suggest that a similar range of habitats are likely to occur.

Within the north array, in water depths > 35 m BSL the sediments were classified as 'Circalittoral mixed sediment' (A5.44), 'Circalittoral coarse sediment' (A5.14) and 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) associated with the 'Circalittoral mixed sediment' (A5.44) biotope complex.

The ECC demonstrated the greatest degree of variation in habitat type, with this largely being attributable to variations in water depth along the route. The shallowest nearshore areas located in water depths of < 20 m BSL were classified as 'Sublittoral sediment' (A5), 'Sublittoral sand' (A5.2), or 'Infralittoral mixed sediments' (A5.43). Further offshore in water depths > 20 m B, SL, sediments were classified as 'Circalittoral mixed sediment' (A5.44), which was the most widespread biotope complex across the survey area. Areas of firm clay seabed in the eastern extents of the ECC were classified as 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) and occurred in patches associated with the 'Circalittoral mixed sediment' (A5.44) biotope complex. The biotopes '*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611) and '*Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445) were also recorded in the offshore eastern extents of the ECC.

As would be expected given the variation in seabed habitat type, the faunal community present was also variable. Due to poor visibility at shallower stations it was not possible to fully determine epifaunal community associated with 'Infralittoral mixed sediments' (A5.43), but the deeper 'Circalittoral mixed sediments' (A5.44) were characterised by sessile epifauna such soft corals (*A. digitatum*), bryozoans (Flustridae) and hydroids (including *N. antennina*). Characteristic mobile fauna reported from this habitat included starfish (*Asterias rubens*), sea urchins (*P. miliaris*) and brittlestars (Ophiuroidea, including *O. albida* and *O. fragilis*). '*Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611) was characterised by variable coverage of *S. spinulosa,* faunal turf (Hydrozoa/Bryozoa), sea urchins (*P. miliaris*), soft coral (*A. digitatum*), anemones (*Urticina* sp. and Sagartiidae) and starfish (*A. rubens*). 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231) was characterised by the distinctive burrows of the piddocks; accompanying fauna included (*Asterias rubens*), hermit crabs (Paguridae) and brittlestars (Ophiuroidea including *Ophiura albida*). '*Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445) was characterised by brittlestars (*Ophiothrix fragilis*).

All of the characterising taxa recorded are typical of this area of the southern North Sea.

Based on the sediments, epifauna and habitats observed, three sensitive habitats are thought to be present within the survey area.

Occurrences of stony reef were assessed for their potential to meet the qualifying criteria of Annex I geogenic reef habitat (Irving, 2009); all occurrences within the survey were either considered 'Not a reef' or 'Low reef'. Occurrences of 'Low reef' were recorded at stations FE4_01, FE4_03 and FE4_04 in the offshore eastern extents of the ECC. However, as detailed by Golding et al. (2020); it takes strong justification for a habitat to qualify as Annex I 'Stony reef' if a 'low' is scored in any of the four characteristics (composition, elevation, extent or biota).

The United Kingdom Biodiversity Action Plan (UK BAP) listed priority habitat 'Peat and clay exposures with piddocks' occurred patchily at five stations, one within the north array and four within the eastern offshore extents of the export cable route.

The JNCC biotope complex 'Circalittoral coarse sediment' (SS.SCS.CCS) observed within the north array is categorised within the broad habitat 'Subtidal sands and gravels' which are identified as a priority habitat and an MCZ Habitat FOCI.

6. Conclusions

One broad habitat, one habitat, three biotope complexes and three biotopes were identified across the survey area:

- 'Piddocks with sparse associated fauna in sublittoral very soft chalk or clay' (A4.231);
- 'Sublittoral sediment' (A5);
- 'Circalittoral coarse sediment' (A5.14);
- 'Sublittoral sand' (A5.2);
- 'Infralittoral mixed sediment' (A5.43);
- 'Circalittoral mixed sediment' (A5.44);
- *'Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment' (A5.445);
- *'Sabellaria spinulosa* on stable circalittoral mixed sediment' (A5.611).

This variability in habitat type is consistent with the EMODnet seabed habitats map. The faunal communities associated with these habitats are typical of this area of the southern North Sea.

Three potentially sensitive habitat were identified within the survey area:

- Stony reef areas with low potential to qualify as Annex I geogenic reef habitat were identified from three stations (FE4_01, FE4_03 and FE4_04) in the eastern offshore extents of the export cable route;
- The United Kingdom Biodiversity Action Plan (UK BAP) listed priority habitat 'Peat and clay exposures with piddocks' occurred patchily at five stations, one within the north array and four within the eastern offshore extents of the export cable route;
- The priority habitat and MCZ Habitat FOCI 'Subtidal sands and gravels' was identified at one station (FE1_04) in the north array.

No other sensitive habitats or species were observed within the survey area.

7. References

European Environment Agency [EEA]. (2019). *The European Nature Information Service.* http://eunis.eea.europa.eu/habitats-code-browser.jsp

European Marine Observation Data Network [EMODnet]. (2019). *Seabed Habitats Project*. http://www.emodnet-seabedhabitats.eu (EMODnet Seabed Habitats initiative (www.emodnet-seabedhabitats.eu), financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund).

Folk, R.L. (1954). The distinction between grain size and mineral composition in sedimentary-rock nomenclature. *The Journal of Geology*, *62*(4), 344-359.

Fugro. (2021a). *Fugro – WPM3 Operations/Acquisition Report – Fugro Seeker.* (Fugro Document No.: 004032864). Fugro GB Marine Limited.

Fugro. (2021b). *Fugro – WPM1, WPM2 & WPM3 Array - ECR Operations Report – Marshall Art.* (Fugro Document No.: 004032865). Fugro GB Marine Limited.

Fugro. (2022). *Fugro – WPM1 & WPM2 Array, Interconnector & ECR Operations Report – Fugro Mercator.* (Fugro Document No.: 004032863). Fugro GB Marine Limited.

Golding. N., Albrecht. J., & McBreen. F. (2020). *Refining criteria for defining areas with a 'low resemblance' to Annex I stony reef; Workshop Report.* JNCC Report No. 656, JNCC, Peterborough, ISSN 0963-8091. https://data.jncc.gov.uk/data/4b60f435-727b-4a91-aa85-9c0f99b2c596/JNCC-Report-656-FINAL-WEB.pdf

Gov.UK (2021). *Changes to the Habitats Regulations 2017. Policy paper.* https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017

Gubbay, S. (2007). *Defining and managing Sabellaria spinulosa reefs: Report of an inter-agency workshop 1-2 May, 2007*. https://data.jncc.gov.uk/data/ecdbc5ba-e200-47e3-b7c6-adf464287712/JNCC-Report-405-FINAL-WEB.pdf

Hitchin, R., Turner, J.A., & Verling, E. (2015). *Epibiota remote monitoring from digital imagery: Operational guidelines.* http://www.nmbaqcs.org/media/1591/epibiota_operational_guidelines_final.pdf

Holt, T.J., Rees, E.I., Hawkins, S.J., & Seed, R. (1998). *An overview of dynamic and sensitivity characteristics for conservation management of marine SACs. Biogenic Reefs.* Scottish Association for Marine Science (UK Marine SACs Project).

Irving, R. (2009). *The identification of the main characteristics of stony reef habitats under the Habitats Directive. Summary report of an inter-agency workshop 26-27 March 2008*. (Pub 432).

https://data.jncc.gov.uk/data/21693da5-7f59-47ec-b0c1-a3a5ce5e3139/JNCC-Report-432-FINAL-WEB.pdf

Jenkins, C., Eggleton, J., Albrcht, J., Barry, J., Duncan, G., Golding, N., and O'Connor, J. (2015). No. 7 *North Norfolk Sandbank and Saturn Reef cSAC/SCI management investigation report,* https://data.jncc.gov.uk/data/e1cafa60-03e5-411a-96b6-d7fed00dccb0/JNCC-Cefas-7-FINAL-WEB.pdf

Joint Nature Conservation Committee [JNCC]. (2011a). *UK Biodiversity Action Plan Priority Habitat Descriptions: Peat and clay exposures with piddocks*. https://hub.jncc.gov.uk/assets/6e4e3ed1-117d-423c-a57d-785c8855f28c#UKBAP-BAPHabitats-41-PeatClayExpo.pdf

Joint Nature Conservation Committee [JNCC]. (2011b). *UK Biodiversity Action Plan: Priority Habitat Descriptions: Subtidal sands and gravels*. ttps://data.jncc.gov.uk/data/c9721550-e422-4181-805d-2a0b58afa9d7/UKBAP-BAPHabitats-54-SubtidalSandsGravels.pdf

Joint Nature Conservation Committee [JNCC]. (2015). *The Marine Habitat Classification for Britain and Ireland Version 15.03*. https://mhc.jncc.gov.uk/about/

Joint Nature Conservation Committee [JNCC]. (2016). *Review of the MCZ Features of Conservation Importance*. https://data.jncc.gov.uk/data/94f961af-0bfc-4787-92d7-0c3bcf0fd083/MCZ-review-foci-201605-v7.0.pdf

Kaskela, A.M., Kotilainen, A.T., Alanen, U., Cooper, R., Green, S., Guinan, J., van Heteren, S., Kihlman, S., Van Lancker, V., & Stevenson, A. (2019). Picking up the pieces—harmonising and collating seabed substrate data for European maritime areas. *Geosciences*, *9*(2), 84.

Long, D. (2006). *BGS Detailed explanation of seabed sediment modified Folk classification*. MESH (Mapping European Seabed Habitats). https://www.researchgate.net/publication/284511408_BGS_detailed_explanation_of_seabed_sediment_modified_folk_classification/download

Oslo and Paris Commission [OSPAR]. (2008). *OSPAR List of Threatened and/or Declining Species and Habitats*. Reference Number 2008-06. OSPAR Commission.

Parry, M.E.V., 2019. *Guidance on assigning benthic biotopes using EUNIS or the Marine Habitat Classification of Britain and Ireland (Revised 2019),* Joint Nature Conservation Committee [JNCC]. Report No. 546, JNCC, Peterborough, ISSN 0963-8091.

Tillin, H.M., & Hill, J.M., 2016. *Piddocks with a sparse associated fauna in sublittoral very soft chalk or clay*. https://www.marlin.ac.uk/habitats/detail/152/piddocks_with_a_sparse_associated_fauna_in_sublittoral_very_soft_chalk_or_clay

Turner, J.A., Hitchin, R., Verling, E., & van Rein, H. (2016). *Epibiota remote monitoring from digital imagery: Interpretation guidelines.* http://www.nmbaqcs.org/media/1643/nmbaqc_epibiota_interpretation_guidelines_final.pdf

Wentworth, C. K. (1922). A scale of grade and class terms for clastic sediments. *The Journal of Geology*, *30*(5), 377-392.

Appendix A

Guidelines on Use of Report

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Appendix B

Logs

B.1 Survey Log

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
09/11/2021	01:08:23	FE5_01	HG	FA	3		410 739.0	5 744 398.9	410 746.6	5 744 408.1	11.9
09/11/2021	02:14:02	FE5_02	HG	NS	4	30	411 906.0	5 743 421.0	411 907.3	5 743 441.5	20.5
09/11/2021	02:39:31	FE5_02	HG	NS	5	30	411 906.0	5 743 421.0	411 922.5	5 743 433.9	20.9
09/11/2021	07:21:05	FE5_02	HG	NS	7	30	411 906.0	5 743 421.0	411 904.6	5 743 419.3	2.2
09/11/2021	07:45:22	FE5_02	HG	NS	8	30	411 906.0	5 743 421.0	411 913.9	5 743 410.4	13.2
09/11/2021	08:02:06	FE5_02	HG	FA	9	30	411 906.0	5 743 421.0	411 912.2	5 743 423.5	6.7
09/11/2021	08:29:45	FE5_03	HG	FA	10	26	412 839.0	5 742 381.0	412 846.6	5 742 397.9	18.5
09/11/2021	09:16:42	FE5_04	HG	FA	11	34	413 827.5	5 741 203.2	413 826.3	5 741 184.3	18.9
09/11/2021	09:41:08	FE5_05	HG	FA	12	40	414 453.9	5 739 853.3	414 455.6	5 739 845.1	8.4
09/11/2021	10:31:01	FE5_06	HG	FA	13	36	414 947.4	5 738 480.2	414 949.9	5 738 472.5	8.1
09/11/2021	11:01:10	FE5_07	HG	FA	15	24	416 360.4	5 737 761.0	416 356.7	5 737 746.5	15.0
09/11/2021	11:55:31	FE5_08	HG	FA	17	40	417 654.0	5 737 551.0	417 652.6	5 737 558.3	7.5
09/11/2021	13:09:20	FE5_09	HG	FA	18	40	419 142.9	5 737 800.3	419 128.1	5 737 791.1	17.5
09/11/2021	13:51:39	FE5_09	DG	SC	19	39	419 142.9	5 737 800.3	419 137.7	5 737 815.1	15.7
09/11/2021	14:30:45	FE4_02	DG	NT	20	32	423 692.0	5 739 131.0	423 717.6	5 739 158.2	37.3
09/11/2021	14:42:32	FE4_02	DG	NS	21	32	423 692.0	5 739 131.0	423 693.0	5 739 130.2	1.2
09/11/2021	14:57:22	FE4_02	DG	NS	22	32	423 692.0	5 739 131.0	423 697.8	5 739 144.3	14.5
09/11/2021	15:10:06	FE4_02	DG	NS	23	32	423 692.0	5 739 131.0	423 704.3	5 739 142.4	16.7
09/11/2021	15:47:57	FE4_02_50 m	DG	SC	24	32	423 692.0	5 739 131.0	423 735.0	5 739 129.6	43.1
09/11/2021	16:33:30	FE4_05	DG	SC	25		428 550.0	5 741 277.0	428 556.3	5 741 245.1	32.5

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
09/11/2021	19:04:11	FE5_10	HG	FA	26	29	420 438.0	5 737 564.0	420 459.5	5 737 566.0	21.6
09/11/2021	19:38:21	FE4_01	HG	NS	27	25	422 088.0	5 738 358.0	422 082.4	5 738 361.8	6.8
09/11/2021	20:14:47	FE4_01	HG	FA	28	25	422 088.0	5 738 358.0	422 078.8	5 738 359.0	9.3
09/11/2021	20:48:16	FE4_02	HG	FA	29	29	423 692.0	5 739 131.0	423 674.4	5 739 131.5	17.6
09/11/2021	21:35:16	FE4_03	HG	FA	30	26	425 301.0	5 739 840.0	425 320.9	5 739 835.5	20.4
09/11/2021	22:37:46	FE4_04	HG	FA	31	25	426 929.0	5 740 543.0	426 917.3	5 740 541.2	11.8
09/11/2021	23:12:31	FE4_05	HG	FA	32	25	428 550.0	5 741 277.0	428 539.4	5 741 265.1	15.9
09/11/2021	23:40:14	FE4_06	HG	FA	33	20	430 202.0	5 742 064.0	430 185.9	5 742 055.0	18.4
10/11/2021	00:04:52	FE4_07	HG	NS	34	28	431 465.0	5 742 299.0	431 455.4	5 742 290.7	12.7
10/11/2021	00:18:12	FE4_07	HG	FA	35	28	431 465.0	5 742 299.0	431 471.9	5 742 290.5	10.9
10/11/2021	01:16:13	FE4_08	HG	FA	36	30	433 566.5	5 743 146.2	433 573.9	5 743 137.9	11.2
10/11/2021	01:46:05	FE2_01	HG	FA	37	37	435 851.0	5 742 898.0	435 857.3	5 742 896.9	6.4
10/11/2021	02:18:12	FE2_02	HG	FA	38	52	436 225.0	5 741 075.0	436 222.5	5 741 088.0	13.2
10/11/2021	03:00:57	FE2_03	HG	FA	39	50	437 540.0	5 737 498.0	437 539.7	5 737 482.5	15.5
10/11/2021	03:52:48	FE2_03	DG	NS	40	50	437 540.0	5 737 498.0	437 543.0	5 737 503.2	6.0
10/11/2021	04:12:57	FE2_03	DG	NS	41	50	437 540.0	5 737 498.0	437 532.9	5 737 498.9	7.1
10/11/2021	04:38:45	FE2_03	DG	NS	42	50	437 540.0	5 737 498.0	437 541.0	5 737 495.6	2.6
10/11/2021	05:00:50	FE2_03	DG	NS	43	50	437 540.0	5 737 498.0	437 539.9	5 737 509.6	11.6
10/11/2021	05:19:56	FE2_03	DG	NS	44	50	437 540.0	5 737 498.0	437 539.0	5 737 500.8	3.0
10/11/2021	05:36:32	FE2_03	DG	NS	45	50	437 540.0	5 737 498.0	437 529.6	5 737 503.4	11.7
10/11/2021	05:39:08	FE2_03	DG	SC	46	50	437 540.0	5 737 498.0	437 495.0	5 737 418.7	91.1
10/11/2021	07:09:26	FE2_06	HG	NS	47	50	441 940.3	5 739 316.1	441 950.9	5 739 312.1	11.3

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
10/11/2021	07:48:56	FE2_04	HG	FA	48	50	439 870.0	5 742 101.0	439 887.4	5 742 099.2	17.5
10/11/2021	08:15:26	FE2_06	HG	FA	49	50	441 940.3	5 739 316.1	441 937.1	5 739 315.4	3.2
10/11/2021	08:53:29	FE2_05	HG	NS	50	46	442 677.0	5 743 137.0	442 699.4	5 743 135.4	22.4
10/11/2021	09:04:48	FE2_05	HG	NS	51	46	442 677.0	5 743 137.0	442 679.2	5 743 146.0	9.3
10/11/2021	09:12:04	FE2_05	HG	FA	52	46	442 677.0	5 743 137.0	442 684.3	5 743 140.8	8.2
10/11/2021	09:46:08	FE3_02	HG	NS	53	50	439 733.8	5 745 513.7	439 730.0	5 745 522.7	9.8
10/11/2021	10:15:02	FE3_02	HG	NS	54	50	439 733.8	5 745 513.7	439 731.4	5 745 501.1	12.9
10/11/2021	10:24:03	FE3_02	HG	FA	55	50	439 733.8	5 745 513.7	439 736.7	5 745 508.7	5.8
10/11/2021	11:15:40	FE3_01	DG	SC	56	52	440 936.2	5 748 447.8	440 948.2	5 748 452.0	12.7
10/11/2021	11:45:41	FE3_01	HG	FA	57	52	440 936.2	5 748 447.8	440 933.5	5 748 446.2	3.2
10/11/2021	12:30:41	FE3_03	HG	FA	58	52	442 019.7	5 751 415.1	442 021.0	5 751 430.3	15.3
10/11/2021	13:13:36	FE1_01	HG	NS	59	35	437 904.9	5 754 004.2	437 885.1	5 754 002.7	19.8
10/11/2021	13:22:27	FE1_01	HG	FA	60	35	437 904.9	5 754 004.2	437 900.5	5 754 008.1	5.9
10/11/2021	13:59:07	FE1_03	HG	FA	61		439 237.0	5 755 430.0	439 233.4	5 755 425.7	5.6
10/11/2021	15:03:19	FE1_05	HG	FA	62	47	442 807.0	5 755 913.0	442 804.7	5 755 900.6	12.6
10/11/2021	15:59:43	FE1_05	DG	SC	63	47	442 807.0	5 755 913.0	442 816.6	5 755 909.9	10.1
10/11/2021	16:33:18	FE1_04	HG	FA	64	40	440 530.0	5 757 411.0	440 540.7	5 757 414.0	11.1
10/11/2021	18:26:35	FE1_02	HG	NS	65	38	439 440.8	5 759 631.3	439 454.1	5 759 646.4	20.1
10/11/2021	18:34:26	FE1_02	HG	FA	66	38	439 440.8	5 759 631.3	439 441.7	5 759 646.8	15.5
10/11/2021	19:12:12	FE1_06	HG	NS	67	43	442 882.0	5 760 008.2	442 889.0	5 760 028.1	21.1
10/11/2021	19:29:53	FE1_06	HG	FA	68	43	442 882.0	5 760 008.2	442 887.4	5 760 017.8	11.0
10/11/2021	20:06:24	FE1_07	HG	FA	69	48	447 081.0	5 758 229.0	447 079.1	5 758 232.8	4.2

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
10/11/2021	21:36:01	FE1_08	HG	FA	75	48	450 866.0	5 759 026.0	450 856.0	5 759 015.6	14.4
11/11/2021	01:17:45	FE1_02	Video	SOL	76	39	439 440.8	5 759 631.3	439 406.0	5 759 518.7	117.8
11/11/2021	01:43:57	FE1_02	Still	FE1_02_01	77		439 440.8	5 759 631.3	439 422.8	5 759 560.7	72.8
11/11/2021	01:44:30	FE1_02	Still	FE1_02_02	78		439 440.8	5 759 631.3	439 425.2	5 759 580.0	53.6
11/11/2021	01:44:44	FE1_02	Still	FE1_02_03	79		439 440.8	5 759 631.3	439 428.2	5 759 585.9	47.1
11/11/2021	01:45:10	FE1_02	Still	FE1_02_04	80		439 440.8	5 759 631.3	439 433.5	5 759 593.7	38.3
11/11/2021	01:45:24	FE1_02	Still	FE1_02_05	81		439 440.8	5 759 631.3	439 434.5	5 759 597.8	34.1
11/11/2021	01:45:40	FE1_02	Still	FE1_02_06	82		439 440.8	5 759 631.3	439 433.9	5 759 604.4	27.8
11/11/2021	01:45:49	FE1_02	Still	FE1_02_07	83		439 440.8	5 759 631.3	439 434.2	5 759 608.2	24.1
11/11/2021	01:45:57	FE1_02	Still	FE1_02_08	84		439 440.8	5 759 631.3	439 434.5	5 759 611.8	20.5
11/11/2021	01:46:23	FE1_02	Still	FE1_02_09	86		439 440.8	5 759 631.3	439 429.9	5 759 620.0	15.7
11/11/2021	01:46:35	FE1_02	Still	FE1_02_10	87		439 440.8	5 759 631.3	439 427.3	5 759 623.0	15.8
11/11/2021	01:46:50	FE1_02	Still	FE1_02_11	88		439 440.8	5 759 631.3	439 428.0	5 759 625.4	14.1
11/11/2021	01:46:59	FE1_02	Still	FE1_02_12	89		439 440.8	5 759 631.3	439 428.5	5 759 627.7	12.8
11/11/2021	01:47:06	FE1_02	Still	FE1_02_13	90		439 440.8	5 759 631.3	439 428.5	5 759 630.1	12.3
11/11/2021	01:47:20	FE1_02	Still	FE1_02_14	91		439 440.8	5 759 631.3	439 429.7	5 759 635.7	11.9
11/11/2021	01:47:31	FE1_02	Still	FE1_02_15	92		439 440.8	5 759 631.3	439 431.0	5 759 639.0	12.5
11/11/2021	01:47:39	FE1_02	Video	EOL	93		439 440.8	5 759 631.3	439 431.5	5 759 641.1	13.5
11/11/2021	02:52:02	FE1_01	Video	SOL	95	35	437 904.9	5 754 004.2	437 890.1	5 753 946.9	59.2
11/11/2021	02:52:11	FE1_01	Still	FE1_01_01	96		437 904.9	5 754 004.2	437 892.6	5 753 950.6	55.0
11/11/2021	02:52:18	FE1_01	Still	FE1_01_02	97		437 904.9	5 754 004.2	437 893.9	5 753 952.9	52.5
11/11/2021	02:52:28	FE1_01	Still	FE1_01_03	98		437 904.9	5 754 004.2	437 895.1	5 753 956.9	48.3

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	02:52:35	FE1_01	Still	FE1_01_04	99		437 904.9	5 754 004.2	437 896.1	5 753 959.6	45.5
11/11/2021	02:52:42	FE1_01	Still	FE1_01_05	100		437 904.9	5 754 004.2	437 897.9	5 753 962.0	42.8
11/11/2021	02:52:50	FE1_01	Still	FE1_01_06	101		437 904.9	5 754 004.2	437 900.6	5 753 964.7	39.8
11/11/2021	02:52:56	FE1_01	Still	FE1_01_07	102		437 904.9	5 754 004.2	437 901.9	5 753 966.7	37.6
11/11/2021	02:53:04	FE1_01	Still	FE1_01_08	103		437 904.9	5 754 004.2	437 902.7	5 753 969.7	34.6
11/11/2021	02:53:13	FE1_01	Still	FE1_01_09	104		437 904.9	5 754 004.2	437 902.2	5 753 973.0	31.3
11/11/2021	02:53:25	FE1_01	Still	FE1_01_10	105		437 904.9	5 754 004.2	437 898.3	5 753 978.0	27.0
11/11/2021	02:53:31	FE1_01	Still	FE1_01_11	106		437 904.9	5 754 004.2	437 896.7	5 753 980.6	25.0
11/11/2021	02:53:37	FE1_01	Still	FE1_01_12	107		437 904.9	5 754 004.2	437 895.3	5 753 983.3	23.0
11/11/2021	02:53:44	FE1_01	Still	FE1_01_13	108		437 904.9	5 754 004.2	437 895.2	5 753 986.1	20.5
11/11/2021	02:53:49	FE1_01	Still	FE1_01_14	109		437 904.9	5 754 004.2	437 895.3	5 753 988.1	18.7
11/11/2021	02:53:58	FE1_01	Still	FE1_01_15	110		437 904.9	5 754 004.2	437 896.6	5 753 991.9	14.9
11/11/2021	02:54:07	FE1_01	Still	FE1_01_16	111		437 904.9	5 754 004.2	437 897.6	5 753 994.9	11.8
11/11/2021	02:54:16	FE1_01	Still	FE1_01_17	112		437 904.9	5 754 004.2	437 898.0	5 753 998.6	8.9
11/11/2021	02:54:21	FE1_01	Still	FE1_01_18	113		437 904.9	5 754 004.2	437 897.7	5 754 001.2	7.8
11/11/2021	02:54:24	FE1_01	Still	FE1_01_19	114		437 904.9	5 754 004.2	437 897.7	5 754 002.1	7.5
11/11/2021	02:54:30	FE1_01	Still	FE1_01_20	115		437 904.9	5 754 004.2	437 898.3	5 754 004.5	6.6
11/11/2021	02:54:38	FE1_01	Still	FE1_01_21	116		437 904.9	5 754 004.2	437 899.4	5 754 007.6	6.4
11/11/2021	02:54:52	FE1_01	Still	FE1_01_22	117		437 904.9	5 754 004.2	437 902.4	5 754 012.9	9.1
11/11/2021	02:55:00	FE1_01	Video	EOL	118		437 904.9	5 754 004.2	437 903.6	5 754 016.1	11.9
11/11/2021	03:30:06	FE1_04	Video	SOL	119	41	440 530.0	5 757 411.0	440 525.7	5 757 342.2	69.0
11/11/2021	03:30:23	FE1_04	Still	FE1_04_01	120		440 530.0	5 757 411.0	440 528.9	5 757 347.5	63.6

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	03:30:33	FE1_04	Still	FE1_04_02	121		440 530.0	5 757 411.0	440 529.3	5 757 351.8	59.3
11/11/2021	03:30:41	FE1_04	Still	FE1_04_03	122		440 530.0	5 757 411.0	440 528.0	5 757 354.8	56.2
11/11/2021	03:30:45	FE1_04	Still	FE1_04_04	123		440 530.0	5 757 411.0	440 527.5	5 757 356.5	54.6
11/11/2021	03:30:50	FE1_04	Still	FE1_04_05	124		440 530.0	5 757 411.0	440 526.6	5 757 358.8	52.3
11/11/2021	03:31:01	FE1_04	Still	FE1_04_06	125		440 530.0	5 757 411.0	440 523.0	5 757 364.3	47.3
11/11/2021	03:31:07	FE1_04	Still	FE1_04_07	126		440 530.0	5 757 411.0	440 521.4	5 757 367.5	44.4
11/11/2021	03:31:21	FE1_04	Still	FE1_04_08	127		440 530.0	5 757 411.0	440 520.4	5 757 374.1	38.1
11/11/2021	03:31:28	FE1_04	Still	FE1_04_09	128		440 530.0	5 757 411.0	440 522.9	5 757 376.5	35.3
11/11/2021	03:31:42	FE1_04	Still	FE1_04_10	129		440 530.0	5 757 411.0	440 524.6	5 757 381.6	29.9
11/11/2021	03:31:51	FE1_04	Still	FE1_04_11	130		440 530.0	5 757 411.0	440 523.0	5 757 385.1	26.8
11/11/2021	03:32:05	FE1_04	Still	FE1_04_12	131		440 530.0	5 757 411.0	440 523.1	5 757 389.3	22.8
11/11/2021	03:32:16	FE1_04	Still	FE1_04_13	132		440 530.0	5 757 411.0	440 522.3	5 757 394.1	18.6
11/11/2021	03:32:26	FE1_04	Still	FE1_04_14	133		440 530.0	5 757 411.0	440 522.8	5 757 398.9	14.1
11/11/2021	03:32:39	FE1_04	Still	FE1_04_15	134		440 530.0	5 757 411.0	440 523.4	5 757 405.1	8.8
11/11/2021	03:32:49	FE1_04	Still	FE1_04_16	135		440 530.0	5 757 411.0	440 524.3	5 757 410.1	5.7
11/11/2021	03:33:01	FE1_04	Still	FE1_04_17	136		440 530.0	5 757 411.0	440 526.9	5 757 415.8	5.8
11/11/2021	03:33:06	FE1_04	Still	FE1_04_18	137		440 530.0	5 757 411.0	440 528.0	5 757 417.6	6.9
11/11/2021	03:33:17	FE1_04	Still	FE1_04_19	138		440 530.0	5 757 411.0	440 530.4	5 757 422.1	11.1
11/11/2021	03:33:22	FE1_04	Still	FE1_04_20	139		440 530.0	5 757 411.0	440 531.6	5 757 424.2	13.3
11/11/2021	03:33:36	FE1_04	Still	FE1_04_21	140		440 530.0	5 757 411.0	440 532.9	5 757 430.3	19.5
11/11/2021	03:33:44	FE1_04	Still	FE1_04_22	141		440 530.0	5 757 411.0	440 533.0	5 757 433.8	23.0
11/11/2021	03:33:49	FE1_04	Still	FE1_04_23	142		440 530.0	5 757 411.0	440 533.3	5 757 435.8	25.1

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	03:33:57	FE1_04	Still	FE1_04_24	143		440 530.0	5 757 411.0	440 533.4	5 757 439.6	28.8
11/11/2021	03:34:02	FE1_04	Video	EOL	144		440 530.0	5 757 411.0	440 534.3	5 757 442.5	31.8
11/11/2021	05:27:50	FE4_08	Video	SOL	146	30	433 566.5	5 743 146.2	433 571.0	5 743 180.7	34.7
11/11/2021	05:28:02	FE4_08	Still	FE4_08_01	147		433 566.5	5 743 146.2	433 568.1	5 743 176.2	30.1
11/11/2021	05:28:10	FE4_08	Still	FE4_08_02	148		433 566.5	5 743 146.2	433 565.4	5 743 173.8	27.6
11/11/2021	05:28:15	FE4_08	Still	FE4_08_03	149		433 566.5	5 743 146.2	433 563.4	5 743 172.2	26.2
11/11/2021	05:28:21	FE4_08	Still	FE4_08_04	150		433 566.5	5 743 146.2	433 561.8	5 743 170.1	24.3
11/11/2021	05:28:24	FE4_08	Still	FE4_08_05	151		433 566.5	5 743 146.2	433 561.0	5 743 169.1	23.5
11/11/2021	05:28:28	FE4_08	Still	FE4_08_06	152		433 566.5	5 743 146.2	433 559.8	5 743 167.7	22.5
11/11/2021	05:28:34	FE4_08	Still	FE4_08_07	153		433 566.5	5 743 146.2	433 558.8	5 743 165.2	20.5
11/11/2021	05:28:36	FE4_08	Still	FE4_08_08	154		433 566.5	5 743 146.2	433 558.4	5 743 164.4	20.0
11/11/2021	05:28:42	FE4_08	Still	FE4_08_09	155		433 566.5	5 743 146.2	433 557.7	5 743 161.4	17.6
11/11/2021	05:28:47	FE4_08	Still	FE4_08_10	156		433 566.5	5 743 146.2	433 555.9	5 743 160.4	17.7
11/11/2021	05:28:49	FE4_08	Still	FE4_08_11	157		433 566.5	5 743 146.2	433 554.9	5 743 159.9	18.0
11/11/2021	05:28:54	FE4_08	Still	FE4_08_12	158		433 566.5	5 743 146.2	433 552.4	5 743 158.8	18.9
11/11/2021	05:28:58	FE4_08	Still	FE4_08_13	159		433 566.5	5 743 146.2	433 551.0	5 743 157.6	19.3
11/11/2021	05:29:07	FE4_08	Still	FE4_08_14	160		433 566.5	5 743 146.2	433 548.7	5 743 154.2	19.5
11/11/2021	05:29:13	FE4_08	Still	FE4_08_15	161		433 566.5	5 743 146.2	433 548.8	5 743 151.4	18.4
11/11/2021	05:29:19	FE4_08	Still	FE4_08_16	162		433 566.5	5 743 146.2	433 549.4	5 743 148.5	17.2
11/11/2021	05:29:34	FE4_08	Still	FE4_08_17	163		433 566.5	5 743 146.2	433 551.8	5 743 140.9	15.7
11/11/2021	05:29:38	FE4_08	Still	FE4_08_18	164		433 566.5	5 743 146.2	433 552.0	5 743 139.1	16.2
11/11/2021	05:29:48	FE4_08	Still	FE4_08_19	165		433 566.5	5 743 146.2	433 550.9	5 743 135.1	19.2

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	05:29:52	FE4_08	Still	FE4_08_20	166		433 566.5	5 743 146.2	433 550.8	5 743 133.3	20.3
11/11/2021	05:29:55	FE4_08	Still	FE4_08_21	167		433 566.5	5 743 146.2	433 550.7	5 743 132.1	21.2
11/11/2021	05:30:00	FE4_08	Still	FE4_08_22	168		433 566.5	5 743 146.2	433 550.7	5 743 129.8	22.8
11/11/2021	05:30:08	FE4_08	Still	FE4_08_23	169		433 566.5	5 743 146.2	433 551.3	5 743 125.6	25.6
11/11/2021	05:30:12	FE4_08	Still	FE4_08_24	170		433 566.5	5 743 146.2	433 551.5	5 743 124.2	26.6
11/11/2021	05:30:16	FE4_08	Still	FE4_08_25	171		433 566.5	5 743 146.2	433 551.3	5 743 122.0	28.5
11/11/2021	05:30:21	FE4_08	Video	EOL	172		433 566.5	5 743 146.2	433 551.2	5 743 120.2	30.2
11/11/2021	06:02:06	FE4_08a	Video	SOL	173	30	433 566.5	5 743 146.2	433 581.9	5 743 169.2	27.7
11/11/2021	06:02:47	FE4_08a	Still	FE4_08a_01	174		433 566.5	5 743 146.2	433 567.5	5 743 158.1	11.9
11/11/2021	06:03:00	FE4_08a	Still	FE4_08a_02	175		433 566.5	5 743 146.2	433 562.4	5 743 156.6	11.2
11/11/2021	06:03:06	FE4_08a	Still	FE4_08a_03	176		433 566.5	5 743 146.2	433 560.4	5 743 155.1	10.8
11/11/2021	06:03:37	FE4_08a	Still	FE4_08a_04	179		433 566.5	5 743 146.2	433 551.9	5 743 149.4	14.9
11/11/2021	06:03:44	FE4_08a	Still	FE4_08a_05	180		433 566.5	5 743 146.2	433 550.0	5 743 148.1	16.6
11/11/2021	06:03:50	FE4_08a	Still	FE4_08a_06	181		433 566.5	5 743 146.2	433 548.3	5 743 147.0	18.2
11/11/2021	06:03:56	FE4_08a	Still	FE4_08a_07	182		433 566.5	5 743 146.2	433 546.6	5 743 145.9	19.9
11/11/2021	06:04:03	FE4_08a	Still	FE4_08a_08	183		433 566.5	5 743 146.2	433 544.3	5 743 144.8	22.2
11/11/2021	06:04:17	FE4_08a	Still	FE4_08a_09	185		433 566.5	5 743 146.2	433 540.2	5 743 142.2	26.6
11/11/2021	06:04:21	FE4_08a	Still	FE4_08a_10	186		433 566.5	5 743 146.2	433 539.2	5 743 141.3	27.7
11/11/2021	06:04:24	FE4_08a	Still	FE4_08a_11	187		433 566.5	5 743 146.2	433 538.3	5 743 140.7	28.7
11/11/2021	06:04:29	FE4_08a	Still	FE4_08a_12	188		433 566.5	5 743 146.2	433 537.0	5 743 139.8	30.2
11/11/2021	06:04:29	FE4_08a	Still	FE4_08a_13	189		433 566.5	5 743 146.2	433 537.0	5 743 139.8	30.2
11/11/2021	06:04:38	FE4_08a	Still	FE4_08a_14	190		433 566.5	5 743 146.2	433 534.3	5 743 137.7	33.3

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	06:04:45	FE4_08a	Still	FE4_08a_15	191		433 566.5	5 743 146.2	433 532.3	5 743 136.9	35.4
11/11/2021	06:04:54	FE4_08a	Still	FE4_08a_16	192		433 566.5	5 743 146.2	433 529.2	5 743 135.8	38.7
11/11/2021	06:04:59	FE4_08a	Video	EOL	193		433 566.5	5 743 146.2	433 527.8	5 743 134.6	40.4
11/11/2021	08:23:11	FE4_05	Video	SOL	195	15	428 550.0	5 741 277.0	428 559.9	5 741 295.4	20.8
11/11/2021	08:23:26	FE4_05	Still	no photo	196		428 550.0	5 741 277.0	428 559.6	5 741 294.1	19.6
11/11/2021	08:23:50	FE4_05	Still	FE4_05_00	197		428 550.0	5 741 277.0	428 560.9	5 741 292.0	18.5
11/11/2021	08:24:06	FE4_05	Still	FE4_05_01	198		428 550.0	5 741 277.0	428 564.2	5 741 287.3	17.6
11/11/2021	08:24:19	FE4_05	Still	no photo	199		428 550.0	5 741 277.0	428 562.3	5 741 285.0	14.7
11/11/2021	08:24:29	FE4_05	Still	FE4_05_02	200		428 550.0	5 741 277.0	428 559.3	5 741 283.5	11.3
11/11/2021	08:24:42	FE4_05	Still	FE4_05_03	201		428 550.0	5 741 277.0	428 557.0	5 741 280.0	7.6
11/11/2021	08:24:58	FE4_05	Still	FE4_05_04	202		428 550.0	5 741 277.0	428 556.5	5 741 273.5	7.3
11/11/2021	08:25:04	FE4_05	Still	FE4_05_05	203		428 550.0	5 741 277.0	428 556.3	5 741 270.9	8.8
11/11/2021	08:25:11	FE4_05	Still	FE4_05_06	204		428 550.0	5 741 277.0	428 554.7	5 741 268.9	9.4
11/11/2021	08:25:20	FE4_05	Still	FE4_05_07	205		428 550.0	5 741 277.0	428 551.6	5 741 266.7	10.5
11/11/2021	08:25:28	FE4_05	Still	FE4_05_08	206		428 550.0	5 741 277.0	428 549.2	5 741 264.3	12.7
11/11/2021	08:25:33	FE4_05	Still	FE4_05_09	207		428 550.0	5 741 277.0	428 548.3	5 741 262.5	14.6
11/11/2021	08:25:41	FE4_05	Still	FE4_05_10	208		428 550.0	5 741 277.0	428 547.7	5 741 259.2	18.0
11/11/2021	08:25:48	FE4_05	Still	FE4_05_11	209		428 550.0	5 741 277.0	428 547.7	5 741 255.9	21.2
11/11/2021	08:25:55	FE4_05	Still	FE4_05_12	210		428 550.0	5 741 277.0	428 547.7	5 741 252.9	24.2
11/11/2021	08:26:02	FE4_05	Still	FE4_05_13	211		428 550.0	5 741 277.0	428 547.5	5 741 249.7	27.4
11/11/2021	08:26:09	FE4_05	Still	FE4_05_14	212		428 550.0	5 741 277.0	428 546.6	5 741 247.1	30.1
11/11/2021	08:26:19	FE4_05	Still	FE4_05_15	213		428 550.0	5 741 277.0	428 544.3	5 741 244.0	33.5

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	08:26:23	FE4_05	Still	FE4_05_16	214		428 550.0	5 741 277.0	428 543.6	5 741 242.6	35.0
11/11/2021	08:26:31	FE4_05	Still	FE4_05_17	215		428 550.0	5 741 277.0	428 543.2	5 741 239.3	38.3
11/11/2021	08:26:37	FE4_05	Still	FE4_05_18	216		428 550.0	5 741 277.0	428 542.9	5 741 236.9	40.7
11/11/2021	08:26:46	FE4_05	Video	EOL	217		428 550.0	5 741 277.0	428 542.2	5 741 233.2	44.5
11/11/2021	09:12:16	FE4_04	Video	SOL	218	14	426 929.0	5 740 543.0	426 928.5	5 740 559.0	16.0
11/11/2021	09:12:27	FE4_04	Still	FE4_04_00	219		426 929.0	5 740 543.0	426 928.2	5 740 555.7	12.7
11/11/2021	09:12:37	FE4_04	Still	FE4_04_01	220		426 929.0	5 740 543.0	426 929.3	5 740 552.7	9.7
11/11/2021	09:12:46	FE4_04	Still	FE4_04_02	221		426 929.0	5 740 543.0	426 931.4	5 740 549.6	7.0
11/11/2021	09:12:58	FE4_04	Still	FE4_04_03	222		426 929.0	5 740 543.0	426 934.6	5 740 544.4	5.8
11/11/2021	09:13:03	FE4_04	Still	FE4_04_04	223		426 929.0	5 740 543.0	426 935.4	5 740 542.3	6.4
11/11/2021	09:13:09	FE4_04	Still	FE4_04_05	224		426 929.0	5 740 543.0	426 935.6	5 740 539.7	7.4
11/11/2021	09:13:17	FE4_04	Still	FE4_04_06	225		426 929.0	5 740 543.0	426 936.0	5 740 536.1	9.9
11/11/2021	09:13:25	FE4_04	Still	FE4_04_07	226		426 929.0	5 740 543.0	426 936.0	5 740 532.5	12.6
11/11/2021	09:13:34	FE4_04	Still	FE4_04_08	227		426 929.0	5 740 543.0	426 935.3	5 740 528.5	15.8
11/11/2021	09:13:43	FE4_04	Still	FE4_04_09	228		426 929.0	5 740 543.0	426 934.0	5 740 524.7	19.0
11/11/2021	09:13:51	FE4_04	Still	FE4_04_10	229		426 929.0	5 740 543.0	426 932.3	5 740 521.5	21.7
11/11/2021	09:13:56	FE4_04	Still	FE4_04_11	230		426 929.0	5 740 543.0	426 931.1	5 740 519.5	23.6
11/11/2021	09:14:00	FE4_04	Still	FE4_04_12	231		426 929.0	5 740 543.0	426 930.0	5 740 517.9	25.1
11/11/2021	09:14:10	FE4_04	Still	FE4_04_13	233		426 929.0	5 740 543.0	426 926.4	5 740 514.9	28.3
11/11/2021	09:14:16	FE4_04	Still	FE4_04_14	234		426 929.0	5 740 543.0	426 924.0	5 740 513.6	29.8
11/11/2021	09:14:19	FE4_04	Still	FE4_04_15	235		426 929.0	5 740 543.0	426 923.1	5 740 512.9	30.7
11/11/2021	09:14:22	FE4_04	Still	FE4_04_16	236		426 929.0	5 740 543.0	426 922.3	5 740 512.2	31.5

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	09:14:26	FE4_04	Still	FE4_04_17	237		426 929.0	5 740 543.0	426 921.2	5 740 511.5	32.5
11/11/2021	09:14:45	FE4_04	Still	FE4_04_18	238		426 929.0	5 740 543.0	426 917.0	5 740 508.2	36.8
11/11/2021	09:14:53	FE4_04	Video	EOL	239		426 929.0	5 740 543.0	426 915.8	5 740 506.8	38.6
11/11/2021	09:51:10	FE4_03	Video	SOL	240	25	425 301.0	5 739 840.0	425 304.1	5 739 863.4	23.6
11/11/2021	09:51:18	FE4_03	Still	FE4_03_00	241		425 301.0	5 739 840.0	425 305.0	5 739 859.6	20.0
11/11/2021	09:51:22	FE4_03	Still	FE4_03_01	242		425 301.0	5 739 840.0	425 305.4	5 739 857.8	18.3
11/11/2021	09:51:26	FE4_03	Still	FE4_03_02	243		425 301.0	5 739 840.0	425 305.8	5 739 855.9	16.7
11/11/2021	09:51:35	FE4_03	Still	FE4_03_03	244		425 301.0	5 739 840.0	425 306.6	5 739 852.5	13.7
11/11/2021	09:51:42	FE4_03	Still	FE4_03_04	245		425 301.0	5 739 840.0	425 306.8	5 739 850.7	12.2
11/11/2021	09:51:50	FE4_03	Still	FE4_03_05	246		425 301.0	5 739 840.0	425 306.8	5 739 849.3	11.0
11/11/2021	09:51:54	FE4_03	Still	FE4_03_06	247		425 301.0	5 739 840.0	425 306.7	5 739 848.9	10.6
11/11/2021	09:51:57	FE4_03	Still	FE4_03_07	248		425 301.0	5 739 840.0	425 306.8	5 739 848.6	10.4
11/11/2021	09:52:01	FE4_03	Still	FE4_03_08	249		425 301.0	5 739 840.0	425 307.4	5 739 848.0	10.2
11/11/2021	09:52:04	FE4_03	Still	FE4_03_09	250		425 301.0	5 739 840.0	425 308.1	5 739 847.5	10.3
11/11/2021	09:52:09	FE4_03	Still	FE4_03_10	251		425 301.0	5 739 840.0	425 309.6	5 739 846.4	10.7
11/11/2021	09:52:16	FE4_03	Still	FE4_03_11	252		425 301.0	5 739 840.0	425 314.3	5 739 843.7	13.8
11/11/2021	09:52:24	FE4_03	Still	FE4_03_12	253		425 301.0	5 739 840.0	425 318.8	5 739 839.8	17.8
11/11/2021	09:52:29	FE4_03	Still	FE4_03_13	254		425 301.0	5 739 840.0	425 320.4	5 739 837.6	19.5
11/11/2021	09:52:35	FE4_03	Still	FE4_03_14	255		425 301.0	5 739 840.0	425 321.9	5 739 834.6	21.6
11/11/2021	09:52:47	FE4_03	Still	FE4_03_15	256		425 301.0	5 739 840.0	425 320.4	5 739 829.1	22.2
11/11/2021	09:52:56	FE4_03	Still	FE4_03_16	257		425 301.0	5 739 840.0	425 316.4	5 739 825.7	21.0
11/11/2021	09:53:02	FE4_03	Still	FE4_03_17	258		425 301.0	5 739 840.0	425 312.9	5 739 823.1	20.7

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	09:53:09	FE4_03	Still	FE4_03_18	259		425 301.0	5 739 840.0	425 309.2	5 739 819.5	22.0
11/11/2021	09:53:18	FE4_03	Still	FE4_03_19	260		425 301.0	5 739 840.0	425 305.3	5 739 813.7	26.6
11/11/2021	09:53:22	FE4_03	Still	FE4_03_20	261		425 301.0	5 739 840.0	425 303.2	5 739 811.6	28.5
11/11/2021	09:53:28	FE4_03	Still	FE4_03_21	262		425 301.0	5 739 840.0	425 299.9	5 739 808.4	31.7
11/11/2021	09:53:36	FE4_03	Still	FE4_03_22	263		425 301.0	5 739 840.0	425 294.6	5 739 804.9	35.7
11/11/2021	09:53:41	FE4_03	Video	EOL	264		425 301.0	5 739 840.0	425 290.8	5 739 803.5	37.9
11/11/2021	10:12:09	FE4_02	Video	SOL	265	28	423 692.0	5 739 131.0	423 696.1	5 739 158.2	27.5
11/11/2021	10:12:32	FE4_02	Still	FE4_02_01	266		423 692.0	5 739 131.0	423 694.0	5 739 149.5	18.6
11/11/2021	10:12:39	FE4_02	Still	FE4_02_02	267		423 692.0	5 739 131.0	423 694.0	5 739 147.7	16.8
11/11/2021	10:12:54	FE4_02	Still	FE4_02_03	268		423 692.0	5 739 131.0	423 694.4	5 739 143.7	13.0
11/11/2021	10:13:15	FE4_02	Still	FE4_02_04	270		423 692.0	5 739 131.0	423 698.8	5 739 133.4	7.2
11/11/2021	10:13:23	FE4_02	Still	FE4_02_05	271		423 692.0	5 739 131.0	423 699.8	5 739 130.1	7.8
11/11/2021	10:13:26	FE4_02	Still	FE4_02_06	272		423 692.0	5 739 131.0	423 699.9	5 739 129.1	8.1
11/11/2021	10:13:32	FE4_02	Still	FE4_02_07	273		423 692.0	5 739 131.0	423 699.7	5 739 126.8	8.8
11/11/2021	10:13:39	FE4_02	Still	FE4_02_08	274		423 692.0	5 739 131.0	423 699.1	5 739 124.0	10.0
11/11/2021	10:13:46	FE4_02	Still	FE4_02_09	275		423 692.0	5 739 131.0	423 698.3	5 739 121.7	11.3
11/11/2021	10:13:54	FE4_02	Still	FE4_02_10	276		423 692.0	5 739 131.0	423 696.9	5 739 119.7	12.3
11/11/2021	10:14:03	FE4_02	Still	FE4_02_11	277		423 692.0	5 739 131.0	423 696.3	5 739 117.7	14.0
11/11/2021	10:14:07	FE4_02	Still	FE4_02_12	278		423 692.0	5 739 131.0	423 696.5	5 739 116.4	15.3
11/11/2021	10:14:16	FE4_02	Still	FE4_02_13	279		423 692.0	5 739 131.0	423 698.6	5 739 112.4	19.7
11/11/2021	10:14:22	FE4_02	Still	FE4_02_14	280		423 692.0	5 739 131.0	423 700.5	5 739 109.7	23.0
11/11/2021	10:14:29	FE4_02	Still	FE4_02_15	281		423 692.0	5 739 131.0	423 703.5	5 739 106.2	27.4

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	10:14:35	FE4_02	Video	EOL	282		423 692.0	5 739 131.0	423 704.6	5 739 103.5	30.3
11/11/2021	10:35:43	FE4_01	Video	SOL	283	25	422 088.0	5 738 358.0	422 084.1	5 738 388.4	30.6
11/11/2021	10:35:54	FE4_01	Still	FE4_01_01	284		422 088.0	5 738 358.0	422 082.3	5 738 381.4	24.1
11/11/2021	10:36:01	FE4_01	Still	FE4_01_02	285		422 088.0	5 738 358.0	422 085.0	5 738 376.9	19.1
11/11/2021	10:36:09	FE4_01	Still	FE4_01_03	286		422 088.0	5 738 358.0	422 087.9	5 738 372.0	14.0
11/11/2021	10:36:14	FE4_01	Still	FE4_01_04	287		422 088.0	5 738 358.0	422 089.5	5 738 369.0	11.1
11/11/2021	10:36:20	FE4_01	Still	FE4_01_05	289		422 088.0	5 738 358.0	422 090.4	5 738 365.0	7.4
11/11/2021	10:36:26	FE4_01	Still	FE4_01_06	290		422 088.0	5 738 358.0	422 090.8	5 738 360.9	4.0
11/11/2021	10:36:32	FE4_01	Still	FE4_01_07	291		422 088.0	5 738 358.0	422 090.4	5 738 356.6	2.8
11/11/2021	10:36:38	FE4_01	Still	FE4_01_08	292		422 088.0	5 738 358.0	422 089.2	5 738 352.4	5.8
11/11/2021	10:36:43	FE4_01	Still	FE4_01_09	293		422 088.0	5 738 358.0	422 087.3	5 738 349.1	8.9
11/11/2021	10:36:48	FE4_01	Still	FE4_01_10	294		422 088.0	5 738 358.0	422 084.9	5 738 346.0	12.4
11/11/2021	10:36:52	FE4_01	Still	FE4_01_11	295		422 088.0	5 738 358.0	422 083.2	5 738 343.2	15.6
11/11/2021	10:36:57	FE4_01	Still	FE4_01_12	296		422 088.0	5 738 358.0	422 081.0	5 738 339.7	19.6
11/11/2021	10:37:10	FE4_01	Still	FE4_01_13	297		422 088.0	5 738 358.0	422 077.7	5 738 329.4	30.4
11/11/2021	10:37:18	FE4_01	Still	FE4_01_14	298		422 088.0	5 738 358.0	422 076.1	5 738 322.8	37.1
11/11/2021	10:37:23	FE4_01	Video	EOL	299		422 088.0	5 738 358.0	422 074.9	5 738 318.7	41.4
11/11/2021	11:03:35	FE5_09	Video	SOL	300	35	419 142.9	5 737 800.3	419 169.8	5 737 820.2	33.4
11/11/2021	11:03:43	FE5_09	Still	FE5_09_01	301		419 142.9	5 737 800.3	419 165.8	5 737 819.1	29.6
11/11/2021	11:03:49	FE5_09	Still	FE5_09_02	302		419 142.9	5 737 800.3	419 162.9	5 737 818.8	27.2
11/11/2021	11:03:57	FE5_09	Still	FE5_09_03	303		419 142.9	5 737 800.3	419 159.3	5 737 818.1	24.2
11/11/2021	11:04:06	FE5_09	Still	FE5_09_04	304		419 142.9	5 737 800.3	419 155.7	5 737 817.8	21.6

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	11:04:16	FE5_09	Still	FE5_09_05	305		419 142.9	5 737 800.3	419 151.8	5 737 817.2	19.1
11/11/2021	11:04:23	FE5_09	Still	FE5_09_06	306		419 142.9	5 737 800.3	419 149.7	5 737 816.5	17.6
11/11/2021	11:04:30	FE5_09	Still	FE5_09_07	307		419 142.9	5 737 800.3	419 147.1	5 737 816.3	16.6
11/11/2021	11:04:40	FE5_09	Still	FE5_09_08	308		419 142.9	5 737 800.3	419 146.2	5 737 813.9	14.0
11/11/2021	11:04:52	FE5_09	Still	FE5_09_09	309		419 142.9	5 737 800.3	419 147.7	5 737 808.4	9.4
11/11/2021	11:05:01	FE5_09	Still	FE5_09_10	310		419 142.9	5 737 800.3	419 149.9	5 737 802.6	7.4
11/11/2021	11:05:10	FE5_09	Still	FE5_09_11	311		419 142.9	5 737 800.3	419 149.7	5 737 797.8	7.3
11/11/2021	11:05:18	FE5_09	Still	FE5_09_12	312		419 142.9	5 737 800.3	419 148.2	5 737 794.0	8.3
11/11/2021	11:05:26	FE5_09	Still	FE5_09_13	313		419 142.9	5 737 800.3	419 145.9	5 737 790.5	10.2
11/11/2021	11:05:34	FE5_09	Still	FE5_09_14	314		419 142.9	5 737 800.3	419 141.2	5 737 788.8	11.6
11/11/2021	11:05:41	FE5_09	Still	FE5_09_15	315		419 142.9	5 737 800.3	419 135.4	5 737 788.2	14.2
11/11/2021	11:05:49	FE5_09	Still	FE5_09_16	316		419 142.9	5 737 800.3	419 129.2	5 737 786.5	19.5
11/11/2021	11:06:24	FE5_09	Video	EOL	317		419 142.9	5 737 800.3	419 113.7	5 737 775.7	38.2
11/11/2021	11:17:19	FE5_09a	Video	SOL	318	35	419 142.9	5 737 800.3	419 135.2	5 737 771.7	29.6
11/11/2021	11:17:31	FE5_09a	Still	FE5_09a_01	319		419 142.9	5 737 800.3	419 132.6	5 737 780.2	22.6
11/11/2021	11:17:34	FE5_09a	Still	FE5_09a_02	320		419 142.9	5 737 800.3	419 132.0	5 737 782.5	20.9
11/11/2021	11:17:38	FE5_09a	Still	FE5_09a_03	321		419 142.9	5 737 800.3	419 131.8	5 737 785.4	18.6
11/11/2021	11:17:42	FE5_09a	Still	FE5_09a_04	322		419 142.9	5 737 800.3	419 132.0	5 737 788.2	16.3
11/11/2021	11:17:46	FE5_09a	Still	FE5_09a_05	323		419 142.9	5 737 800.3	419 132.6	5 737 790.9	14.0
11/11/2021	11:17:50	FE5_09a	Still	FE5_09a_06	324		419 142.9	5 737 800.3	419 134.3	5 737 792.8	11.4
11/11/2021	11:17:56	FE5_09a	Still	FE5_09a_07	325		419 142.9	5 737 800.3	419 138.4	5 737 795.1	6.9
11/11/2021	11:18:03	FE5_09a	Still	FE5_09a_08	326		419 142.9	5 737 800.3	419 143.2	5 737 797.5	2.8

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	11:18:09	FE5_09a	Still	FE5_09a_09	327		419 142.9	5 737 800.3	419 146.4	5 737 799.8	3.5
11/11/2021	11:18:16	FE5_09a	Still	FE5_09a_10	328		419 142.9	5 737 800.3	419 149.4	5 737 802.2	6.7
11/11/2021	11:18:24	FE5_09a	Still	FE5_09a_11	329		419 142.9	5 737 800.3	419 152.4	5 737 804.7	10.5
11/11/2021	11:18:31	FE5_09a	Still	FE5_09a_12	330		419 142.9	5 737 800.3	419 154.3	5 737 806.6	13.0
11/11/2021	11:18:37	FE5_09a	Still	FE5_09a_13	331		419 142.9	5 737 800.3	419 155.6	5 737 808.2	15.0
11/11/2021	11:18:45	FE5_09a	Still	FE5_09a_14	332		419 142.9	5 737 800.3	419 156.8	5 737 810.1	17.0
11/11/2021	11:18:53	FE5_09a	Still	FE5_09a_15	333		419 142.9	5 737 800.3	419 158.3	5 737 811.7	19.1
11/11/2021	11:19:01	FE5_09a	Still	FE5_09a_16	334		419 142.9	5 737 800.3	419 160.3	5 737 813.1	21.5
11/11/2021	11:19:09	FE5_09a	Still	FE5_09a_17	335		419 142.9	5 737 800.3	419 162.0	5 737 814.4	23.7
11/11/2021	11:19:18	FE5_09a	Still	FE5_09a_18	336		419 142.9	5 737 800.3	419 164.0	5 737 815.8	26.1
11/11/2021	11:19:27	FE5_09a	Video	EOL	337		419 142.9	5 737 800.3	419 165.6	5 737 817.0	28.2
11/11/2021	12:41:01	FE5_01	Video	SOL	339	29	410 739.0	5 744 398.9	410 738.5	5 744 409.2	10.3
11/11/2021	12:43:12	FE5_01	Video	EOL	342		410 739.0	5 744 398.9	410 705.4	5 744 319.7	86.1
11/11/2021	13:08:17	FE5_01a	Video	SOL	343	28	410 739.0	5 744 398.9	410 699.9	5 744 330.9	78.4
11/11/2021	13:10:27	FE5_01a	Video	EOL	344		410 739.0	5 744 398.9	410 728.9	5 744 373.6	27.3
11/11/2021	14:50:53	FE5_01b	Video	SOL	345	28	410 739.0	5 744 398.9	410 720.0	5 744 373.0	32.1
11/11/2021	14:51:42	FE5_01b	Other	FE5_01b_01	346		410 739.0	5 744 398.9	410 721.6	5 744 396.7	17.5
11/11/2021	14:51:56	FE5_01b	Other	FE5_01b_02	347		410 739.0	5 744 398.9	410 721.8	5 744 404.0	17.9
11/11/2021	14:53:16	FE5_01b	Video	EOL	349		410 739.0	5 744 398.9	410 731.6	5 744 441.3	43.1
11/11/2021	15:13:47	FE5_01c	Video	SOL	350	28	410 739.0	5 744 398.9	410 732.0	5 744 358.7	40.8
11/11/2021	15:14:20	FE5_01c	Still	FE5_01c_01	351		410 739.0	5 744 398.9	410 731.5	5 744 364.5	35.2
11/11/2021	15:14:36	FE5_01c	Still	FE5_01c_02	352		410 739.0	5 744 398.9	410 726.3	5 744 367.2	34.1

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	15:14:56	FE5_01c	Still	FE5_01c_03	353		410 739.0	5 744 398.9	410 716.7	5 744 372.5	34.6
11/11/2021	15:14:56	FE5_01c	Still	FE5_01c_04	354		410 739.0	5 744 398.9	410 716.7	5 744 372.5	34.6
11/11/2021	15:15:21	FE5_01c	Still	FE5_01c_05	355		410 739.0	5 744 398.9	410 713.5	5 744 379.7	31.9
11/11/2021	15:15:43	FE5_01c	Still	FE5_01c_06	356		410 739.0	5 744 398.9	410 715.8	5 744 385.1	26.9
11/11/2021	15:16:09	FE5_01c	Still	FE5_01c_07	357		410 739.0	5 744 398.9	410 715.2	5 744 391.5	25.0
11/11/2021	15:16:29	FE5_01c	Still	FE5_01c_08	358		410 739.0	5 744 398.9	410 712.1	5 744 397.1	27.0
11/11/2021	15:16:43	FE5_01c	Video	EOL	359		410 739.0	5 744 398.9	410 711.0	5 744 399.9	28.0
11/11/2021	16:59:29	FE7f_02	Video	SOL	360	9	395 936.0	5 750 566.0	395 958.6	5 750 563.6	22.8
11/11/2021	16:59:56	FE7f_02	Still	FE7f_02_01	361		395 936.0	5 750 566.0	395 933.5	5 750 551.5	14.8
11/11/2021	17:00:04	FE7f_02	Still	FE7f_02_02	362		395 936.0	5 750 566.0	395 926.0	5 750 548.0	20.6
11/11/2021	17:00:12	FE7f_02	Still	FE7f_02_03	363		395 936.0	5 750 566.0	395 918.2	5 750 545.3	27.3
11/11/2021	17:00:18	FE7f_02	Still	FE7f_02_04	364		395 936.0	5 750 566.0	395 911.9	5 750 544.1	32.6
11/11/2021	17:00:38	FE7f_02	Video	EOL	366		395 936.0	5 750 566.0	395 890.0	5 750 541.8	52.0
11/11/2021	17:24:04	FE7e_03a	Video	SOL	367	11	393 756.8	5 749 639.0	393 775.9	5 749 662.1	30.0
11/11/2021	17:24:26	FE7e_03a	Still	FE7e_03a_01	368		393 756.8	5 749 639.0	393 769.4	5 749 650.6	17.1
11/11/2021	17:24:42	FE7e_03a	Still	FE7e_03a_02	369		393 756.8	5 749 639.0	393 763.8	5 749 644.0	8.6
11/11/2021	17:24:53	FE7e_03a	Still	FE7e_03a_03	370		393 756.8	5 749 639.0	393 761.1	5 749 641.1	4.8
11/11/2021	17:25:05	FE7e_03a	Still	FE7e_03a_04	371		393 756.8	5 749 639.0	393 758.7	5 749 638.3	2.0
11/11/2021	17:25:20	FE7e_03a	Still	FE7e_03a_05	372		393 756.8	5 749 639.0	393 756.1	5 749 634.9	4.2
11/11/2021	17:25:33	FE7e_03a	Still	FE7e_03a_06	373		393 756.8	5 749 639.0	393 753.6	5 749 632.7	7.1
11/11/2021	17:25:45	FE7e_03a	Still	FE7e_03a_07	374		393 756.8	5 749 639.0	393 751.0	5 749 631.4	9.6
11/11/2021	17:25:59	FE7e_03a	Still	FE7e_03a_08	375		393 756.8	5 749 639.0	393 747.8	5 749 630.0	12.7

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	17:26:09	FE7e_03a	Still	FE7e_03a_09	376		393 756.8	5 749 639.0	393 746.0	5 749 628.7	14.9
11/11/2021	17:26:20	FE7e_03a	Still	FE7e_03a_10	377		393 756.8	5 749 639.0	393 743.0	5 749 626.6	18.6
11/11/2021	17:26:31	FE7e_03a	Still	FE7e_03a_11	378		393 756.8	5 749 639.0	393 739.4	5 749 623.8	23.1
11/11/2021	17:26:45	FE7e_03a	Still	FE7e_03a_12	379		393 756.8	5 749 639.0	393 735.6	5 749 619.5	28.8
11/11/2021	17:27:00	FE7e_03a	Still	FE7e_03a_13	380		393 756.8	5 749 639.0	393 732.8	5 749 615.7	33.5
11/11/2021	17:27:08	FE7e_03a	Video	EOL	381		393 756.8	5 749 639.0	393 731.2	5 749 614.3	35.6
11/11/2021	17:48:45	FE7e_01a	Video	SOL	382	13	392 894.4	5 748 177.1	392 909.0	5 748 203.1	29.8
11/11/2021	17:49:00	FE7e_01a	Still	FE7e_01a_01	383		392 894.4	5 748 177.1	392 904.6	5 748 194.5	20.2
11/11/2021	17:49:22	FE7e_01a	Still	FE7e_01a_02	384		392 894.4	5 748 177.1	392 898.6	5 748 183.4	7.6
11/11/2021	17:49:30	FE7e_01a	Still	FE7e_01a_03	385		392 894.4	5 748 177.1	392 896.5	5 748 179.9	3.5
11/11/2021	17:49:46	FE7e_01a	Still	FE7e_01a_04	386		392 894.4	5 748 177.1	392 892.7	5 748 172.2	5.2
11/11/2021	17:49:57	FE7e_01a	Still	FE7e_01a_05	387		392 894.4	5 748 177.1	392 889.2	5 748 167.6	10.8
11/11/2021	17:50:06	FE7e_01a	Still	FE7e_01a_06	388		392 894.4	5 748 177.1	392 885.9	5 748 164.2	15.4
11/11/2021	17:50:22	FE7e_01a	Still	FE7e_01a_07	389		392 894.4	5 748 177.1	392 882.4	5 748 157.1	23.4
11/11/2021	17:50:28	FE7e_01a	Video	EOL	390		392 894.4	5 748 177.1	392 881.2	5 748 154.4	26.3
11/11/2021	18:20:29	FE7d_03a_a	Video	SOL	391	10	392 590.3	5 746 236.9	392 614.5	5 746 259.4	33.1
11/11/2021	18:21:25	FE7d_03a_a	Still	FE7d_03a_01	394		392 590.3	5 746 236.9	392 596.3	5 746 247.6	12.3
11/11/2021	18:21:35	FE7d_03a_a	Still	FE7d_03a_02	395		392 590.3	5 746 236.9	392 594.8	5 746 244.4	8.8
11/11/2021	18:21:38	FE7d_03a_a	Still	FE7d_03a_03	396		392 590.3	5 746 236.9	392 594.3	5 746 243.4	7.6
11/11/2021	18:21:41	FE7d_03a_a	Still	FE7d_03a_04	397		392 590.3	5 746 236.9	392 593.8	5 746 242.4	6.5
11/11/2021	18:21:52	FE7d_03a_a	Still	FE7d_03a_05	398		392 590.3	5 746 236.9	392 592.3	5 746 238.6	2.6
11/11/2021	18:22:05	FE7d_03a_a	Still	FE7d_03a_06	399		392 590.3	5 746 236.9	392 591.0	5 746 234.7	2.3

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	18:22:24	FE7d_03a_a	Still	FE7d_03a_07	400		392 590.3	5 746 236.9	392 588.7	5 746 230.2	6.9
11/11/2021	18:22:43	FE7d_03a_a	Still	FE7d_03a_08	401		392 590.3	5 746 236.9	392 587.5	5 746 226.2	11.0
11/11/2021	18:22:58	FE7d_03a_a	Still	FE7d_03a_09	402		392 590.3	5 746 236.9	392 588.0	5 746 222.8	14.3
11/11/2021	18:23:10	FE7d_03a_a	Still	FE7d_03a_10	403		392 590.3	5 746 236.9	392 587.7	5 746 220.4	16.7
11/11/2021	18:23:16	FE7d_03a_a	Still	FE7d_03a_11	404		392 590.3	5 746 236.9	392 586.9	5 746 219.9	17.3
11/11/2021	18:23:29	FE7d_03a_a	Still	FE7d_03a_12	405		392 590.3	5 746 236.9	392 586.4	5 746 217.9	19.4
11/11/2021	18:23:41	FE7d_03a_a	Still	FE7d_03a_13	406		392 590.3	5 746 236.9	392 586.6	5 746 215.5	21.7
11/11/2021	18:23:52	FE7d_03a_a	Still	FE7d_03a_14	407		392 590.3	5 746 236.9	392 586.7	5 746 213.3	23.9
11/11/2021	18:23:57	FE7d_03a_a	Still	FE7d_03a_15	408		392 590.3	5 746 236.9	392 586.6	5 746 212.4	24.8
11/11/2021	18:24:13	FE7d_03a_a	Still	FE7d_03a_16	409		392 590.3	5 746 236.9	392 585.0	5 746 210.9	26.5
11/11/2021	18:24:24	FE7d_03a_a	Video	EOL	410		392 590.3	5 746 236.9	392 584.9	5 746 209.1	28.3
11/11/2021	19:44:14	FE7f_02a	Video	SOL	412		395 936.0	5 750 566.0	395 964.7	5 750 586.1	35.0
11/11/2021	19:44:33	FE7f_02a	Still	FE7f_02a_01	413		395 936.0	5 750 566.0	395 962.5	5 750 581.0	30.5
11/11/2021	19:44:53	FE7f_02a	Still	FE7f_02a_02	414		395 936.0	5 750 566.0	395 959.1	5 750 576.5	25.4
11/11/2021	19:45:06	FE7f_02a	Still	FE7f_02a_03	415		395 936.0	5 750 566.0	395 957.1	5 750 573.2	22.2
11/11/2021	19:45:26	FE7f_02a	Still	FE7f_02a_04	416		395 936.0	5 750 566.0	395 954.6	5 750 568.3	18.8
11/11/2021	19:45:37	FE7f_02a	Still	FE7f_02a_05	417		395 936.0	5 750 566.0	395 953.8	5 750 567.7	17.9
11/11/2021	19:45:57	FE7f_02a	Still	FE7f_02a_06	418		395 936.0	5 750 566.0	395 953.8	5 750 568.7	18.0
11/11/2021	19:46:07	FE7f_02a	Still	FE7f_02a_07	419		395 936.0	5 750 566.0	395 951.8	5 750 568.4	16.0
11/11/2021	19:46:22	FE7f_02a	Still	FE7f_02a_08	420		395 936.0	5 750 566.0	395 952.6	5 750 566.4	16.6
11/11/2021	19:47:12	FE7f_02a	Still	FE7f_02a_09	421		395 936.0	5 750 566.0	395 949.2	5 750 560.0	14.5
11/11/2021	19:47:42	FE7f_02a	Still	FE7f_02a_10	422		395 936.0	5 750 566.0	395 949.4	5 750 558.0	15.6

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	19:47:55	FE7f_02a	Still	FE7f_02a_11	423		395 936.0	5 750 566.0	395 948.5	5 750 556.3	15.8
11/11/2021	19:48:12	FE7f_02a	Still	FE7f_02a_12	424		395 936.0	5 750 566.0	395 943.0	5 750 554.6	13.4
11/11/2021	19:48:33	FE7f_02a	Still	FE7f_02a_13	425		395 936.0	5 750 566.0	395 941.6	5 750 548.5	18.3
11/11/2021	19:48:51	FE7f_02a	Still	FE7f_02a_14	426		395 936.0	5 750 566.0	395 942.7	5 750 542.0	24.9
11/11/2021	19:49:11	FE7f_02a	Still	FE7f_02a_15	427		395 936.0	5 750 566.0	395 941.8	5 750 536.4	30.1
11/11/2021	19:49:24	FE7f_02a	Video	EOL	428		395 936.0	5 750 566.0	395 941.8	5 750 532.6	33.9
11/11/2021	20:21:39	FE7e_03a	Video	SOL	429	9	393 756.8	5 749 639.0	393 784.9	5 749 691.9	59.9
11/11/2021	20:23:15	FE7d_03a	Still	FE7e_03a_01	431		393 756.8	5 749 639.0	393 761.3	5 749 661.9	23.4
11/11/2021	20:24:04	FE7d_03a	Still	FE7e_03a_02	432		393 756.8	5 749 639.0	393 769.1	5 749 646.5	14.4
11/11/2021	20:24:12	FE7d_03a	Still	FE7e_03a_03	433		393 756.8	5 749 639.0	393 768.6	5 749 644.5	13.0
11/11/2021	20:24:22	FE7d_03a	Still	FE7e_03a_04	434		393 756.8	5 749 639.0	393 768.0	5 749 642.5	11.7
11/11/2021	20:24:37	FE7d_03a	Still	FE7e_03a_05	435		393 756.8	5 749 639.0	393 768.3	5 749 639.3	11.5
11/11/2021	20:24:48	FE7d_03a	Still	FE7e_03a_06	436		393 756.8	5 749 639.0	393 768.5	5 749 637.5	11.8
11/11/2021	20:25:01	FE7d_03a	Still	FE7e_03a_07	437		393 756.8	5 749 639.0	393 767.6	5 749 636.1	11.2
11/11/2021	20:25:19	FE7d_03a	Still	FE7e_03a_08	438		393 756.8	5 749 639.0	393 764.8	5 749 635.5	8.7
11/11/2021	20:25:33	FE7d_03a	Still	FE7e_03a_09	439		393 756.8	5 749 639.0	393 762.9	5 749 635.4	7.1
11/11/2021	20:25:52	FE7d_03a	Still	FE7e_03a_10	440		393 756.8	5 749 639.0	393 761.3	5 749 634.7	6.2
11/11/2021	20:26:00	FE7d_03a	Still	FE7e_03a_11	441		393 756.8	5 749 639.0	393 760.9	5 749 634.4	6.1
11/11/2021	20:27:07	FE7d_03a	Still	FE7e_03a_12	442		393 756.8	5 749 639.0	393 759.6	5 749 625.4	13.9
11/11/2021	20:27:37	FE7d_03a	Still	FE7e_03a_13	443		393 756.8	5 749 639.0	393 760.8	5 749 621.4	18.1
11/11/2021	20:27:46	FE7d_03a	Still	FE7e_03a_14	444		393 756.8	5 749 639.0	393 760.7	5 749 620.4	19.0
11/11/2021	20:28:02	FE7d_03a	Still	FE7e_03a_15	445		393 756.8	5 749 639.0	393 759.9	5 749 618.7	20.5

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	20:28:26	FE7d_03a	Still	FE7e_03a_16	446		393 756.8	5 749 639.0	393 758.9	5 749 616.4	22.7
11/11/2021	20:28:35	FE7d_03a	Video	EOL	447		393 756.8	5 749 639.0	393 758.8	5 749 615.6	23.5
11/11/2021	20:53:06	FE7e_01a	Video	SOL	448		392 894.4	5 748 177.1	392 909.7	5 748 193.2	22.2
11/11/2021	20:53:14	FE7e_01a_a	Still	FE7e_01a_a_01	449		392 894.4	5 748 177.1	392 909.7	5 748 191.2	20.8
11/11/2021	20:53:41	FE7e_01a_a	Still	FE7e_01a_a_02	450		392 894.4	5 748 177.1	392 909.7	5 748 181.2	15.8
11/11/2021	20:54:08	FE7e_01a_a	Still	FE7e_01a_a_03	451		392 894.4	5 748 177.1	392 903.9	5 748 172.5	10.6
11/11/2021	20:54:19	FE7e_01a_a	Still	FE7e_01a_a_04	452		392 894.4	5 748 177.1	392 901.8	5 748 171.7	9.2
11/11/2021	20:54:52	FE7e_01a_a	Still	FE7e_01a_a_05	453		392 894.4	5 748 177.1	392 899.7	5 748 173.6	6.4
11/11/2021	20:55:20	FE7e_01a_a	Still	FE7e_01a_a_06	454		392 894.4	5 748 177.1	392 889.9	5 748 173.1	6.0
11/11/2021	20:55:33	FE7e_01a_a	Still	FE7e_01a_a_07	455		392 894.4	5 748 177.1	392 886.3	5 748 170.5	10.4
11/11/2021	20:55:48	FE7e_01a_a	Still	FE7e_01a_a_08	456		392 894.4	5 748 177.1	392 885.2	5 748 168.6	12.5
11/11/2021	20:56:15	FE7e_01a_a	Still	FE7e_01a_a_09	457		392 894.4	5 748 177.1	392 889.3	5 748 165.4	12.8
11/11/2021	20:56:36	FE7e_01a_a	Still	FE7e_01a_a_10	458		392 894.4	5 748 177.1	392 890.4	5 748 161.2	16.4
11/11/2021	20:57:01	FE7e_01a_a	Still	FE7e_01a_a_11	459		392 894.4	5 748 177.1	392 881.5	5 748 163.4	18.8
11/11/2021	20:57:49	FE7e_01a_a	Still	FE7e_01a_a_12	460		392 894.4	5 748 177.1	392 869.2	5 748 160.0	30.5
11/11/2021	20:58:04	FE7e_01a_a	Video	EOL	461		392 894.4	5 748 177.1	392 868.4	5 748 155.4	33.9
11/11/2021	21:16:29	FE7d_03a_a	Video	SOL	462	9	392 590.3	5 746 236.9	392 615.6	5 746 256.9	32.3
11/11/2021	21:16:56	FE7d_03a_a	Still	FE7d_03a_a_01	463		392 590.3	5 746 236.9	392 602.3	5 746 257.0	23.4
11/11/2021	21:17:28	FE7d_03a_a	Still	FE7d_03a_a_02	464		392 590.3	5 746 236.9	392 594.9	5 746 249.9	13.8
11/11/2021	21:17:44	FE7d_03a_a	Still	FE7d_03a_a_03	465		392 590.3	5 746 236.9	392 594.8	5 746 243.2	7.7
11/11/2021	21:18:16	FE7d_03a_a	Still	FE7d_03a_a_04	466		392 590.3	5 746 236.9	392 602.6	5 746 231.4	13.5
11/11/2021	21:18:44	FE7d_03a_a	Still	FE7d_03a_a_05	467		392 590.3	5 746 236.9	392 602.0	5 746 230.9	13.1

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	21:18:52	FE7d_03a_a	Still	FE7d_03a_a_06	468		392 590.3	5 746 236.9	392 602.8	5 746 231.3	13.7
11/11/2021	21:19:00	FE7d_03a_a	Still	FE7d_03a_a_07	469		392 590.3	5 746 236.9	392 602.4	5 746 231.0	13.4
11/11/2021	21:19:22	FE7d_03a_a	Still	FE7d_03a_a_08	470		392 590.3	5 746 236.9	392 605.2	5 746 225.0	19.1
11/11/2021	21:19:50	FE7d_03a_a	Video	EOL	471		392 590.3	5 746 236.9	392 633.3	5 746 217.0	47.4
11/11/2021	21:38:48	FE7d_02	Video	SOL	472	7	391 572.8	5 745 581.8	391 599.2	5 745 598.3	31.1
11/11/2021	21:39:01	FE7d_02	Still	FE7d_02_01	473		391 572.8	5 745 581.8	391 593.6	5 745 594.4	24.3
11/11/2021	21:39:34	FE7d_02	Still	FE7d_02_02	474		391 572.8	5 745 581.8	391 581.3	5 745 587.3	10.1
11/11/2021	21:39:50	FE7d_02	Still	FE7d_02_03	475		391 572.8	5 745 581.8	391 576.3	5 745 588.0	7.1
11/11/2021	21:40:08	FE7d_02	Still	FE7d_02_04	476		391 572.8	5 745 581.8	391 570.1	5 745 586.8	5.6
11/11/2021	21:40:25	FE7d_02	Still	FE7d_02_05	477		391 572.8	5 745 581.8	391 565.9	5 745 581.1	7.0
11/11/2021	21:41:12	FE7d_02	Still	FE7d_02_06	478		391 572.8	5 745 581.8	391 558.7	5 745 565.4	21.7
11/11/2021	21:41:25	FE7d_02	Still	FE7d_02_07	479		391 572.8	5 745 581.8	391 555.5	5 745 562.7	25.7
11/11/2021	21:41:35	FE7d_02	Still	FE7d_02_08	480		391 572.8	5 745 581.8	391 553.9	5 745 561.4	27.8
11/11/2021		FE7d_02	Video	EOL							
11/11/2021	21:50:43	FE7d_02a	Video	SOL	481	6	390 625.3	5 745 539.2	390 654.1	5 745 557.3	34.0
11/11/2021	21:51:16	FE7d_02a	Still	FE7d_02a_01	482		390 625.3	5 745 539.2	390 635.8	5 745 550.2	15.2
11/11/2021	21:51:26	FE7d_02a	Still	FE7d_02a_02	483		390 625.3	5 745 539.2	390 631.4	5 745 547.4	10.2
11/11/2021	21:51:38	FE7d_02a	Still	FE7d_02a_03	484		390 625.3	5 745 539.2	390 627.1	5 745 544.5	5.6
11/11/2021	21:51:55	FE7d_02a	Still	FE7d_02a_04	485		390 625.3	5 745 539.2	390 620.9	5 745 541.0	4.7
11/11/2021	21:52:15	FE7d_02a	Still	FE7d_02a_05	486		390 625.3	5 745 539.2	390 617.5	5 745 534.7	9.1
11/11/2021	21:52:29	FE7d_02a	Still	FE7d_02a_06	487		390 625.3	5 745 539.2	390 618.5	5 745 528.7	12.6
11/11/2021	21:52:47	FE7d_02a	Still	FE7d_02a_07	488		390 625.3	5 745 539.2	390 621.0	5 745 521.6	18.2

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	21:53:12	FE7d_02a	Still	FE7d_02a_08	489		390 625.3	5 745 539.2	390 624.8	5 745 516.9	22.3
11/11/2021	21:53:20	FE7d_02a	Still	FE7d_02a_09	490		390 625.3	5 745 539.2	390 626.1	5 745 516.0	23.2
11/11/2021	21:53:39	FE7d_02a	Still	FE7d_02a_10	491		390 625.3	5 745 539.2	390 629.2	5 745 515.0	24.5
11/11/2021	21:53:44	FE7d_02a	Still	FE7d_02a_11	492		390 625.3	5 745 539.2	390 630.1	5 745 515.1	24.6
11/11/2021	21:53:59	FE7d_02a	Still	FE7d_02a_12	493		390 625.3	5 745 539.2	390 629.2	5 745 516.3	23.2
11/11/2021	21:54:05	FE7d_02a	Still	FE7d_02a_13	494		390 625.3	5 745 539.2	390 628.0	5 745 516.8	22.5
11/11/2021	21:54:15	FE7d_02a	Still	FE7d_02a_14	495		390 625.3	5 745 539.2	390 625.8	5 745 516.6	22.6
			Video	EOL							
11/11/2021	22:35:10	FE7b_03	Video	SOL	496	6	381 508.9	5 742 019.1	381 528.8	5 742 039.4	28.4
11/11/2021	22:35:17	FE7b_03	Still	FE7b_03_01	497		381 508.9	5 742 019.1	381 526.0	5 742 039.3	26.5
11/11/2021	22:36:08	FE7b_03	Still	FE7b_03_02	498		381 508.9	5 742 019.1	381 498.8	5 742 042.4	25.4
11/11/2021	22:36:20	FE7b_03	Still	FE7b_03_03	499		381 508.9	5 742 019.1	381 494.7	5 742 037.3	23.1
11/11/2021	22:36:35	FE7b_03	Still	FE7b_03_04	500		381 508.9	5 742 019.1	381 493.3	5 742 031.6	20.0
11/11/2021	22:36:43	FE7b_03	Still	FE7b_03_05	501		381 508.9	5 742 019.1	381 493.8	5 742 029.1	18.1
11/11/2021	22:36:54	FE7b_03	Still	FE7b_03_06	502		381 508.9	5 742 019.1	381 495.3	5 742 025.7	15.1
11/11/2021	22:37:19	FE7b_03	Still	FE7b_03_07	503		381 508.9	5 742 019.1	381 500.7	5 742 021.9	8.6
11/11/2021	22:37:25	FE7b_03	Still	FE7b_03_08	504		381 508.9	5 742 019.1	381 502.1	5 742 021.7	7.3
11/11/2021	22:37:44	FE7b_03	Still	FE7b_03_09	505		381 508.9	5 742 019.1	381 507.4	5 742 022.1	3.3
11/11/2021	22:37:57	FE7b_03	Still	FE7b_03_10	506		381 508.9	5 742 019.1	381 511.5	5 742 023.5	5.1
11/11/2021	22:38:20	FE7b_03	Still	FE7b_03_11	507		381 508.9	5 742 019.1	381 523.5	5 742 027.6	16.9
11/11/2021	22:38:50	FE7b_03	Still	FE7b_03_12	508		381 508.9	5 742 019.1	381 535.4	5 742 030.0	28.6
11/11/2021	22:39:03	FE7b_03	Video	EOL	509		381 508.9	5 742 019.1	381 538.8	5 742 030.4	31.9

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	22:48:42	FE7b_01	Video	SOL	510	7	381 555.4	5 742 302.3	381 580.5	5 742 325.8	34.4
11/11/2021	22:49:14	FE7b_01	Still	FE7b_01_01	511		381 555.4	5 742 302.3	381 561.8	5 742 313.1	12.5
11/11/2021	22:49:35	FE7b_01	Still	FE7b_01_02	512		381 555.4	5 742 302.3	381 554.0	5 742 307.8	5.7
11/11/2021	22:49:41	FE7b_01	Still	FE7b_01_03	513		381 555.4	5 742 302.3	381 551.9	5 742 306.9	5.7
11/11/2021	22:50:05	FE7b_01	Still	FE7b_01_04	514		381 555.4	5 742 302.3	381 545.2	5 742 304.1	10.4
11/11/2021	22:50:11	FE7b_01	Still	FE7b_01_05	515		381 555.4	5 742 302.3	381 544.0	5 742 303.7	11.5
11/11/2021	22:50:26	FE7b_01	Still	FE7b_01_06	516		381 555.4	5 742 302.3	381 541.0	5 742 303.7	14.5
11/11/2021	22:50:43	FE7b_01	Still	FE7b_01_07	517		381 555.4	5 742 302.3	381 538.0	5 742 303.9	17.5
11/11/2021	22:50:52	FE7b_01	Still	FE7b_01_08	518		381 555.4	5 742 302.3	381 536.5	5 742 304.1	19.0
11/11/2021	22:51:13	FE7b_01	Still	FE7b_01_09	519		381 555.4	5 742 302.3	381 533.5	5 742 305.6	22.1
11/11/2021	22:51:18	FE7b_01	Still	FE7b_01_10	520		381 555.4	5 742 302.3	381 532.9	5 742 306.2	22.8
11/11/2021	22:51:39	FE7b_01	Still	FE7b_01_11	521		381 555.4	5 742 302.3	381 531.1	5 742 307.8	24.9
11/11/2021	22:51:54	FE7b_01	Video	EOL	522		381 555.4	5 742 302.3	381 529.9	5 742 309.1	26.4
11/11/2021	23:06:57	FE7b_01a	Video	SOL	523	7	381 555.4	5 742 302.3	381 528.2	5 742 283.3	33.2
11/11/2021	23:07:48	FE7b_01a	Still	FE7b_01a_01	524		381 555.4	5 742 302.3	381 550.7	5 742 301.5	4.8
11/11/2021	23:08:25	FE7b_01a	Still	FE7b_01a_02	525		381 555.4	5 742 302.3	381 556.3	5 742 311.2	8.9
11/11/2021	23:08:30	FE7b_01a	Still	FE7b_01a_03	526		381 555.4	5 742 302.3	381 556.6	5 742 312.2	10.0
11/11/2021	23:08:49	FE7b_01a	Still	FE7b_01a_04	527		381 555.4	5 742 302.3	381 557.9	5 742 316.1	14.0
11/11/2021	23:08:54	FE7b_01a	Still	FE7b_01a_05	528		381 555.4	5 742 302.3	381 558.5	5 742 317.2	15.3
11/11/2021	23:09:19	FE7b_01a	Still	FE7b_01a_06	529		381 555.4	5 742 302.3	381 561.2	5 742 318.7	17.4
11/11/2021	23:09:35	FE7b_01a	Still	FE7b_01a_07	530		381 555.4	5 742 302.3	381 562.8	5 742 320.7	19.8
11/11/2021	23:09:51	FE7b_01a	Still	FE7b_01a_08	531		381 555.4	5 742 302.3	381 563.9	5 742 322.7	22.1

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
11/11/2021	23:10:09	FE7b_01a	Still	FE7b_01a_09	532		381 555.4	5 742 302.3	381 564.9	5 742 324.7	24.4
11/11/2021	23:10:26	FE7b_01a	Still	FE7b_01a_10	533		381 555.4	5 742 302.3	381 565.4	5 742 326.3	26.0
11/11/2021	23:10:46	FE7b_01a	Still	FE7b_01a_11	534		381 555.4	5 742 302.3	381 565.4	5 742 327.9	27.5
11/11/2021	23:11:04	FE7b_01a	Still	FE7b_01a_12	535		381 555.4	5 742 302.3	381 565.1	5 742 329.0	28.4
11/11/2021	23:11:12	FE7b_01a	Video	EOL	536		381 555.4	5 742 302.3	381 564.8	5 742 329.3	28.5
11/11/2021	23:19:09	FE7b_02	Video	SOL	537	6	381 454.7	5 742 388.5	381 480.8	5 742 416.3	38.1
11/11/2021	23:19:22	FE7b_02	Still	FE7b_02_01	538		381 454.7	5 742 388.5	381 476.5	5 742 412.7	32.5
11/11/2021	23:20:22	FE7b_02	Still	FE7b_02_02	539		381 454.7	5 742 388.5	381 465.0	5 742 400.4	15.7
11/11/2021	23:20:26	FE7b_02	Still	FE7b_02_03	540		381 454.7	5 742 388.5	381 464.3	5 742 399.6	14.7
11/11/2021	23:20:44	FE7b_02	Still	FE7b_02_04	541		381 454.7	5 742 388.5	381 461.9	5 742 396.4	10.7
11/11/2021	23:21:07	FE7b_02	Still	FE7b_02_05	542		381 454.7	5 742 388.5	381 456.8	5 742 393.8	5.7
11/11/2021	23:22:16	FE7b_02	Still	FE7b_02_06	543		381 454.7	5 742 388.5	381 439.7	5 742 392.4	15.5
11/11/2021	23:22:22	FE7b_02	Still	FE7b_02_07	544		381 454.7	5 742 388.5	381 438.6	5 742 392.2	16.5
11/11/2021	23:22:48	FE7b_02	Still	FE7b_02_08	545		381 454.7	5 742 388.5	381 434.3	5 742 391.8	20.7
11/11/2021	23:23:13	FE7b_02	Still	FE7b_02_09	546		381 454.7	5 742 388.5	381 430.7	5 742 390.7	24.1
11/11/2021	23:23:42	FE7b_02	Video	EOL	547		381 454.7	5 742 388.5	381 427.2	5 742 389.7	27.5
11/11/2021	23:59:50	FE7b_02	DG	SC	548	8	381 454.7	5 742 388.5	381 457.8	5 742 382.1	7.1
12/11/2021	00:15:01	FE7b_04	DG	SC	549	8	382 109.0	5 742 112.9	382 114.5	5 742 121.4	10.2
12/11/2021	01:39:01	FE7c_04	DG	SC	550	11	389 055.0	5 744 022.0	389 060.2	5 744 030.3	9.8
12/11/2021	02:37:47	FE7e_02	DG	SC	551	12	392 970.0	5 748 303.0	392 961.2	5 748 299.4	9.5
14/11/2021	21:06:31	FE7b_02	HG	FA	553	9	381 454.7	5 742 388.5	381 456.3	5 742 394.6	6.3
14/11/2021	21:32:20	FE7b_04	HG	FA	554	10	382 109.0	5 742 112.9	382 114.7	5 742 115.2	6.1

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
14/11/2021	22:21:19	FE7b_05	HG	FA	555	9	383 290.0	5 742 263.0	383 300.8	5 742 269.4	12.5
14/11/2021	23:12:13	FE7b_06	HG	FA	557	10	384 667.0	5 742 324.0	384 667.1	5 742 324.3	0.3
14/11/2021	23:54:32	FE7c_01	HG	NS	558	9	385 936.0	5 742 691.0	385 940.5	5 742 693.1	4.9
15/11/2021	00:27:22	FE7c_01	HG	FA	559	9	385 936.0	5 742 691.0	385 941.5	5 742 696.5	7.8
15/11/2021	01:02:14	FE7c_02	HG	NS	560	9	387 190.0	5 743 318.0	387 205.7	5 743 325.4	17.3
15/11/2021	01:20:16	FE7c_02	HG	FA	562	9	387 190.0	5 743 318.0	387 198.6	5 743 325.9	11.6
15/11/2021	02:27:28	FE7c_03	HG	FA	563	9	388 184.0	5 743 823.0	388 197.6	5 743 823.6	13.6
15/11/2021	03:04:29	FE7c_04	HG	FA	564	10	389 055.0	5 744 022.0	389 049.8	5 744 032.0	11.3
15/11/2021	03:58:50	FE7d_01	HG	NS	565	9	390 309.0	5 744 985.0	390 296.0	5 744 977.2	15.2
15/11/2021	04:12:26	FE7d_01	HG	NS	566	9	390 309.0	5 744 985.0	390 298.6	5 744 965.5	22.1
15/11/2021	04:36:30	FE7d_01	HG	FA	567	9	390 309.0	5 744 985.0	390 302.2	5 744 980.6	8.1
15/11/2021	05:38:25	FE7d_02	HG	NS	568	8	391 572.8	5 745 581.8	391 566.7	5 745 576.1	8.3
15/11/2021	05:44:08	FE7d_02	HG	NS	569	8	391 572.8	5 745 581.8	391 558.5	5 745 562.1	24.3
15/11/2021	06:24:33	FE7d_02	HG	NS	570	8	391 572.8	5 745 581.8	391 569.4	5 745 571.2	11.1
15/11/2021	06:46:57	FE7d_02	HG	NS	572	8	391 572.8	5 745 581.8	391 579.9	5 745 589.8	10.7
15/11/2021	07:40:39	FE7d_02	HG	NS	573	8	391 572.8	5 745 581.8	391 575.9	5 745 595.5	14.0
15/11/2021	07:57:14	FE7d_03	HG	NS	574	11	392 632.9	5 746 248.0	392 636.2	5 746 260.1	12.5
15/11/2021	08:18:42	FE7d_03	HG	NS	575	11	392 632.9	5 746 248.0	392 626.9	5 746 241.9	8.6
15/11/2021	08:30:55	FE7d_03	HG	NS	576	11	392 632.9	5 746 248.0	392 634.4	5 746 250.1	2.6
15/11/2021	09:05:23	FE7d_03	HG	FA	577	11	392 632.9	5 746 248.0	392 631.5	5 746 248.7	1.6
15/11/2021	09:29:54	FE7e_01	HG	NS	578	12	392 863.0	5 747 783.0	392 866.6	5 747 784.4	3.9
15/11/2021	09:46:54	FE7e_01	HG	FA	579	12	392 863.0	5 747 783.0	392 869.0	5 747 787.2	7.4

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
15/11/2021	10:12:10	FE7e_02	HG	FA	580	13	392 970.0	5 748 303.0	392 971.9	5 748 305.2	2.9
15/11/2021	10:40:24	FE7e_03	HG	FA	581	11	393 566.0	5 749 542.0	393 569.7	5 749 546.2	5.6
15/11/2021	11:01:41	FE7f_01	HG	NS	582	10	394 682.0	5 750 306.0	394 689.2	5 750 318.4	14.3
15/11/2021	11:15:02	FE7f_01	HG	FA	583	10	394 682.0	5 750 306.0	394 683.0	5 750 306.8	1.3
15/11/2021	11:26:11	FE7f_01	HG	NS	584	10	394 682.0	5 750 306.0	394 677.7	5 750 303.7	4.9
15/11/2021	11:43:20	FE7f_01_moved	HG	NS	585	10	394 682.0	5 750 306.0	394 625.9	5 750 308.4	56.2
15/11/2021	12:47:39	FE7f_02	HG	NS	586	7	395 936.0	5 750 566.0	395 937.8	5 750 578.3	12.4
15/11/2021	12:53:21	FE7f_02	HG	NS	587	7	395 936.0	5 750 566.0	395 939.8	5 750 587.6	21.9
15/11/2021	12:59:32	FE7f_02	HG	NS	588	7	395 936.0	5 750 566.0	395 949.1	5 750 580.9	19.8
15/11/2021	13:12:44	FE7f_02_moved	HG	NS	589	7	395 936.0	5 750 566.0	395 997.2	5 750 582.9	63.4
15/11/2021	13:30:06	FE7g_01	HG	NS	590	9	397 129.0	5 749 909.0	397 136.2	5 749 910.3	7.3
15/11/2021	13:49:35	FE7g_01	HG	NS	591	9	397 129.0	5 749 909.0	397 137.6	5 749 916.9	11.7
15/11/2021	14:31:41	FE7g_01	HG	NS	592	9	397 129.0	5 749 909.0	397 142.7	5 749 915.5	15.2
15/11/2021	14:38:28	FE7g_01	HG	FA	593	9	397 129.0	5 749 909.0	397 060.6	5 749 907.1	68.4
15/11/2021	15:08:48	FE7g_02	HG	FA	594	11	398 410.0	5 749 371.0	398 410.2	5 749 373.2	2.2
15/11/2021	15:57:32	FE7g_03	HG	SC	595	16	399 484.4	5 748 814.3	399 473.2	5 748 809.2	12.3
15/11/2021	16:41:44	FE7g_03	DG	FA	596	16	399 484.4	5 748 814.3	399 477.8	5 748 803.1	13.0
15/11/2021	17:40:29	FE6_01	HG	NS	597	15	398 993.0	5 747 423.0	398 986.3	5 747 408.8	15.7
15/11/2021	17:51:37	FE6_01	HG	FA	598	15	398 993.0	5 747 423.0	398 985.2	5 747 405.1	19.6
15/11/2021	18:35:35	FE6_02	HG	FA	599	15	398 489.0	5 746 031.0	398 490.1	5 746 039.6	8.7
15/11/2021	19:13:33	FE6_04	HG	NS	600	17	399 941.0	5 743 615.0	399 935.3	5 743 603.8	12.6
15/11/2021	19:26:37	FE6_04	HG	NS	601	17	399 941.0	5 743 615.0	399 938.7	5 743 616.8	2.9

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]											
Date	Time [UTC]	Station	Type	Sample / Still No.	Fix No.	Water Depth [m BSL]	Proposed Location		Actual Location		Offset [m]
							Easting	Northing	Easting	Northing	
15/11/2021	19:42:24	FE6_04	HG	FA	602	17	399 941.0	5 743 615.0	399 938.6	5 743 631.8	17.0
15/11/2021	20:12:01	FE6_05	HG	NS	603	22	401 027.0	5 742 943.0	401 020.6	5 742 938.2	8.0
15/11/2021	20:28:04	FE6_05	HG	NS	604	22	401 027.0	5 742 943.0	401 020.6	5 742 936.8	9.0
15/11/2021	21:22:48	FE6_05	HG	NS	605	22	401 027.0	5 742 943.0	401 033.9	5 742 952.6	11.8
15/11/2021	21:37:21	FE6_05_50E	HG	NS	607	22	401 027.0	5 742 943.0	401 084.6	5 742 957.4	59.4
15/11/2021	21:53:33	FE6_06	HG	FA	608	17	402 426.0	5 743 023.0	402 432.1	5 743 025.2	6.4
15/11/2021	22:21:41	FE6_07	HG	FA	609	20	403 871.0	5 743 138.0	403 878.5	5 743 139.3	7.6
15/11/2021	22:48:43	FE6_08	HG	FA	610	22	405 301.0	5 743 436.0	405 303.2	5 743 437.7	2.8
15/11/2021	23:12:52	FE6_09	HG	FA	611	20	406 753.0	5 743 803.0	406 767.5	5 743 814.2	18.3
16/11/2021	01:09:25	FE6_10	HG	FA	615	21	408 472.0	5 744 432.0	408 482.6	5 744 447.2	18.6
16/11/2021	01:35:10	FE6_11	HG	FA	616	23	409 460.0	5 744 858.0	409 467.8	5 744 861.7	8.6
16/11/2021	02:10:28	FE6_11	HG	NS	617	23	409 460.0	5 744 858.0	409 463.7	5 744 861.9	5.4
16/11/2021	02:31:55	FE6_11	HG	NS	618	23	409 460.0	5 744 858.0	409 463.5	5 744 851.7	7.2
16/11/2021	02:38:10	FE6_11	HG	NS	619	23	409 460.0	5 744 858.0	409 462.3	5 744 841.3	16.9
16/11/2021	02:48:44	FE6_11_moved	HG	NS	620	23	409 460.0	5 744 858.0	409 420.0	5 744 848.1	41.2

Notes
UTC = Coordinated Universal Time
BSL = Below sea level
SOL = Start of line
EOL = End of line
HG = Hamon grab
DG = Day grab
FA = Faunal sample A
SC = Sediment chemistry sample
NT = Not triggered
NS = No sample

B.2 Grab Log

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
09/11/2021	01:08:23	FE5_01	FA	3	5		gsM	Gravelly sandy mud	Brown	Clay lumps, shell fragments, brittlestars
09/11/2021	02:14:02	FE5_02	NS	4	-			-	-	
09/11/2021	02:39:31	FE5_02	NS	5	3		gsM	Gravelly sandy mud	Brown	
09/11/2021	07:21:05	FE5_02	NS	7	3			-	-	
09/11/2021	07:45:22	FE5_02	NS	8	1			-	-	
09/11/2021	08:02:06	FE5_02	FA	9	5		gsM	Gravelly sandy mud	Brown	
09/11/2021	08:29:45	FE5_03	FA	10	8		gsM	Gravelly sandy mud	Brown	Clay lumps, shell fragments, Ophiuroidea, Actinaria, sea urchin, faunal tubes
09/11/2021	09:16:42	FE5_04	FA	11	5		gsM	Gravelly sandy mud	Brown	
09/11/2021	09:41:08	FE5_05	FA	12	6		(g)sM	Slightly gravelly sandy mud	Brown	
09/11/2021	10:31:01	FE5_06	FA	13	6		(g)sM	Slightly gravelly sandy mud	Brown	Sea urchins
09/11/2021	11:01:10	FE5_07	FA	15	8		(g)sM	Slightly gravelly sandy mud	Brown	
09/11/2021	11:55:31	FE5_08	FA	17	6		(g)sM	Slightly gravelly sandy mud	Brown	Consolidated clay, piddocks, sea urchins
09/11/2021	13:09:20	FE5_09	FA	18	8		(g)sM	Slightly gravelly sandy mud	Brown	Brittlestars, consolidated clay, shell fragments
09/11/2021	13:51:39	FE5_09	SC	19	8cm		(g)sM	Slightly gravelly sandy mud	Brown	Brittlestars
09/11/2021	14:30:45	FE4_02	NT	20	-			-	-	Did not trigger
09/11/2021	14:42:32	FE4_02	NS	21	-			-	-	Rock in jaw
09/11/2021	14:57:22	FE4_02	NS	22	-			-	-	Triggered in water column

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
09/11/2021	15:10:06	FE4_02	NS	23	-			-	-	Triggered in water column
09/11/2021	15:47:57	FE4_02	SC	24	7		gsM	Gravelly sandy mud	Brown	Moved 50 m
09/11/2021	16:33:30	FE4_05	SC	25	7		gsM	Gravelly sandy mud	Brown	Brittlestars
09/11/2021	19:04:11	FE5_10	FA	26	8		gsM	Gravelly sandy mud	Brown	Clay lumps, shell fragments, mud shrimp
09/11/2021	19:38:21	FE4-01	NS	27	2		gM	Gravelly clay	Brown	
09/11/2021	20:14:47	FE4-01	FA	28	5		gM	Gravelly clay	Brown	Piddocks
09/11/2021	20:48:16	FE4-02	FA	29	6		(g)mS	Slightly gravelly muddy sand	Brown	Sea urchins
09/11/2021	21:35:16	FE4_03	FA	30	5		gsM	Gravelly muddy sand	Brown	Clay lumps, Actinaria, Polychaete, Annelids
09/11/2021	22:37:46	FE4_04	FA	31	5		gsM	Gravelly muddy sand	Brown	Clay lumps, Actinaria, Polychaete, Annelids, mud shrimp, crab, urchin
09/11/2021	23:12:31	FE4_05	FA	32	5		gsM	Gravelly muddy sand	Brown	Actinaria, *Corystes cassivelaunus*, sea urchin
09/11/2021	23:40:14	FE4_06	FA	33	6		S	Coarse sand	Yellow	Shell fragments
10/11/2021	00:04:52	FE4_07	NS	34	-			-	-	Stone in jaw
10/11/2021	00:18:12	FE4_07	FA	35	5		gsM	Gravelly muddy sand	Brown	
10/11/2021	01:16:13	FE4_08	FA	36	5		(g)sM	Slightly gravelly sandy mud	Brown	Shell fragments, clay lumps
10/11/2021	01:46:05	FE2_01	FA	37	5		gsM	Gravelly muddy sand	Brown	Cobbles
10/11/2021	02:18:12	FE2_02	FA	38	7		S	Coarse sand	Yellow	Shell fragments
10/11/2021	03:00:57	FE2_03	FA	39	6		S	Coarse sand	Yellow	Shell fragments
10/11/2021	03:52:48	FE2_03	NS	40	-			-	-	Empty

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
10/11/2021	04:12:57	FE2_03	NS	41	-			-	-	Bungee broke
10/11/2021	04:38:45	FE2_03	NS	42	-			-	-	Triggered in water column
10/11/2021	05:00:50	FE2_03	NS	43	-			-	-	Triggered in water column
10/11/2021	05:19:56	FE2_03	NS	44	-			-	-	Washout
10/11/2021	05:36:32	FE2_03	NS	45	-			-	-	Triggered in water column
10/11/2021	05:39:08	FE2_03	SC	46	10		S	Sand	Yellow	Shell fragments
10/11/2021	07:09:26	FE2_06	NS	47	-			-	-	
10/11/2021	07:48:56	FE2_04	FA	48	7		S	Sand	Yellow	Shell fragments
10/11/2021	08:15:26	FE2_06	FA	49	5		(g)mS	Slightly gravelly muddy sand	Yellow	
10/11/2021	08:53:29	FE2_05	NS	50	1			-	-	Low volume
10/11/2021	09:04:48	FE2_05	NS	51	-			-	-	Did not trigger
10/11/2021	09:12:04	FE2_05	FA	52	6		s	Sand		
10/11/2021	09:46:08	FE3_02	NS	53	-			-	-	Did not trigger
10/11/2021	10:15:02	FE3_02	NS	54	-			-	-	Did not trigger
10/11/2021	10:24:03	FE3_02	FA	55	5		gS	Gravelly sand with pebbles	-	Shell fragments. 1 large cobble
10/11/2021	11:15:40	FE3_01	SC	56	7		gsM	Gravelly muddy sand	-	
10/11/2021	11:45:41	FE3_01	FA	57	7		gsM	Gravelly muddy sand	-	
10/11/2021	12:30:41	FE3_03	FA	58	5		gsM	Gravelly muddy sand	-	Did not trigger
10/11/2021	13:13:36	FE1_01	NS	59					-	
10/11/2021	13:22:27	FE1_01	FA	60	8		(g)sM	Slightly gravelly sandy mud	-	Consolidated clay, brittlestars
10/11/2021	13:59:07	FE1_03	FA	61	7		gS	Slightly gravelly sand	-	Shell fragments

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
10/11/2021	15:03:19	FE1_05	FA	62	7		s	Sand	-	
10/11/2021	15:59:43	FE1_05	SC	63	8		s	Sand	-	
10/11/2021	16:33:18	FE1_04	FA	64	7		sG	Sandy gravel	-	Mixed sediment - cobbles and pebbles
10/11/2021	18:26:35	FE1_02	NS	65	2		sG	Sandy gravel	-	Stone in jaw
10/11/2021	18:34:26	FE1_02	FA	66	5		(g)mS	Slightly gravelly muddy sand	Brown	Hydrozoa/Bryozoa, Actinaria, clay lumps, brittlestars
10/11/2021	19:12:12	FE1_06	NS	67	<1			-	-	
10/11/2021	19:29:53	FE1_06	FA	68	5		(g)s	Slightly gravelly sand	Yellow	Shell fragments, faunal tubes
10/11/2021	20:06:24	FE1_07	FA	69	4		S	Sand	Yellow	Shell fragments
10/11/2021	21:36:01	FE1_08	FA	75	6		gS	Gravelly sand	Yellow/brown	Shell fragments
12/11/2021	23:59:50	FE7b_02	SC	548	10cm		sM	sandy mud	greyish brown	Shell fragments
12/11/2021	00:15:01	FE7b_04	SC	549	8 cm		sM	sandy mud	greyish brown	Shell fragments
12/11/2021	01:39:01	FE7c_04	SC	550	10 cm	1 cm	m	Mud	Brown	1 cm surface layer then anoxic
12/11/2021	01:39:01					9 cm	m	Partially anoxic mud	Grey	
12/11/2021	02:37:47	FE7e_02	SC	551	10 cm	1 cm	m	Mud	Brown	1 cm surface layer then anoxic
12/11/2021	02:37:47					9 cm	m	Partially anoxic mud	Grey	
14/11/2021	21:06:31	FE7b_02	FA	553	5		(g)M	Slightly gravelly mud	Brown	Clay (consolidated lumps), shell fragments, polychaetes
14/11/2021	21:32:20	FE7b_04	FA	554	9		(g)M	Slightly gravelly mud	Brown	Clay (consolidated lumps), shell fragments, peanut worms, Actinaria

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
14/11/2021	22:21:19	FE7b_05	FA	555	10		(g)M	Gravelly mud	Brown	Shell fragments, polychaetes, hermit crab, very small *Sabellaria* fragments
12/11/2021	22:21:19						M	Clay	Grey	Anoxic layer
14/11/2021	23:12:13	FE7b_06	FA	557	8		gM	Gravelly mud	Brown	Shell fragments, brittlestars, sea urchins
12/11/2021	23:12:13						M	Clay	Grey	Anoxic layer
14/11/2021	23:54:32	FE7c_01	NS	558	2		(g)M	Slightly gravelly mud	Brown	Clay lumps
15/11/2021	00:27:22	FE7c_01	FA	559	7		gsM	Gravelly sandy mud	Brown	Brittlestars, shell fragments, cobbles
15/11/2021	01:02:14	FE7c_02	NS	560	<1		gsM	Gravelly sandy mud	Brown	
15/11/2021	01:20:16	FE7c_02	FA	562	5		gsM	Gravelly sandy mud	Brown	Anoxic patch and lumps of clay
15/11/2021	02:27:28	FE7c_03	FA	563	6		gsM	Gravelly sandy mud	Brown	
15/11/2021	03:04:29	FE7c_04	FA	564	10		M	Mud	Grey/ Black	Anoxic - hydrogen sulphide smell. Faunal tubes
15/11/2021	03:58:50	FE7d_01	NS	565	<1		gM	Gravelly mud	Brown	
15/11/2021	04:12:26	FE7d_01	NS	566	2		gM	Gravelly mud	Brown	
15/11/2021	04:36:30	FE7d_01	FA	567	4		gsM	Gravelly sandy mud	Brown	Strong current. Accepted a 4L sample. *Sabellaria* fragments
15/11/2021	05:38:25	FE7d_02	NS	568	0			-	-	

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
15/11/2021	05:44:08	FE7d_02	NS	569	0			-	-	
15/11/2021	06:24:33	FE7d_02	NS	570	0			-	-	Empty - strong tides
15/11/2021	06:46:57	FE7d_02	NS	572	0			-	-	Moved 50 m - empty grab
15/11/2021	07:40:39	FE7d_02	NS	573	0			-	-	Strong tides - Low volume
15/11/2021	07:57:14	FE7d_03	NS	574	0			-	-	Low volume
15/11/2021	08:18:42	FE7d_03	NS	575	0			-	-	Stone in jaw
15/11/2021	08:30:55	FE7d_03	NS	576	0			-	-	Low volume
15/11/2021	09:05:23	FE7d_03	FA	577	4		gM	Gravelly mud	-	Marginal sample) - Shell fragments
15/11/2021	09:29:54	FE7e_01	NS	578	0					Low volume
15/11/2021	09:46:54	FE7e_01	FA	579	5		gM	Gravelly mud	Brown	Shell fragments
15/11/2021	10:12:10	FE7e_02	FA	580	10		(g)M	Slightly gravelly mud	Grey/Black	Anoxic layer, shell fragments, smell hydrogen sulfide
15/11/2021	10:40:24	FE7e_03	FA	581	6		mS	Muddy sand	Brown	Shell fragments
15/11/2021	11:01:41	FE7f_01	NS	582	1			-	-	Low volume
15/11/2021	11:15:02	FE7f_01	FA	583	3		(g)S	Slightly gravelly sand	Brown	Low sample

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
15/11/2021	11:26:11	FE7f_01	NS	584	1				Brown	Low volume
15/11/2021	11:43:20	FE7f_01	NS	585	2				Brown	Moved 50 m - Low volume
15/11/2021	12:47:39	FE7f_02	NS	586	1			-	-	Boulder with epifauna
15/11/2021	12:53:21	FE7f_02	NS	587	0			-	-	Empty grab
15/11/2021	12:59:32	FE7f_02	NS	588	0			-	-	Empty grab
15/11/2021	13:12:44	FE7f_02	NS	589	0			-	-	Empty grab
15/11/2021	13:30:06	FE7g_01	NS	590	0			-	-	Empty grab
15/11/2021	13:49:35	FE7g_01	NS	591	0			-	-	Empty grab
15/11/2021	14:31:41	FE7g_01	NS	592	0			-	-	Empty grab
15/11/2021	14:38:28	FE7g_01	FA	593	8			-	-	Moved 50 m - Ascideans
15/11/2021	15:08:48	FE7g_02	FA	594	10		sM	Sand and clay	Brown	Anoxic
15/11/2021	15:57:32	FE7g_03	SC	595	11cm		sM	Slightly sandy mud	Grey/black	Anoxic layer
15/11/2021	16:41:44	FE7g_03	FA	596	10		M	Mud	Black	Anoxic
15/11/2021	17:40:29	FE6_01	NS	597	2		gS	Gravelly sand	Brown	
15/11/2021	17:51:37	FE6_01	FA	598	7		gS	Gravelly sand	Brown	
15/11/2021	18:35:35	FE6_02	FA	599	5		gS	Gravelly sand	Brown	Faunal tubes
15/11/2021	19:13:33	FE6_04	NS	600	<1		gS	Gravelly sand	Brown	
15/11/2021	19:26:37	FE6_04	NS	601	1		gS	Gravelly sand	Brown	

Date	Time [UTC]	Station	Sample Rep	Fix No.	Sample Volume / depth* [L / cm]	Sediment Description (including stratigraphy)				Comments (fauna, smell, bioturbation, debris)
						Depth [cm]	Sediment Type	Sediment Description	Colour	
15/11/2021	19:42:24	FE6_04	FA	602	6		(g)mS	Slightly gravelly muddy sand	Brown	Sea urchins, shell fragments
15/11/2021	20:12:01	FE6_05	NS	603	2			-	-	
15/11/2021	20:28:04	FE6_05	NS	604	<1			-	-	
15/11/2021	21:22:48	FE6_05	NS	605	<1			-	-	
15/11/2021	21:37:21	FE6_05	NS	607	0			-	-	
15/11/2021	21:53:33	FE6_06	FA	608	9		s	Coarse sand	Yellow	Shell fragments
15/11/2021	22:21:41	FE6_07	FA	609	6		s	Coarse sand	Yellow	Shell fragments
15/11/2021	22:48:43	FE6_08	FA	610	9		s	Coarse sand	Yellow	Shell fragments
15/11/2021	23:12:52	FE6_09	FA	611	<1			-	-	
16/11/2021	01:09:25	FE6_10	FA	615	5		gS	Gravelly sand	Yellow	Small proportion of mud
16/11/2021	01:35:10	FE6_11	FA	616	6		gS	Gravelly sand	Yellow	Brittlestars, faunal tubes
16/11/2021	02:10:28	FE6_11	NS	617	3cm			-	-	Low volume
16/11/2021	02:31:55	FE6_11	NS	618	-			-	-	Stone caught in jaws
16/11/2021	02:38:10	FE6_11	NS	619	4cm			-	-	Low volume, moved 50 m
16/11/2021	02:48:44	FE6_11	NS	620	-			-	-	Stone in jaw

Notes
UTC = Coordinated Universal Time
SOL = Start of line
EOL = End of line
FA = Faunal sample A
SC = Sediment chemistry
NS = No sample
* Sample depth recorded in cm for Day grab

B.3 Video and Photographic Log

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]							
Station	Point on Line	Video Coordinates		Length [m]	Still Nos.	Sediment Description	Fauna / Bioturbation / Debris
		Easting [m]	Northing [m]				
FE1_01	SOL	437 890.1	5 753 947.0	29	FE1_01_01 - FE1_01_08	Sandy muddy gravel with varying proportions of cobbles and shell fragments	Starfish (*Asterias rubens*), brittlestars (Ophiuroidea), scallops (*Aequipecten opercularis* and *?Pecten maximus*), soft coral (*Alcyonium digitatum*), anemone (*Urticina* sp.), sea urchins (Echinoidea including *Psammechinus miliaris*), faunal tubes (Polychaeta including *Spirobranchus* sp.), encrusting bryozoans (Bryozoa)
	SOL	437 902.5	5 753 973.0				
	EOL	437 902.5	5 753 973.0	42	FE1_01_09 - FE1_01_22	Clay with piddock holes, sandy muddy gravel with varying proportions of cobbles, boulders and shell fragments	Starfish (*Asterias rubens*), brittlestars (Ophiuroidea), hermit crabs (Paguridae), sea urchins (Echinoidea including *Psammechinus miliaris*), scallops (*Aequipecten opercularis* and ?*Pecten maximus*), anemones (Actiniaria including *Urticina* sp.), soft coral (*Alcyonium digitatum*), faunal tubes (Polychaeta including *Spirobranchus* sp.), encrusting bryozoans (Bryozoa), faunal turf (Hydrozoa/Bryozoa)
	EOL	437 903.4	5 754 015.0				
FE1_02	SOL	439 422.8	5 759 561.0	80	FE1_02_01 - FE1_02_15	Gravelly muddy sand/sandy muddy gravel with varying proportions of cobbles and shell fragments	Starfish (*Asterias rubens*), soft coral (*Alcyonium digitatum*), faunal tubes (Polychaeta including *Spirobranchus* sp.), encrusting bryozoans (Bryozoa), faunal turf (Hydrozoa/Bryozoa), barnacles (Sessilia)
	EOL	439 430.8	5 759 641.0				
FE1_04	SOL	440 525.7	5 757 342.0	100	FE1_04_01 - FE1_04_24	Sand (rippled) with varying proportions of pebbles and cobbles and shell fragments	Starfish (*Asterias rubens*), brittlestars (Ophiuroidea including *Ophiura albida*), sea urchins (*Psammechinus miliaris*), scallops (Pectinidae including *Aequipecten opercularis*), soft coral (*Alcyonium digitatum*), painted topshell (*Calliostoma zizyphinum*), anemones (Actiniaria including Sagartiidae),-faunal tubes (Polychaeta including *Spirobranchus* sp.), encrusting bryozoans (Bryozoa), faunal turf (Hydrozoa/Bryozoa), small-spotted catshark (*Scyliorhinus canicula*), gurnard (Triglidae), fish (Pisces)
	EOL	440 533.6	5 757 442.0				

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]							
Station	Point on Line	Video Coordinates		Length [m]	Still Nos.	Sediment Description	Fauna / Bioturbation / Debris
		Easting [m]	Northing [m]				
FE4_01	SOL	422 084.1	5 738 388.0	69	FE4_01_01-FE4_01_14	Gravelly sandy mud/muddy sand with varying proportions of cobbles and shell fragments. Sporadic small clumps of clay with piddock holes	Starfish (*Asterias rubens*), soft coral (*Alcyonium digitatum*), crab (*Inachus* sp.), hermit crabs (Paguridae), anemones (Actiniaria including Sagartiidae), bryozoans (Bryozoa including Flustridae and *Pentapora foliacea*), hydroids (*Nemertesia antennina*), faunal turf (Hydrozoa/Bryozoa)
	EOL	422 075.3	5 738 320.0				
FE4_02	SOL	423 696.1	5 739 158.0	55	FE4_02_01-FE4_02_15	Gravelly sandy mud/muddy sand with varying proportions of cobbles and shell fragments. Sporadic small clumps of clay with piddock holes	Starfish (*Asterias rubens*), sea urchins (*Psammechinus miliaris*), spider crab (*Inachus* sp.), sponge (Porifera), soft coral (*Alcyonium digitatum*), painted topshell (*Calliostoma zizyphinum*), anemones (Actiniaria including Sagartiidae and *Urticina* sp.), faunal turf (Hydrozoa/Bryozoa), encrusting bryozoans (Bryozoa), hydroids (Hydrozoa), faunal tubes (Polychaeta including *Spirobranchus* sp.)
	EOL	423 704.4	5 739 104.0				
FE4_03	SOL	425 304.3	5 739 864.0	16	FE4_03_01 - FE4_03_09	Gravelly muddy sand with varying proportions of cobbles, boulders and shell fragments	Starfish (*Asterias rubens*), anemones (Actiniaria including Sagartiidae), soft coral (*Alcyonium digitatum*), sponge (Porifera), faunal turf (Hydrozoa/Bryozoa), elasmobranch egg case
	EOL	425 307.4	5 739 848.0				
	SOL	425 307.4	5 739 848.0	46	FE4_03_10-FE4_03_23	Gravelly muddy sand with areas of clay with piddock holes, varying proportions of cobbles and shell fragments	Starfish (*Asterias rubens*), anemones (Actiniaria including *Urticina* sp. and Sagartiidae), spider crab (*Macropodia* sp.), scallops (*Aequipecten opercularis*), soft coral (*Alcyonium digitatum*), sponge (Porifera), faunal tubes (Polychaeta including *Spirobranchus* sp.), hydroids (Hydrozoa including *Nemertesia antennina*), encrusting bryozoans (Bryozoa), faunal turf (Hydrozoa/Bryozoa), elasmobranch egg cases, goby (Gobiidae), fish (Pisces)
	EOL	425 292.4	5 739 804.0				

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]							
Station	Point on Line	Video Coordinates		Length [m]	Still Nos.	Sediment Description	Fauna / Bioturbation / Debris
		Easting [m]	Northing [m]				
FE4_04	SOL	426 928.5	5 740 559.0	53	FE4_04_01 - FE4_04_19	Gravelly muddy sand with varying proportions of cobbles and shell fragments	Starfish (*Asterias rubens*), anemones (Actiniaria including *Urticina* sp. and Sagartiidae), hermit crab (Paguridae), sea urchins (*Psammechinus miliaris*), scallop (Pectinidae), soft coral (*Alcyonium digitatum*), topshell (*Caliostoma granulatum*), whelk (Buccindae), ?sponge (Porifera), faunal tubes (Polychaeta including *Spirobranchus* sp.), ross worm crusts and tubes (*Sabellaria spinulosa*), encrusting bryozoans (Bryozoa), bryozoan (*Alcyonidium diaphanum*), hydroids (Hydrozoa possible Haleciidae), faunal turf (Hydrozoa/Bryozoa)
	EOL	426 916.1	5 740 507.0				
FE4_05	SOL	428 559.6	5 741 294.0	63	FE4_05_01 - FE4_05_19	Sandy muddy gravel with varying proportions of cobbles and shell fragments	Starfish (*Asterias rubens*), brittlestars (Ophiuroidea including areas of dense *Ophiothrix fragilis*), sea urchins (*Psammechinus miliaris*), scallop (*Aequipecten opercularis*), whelk (Buccinidae), soft coral (*Alcyonium digitatum*), anemones (Actiniaria including *Urticina* sp. and ?Sagartiidae), faunal tubes (Polychaeta including *Spirobranchus* sp.), encrusting bryozoans (Bryozoa), faunal turf (Hydrozoa/Bryozoa), small-spotted catshark (*Scyliorhinus canicula*)
	EOL	428 542.2	5 741 233.0				
FE4_08	SOL	433 570.9	5 743 180.0	62	FE4_08_01 - FE4_08_25	Gravelly muddy sand with cobbles and shell fragments	Starfish (*Asterias rubens*) small-spotted catshark (*Scyliorhinus canicula*), faunal tubes (Serpulidae), soft coral (*Alcyonium digitatum*)
	EOL	433 551.2	5 743 121.0				
FE5_01c	SOL	410 734.2	5 744 368.8	45	FE5_01_04 - FE5_01_10	Poor visibility, seabed not visible	Poor visibility, seabed not visible
	EOL	410 715.2	5 744 409.2				

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]							
Station	Point on Line	Video Coordinates		Length [m]	Still Nos.	Sediment Description	Fauna / Bioturbation / Debris
		Easting [m]	Northing [m]				
FE5_09a	SOL	419 135.2	5 737 771.0	55	FE5_09a_01 - FE5_09a_18	Gravelly sandy mud/muddy sand with occasional cobbles and shell fragments	Dense coverage of brittlestars (Ophiuroidea and *Ophiothrix fragilis*), starfish (*Asterias rubens*), sea urchins (*Psammechinus miliaris*), hermit crabs (Paguridae),-anemones (Actiniaria), soft coral (*Alcyonium digitatum*), faunal turf (Hydrozoa/Bryozoa), faunal tubes (Polychaeta including *Spirobranchus* sp.)
	EOL	419 165.6	5 737 817.0				
FE7b_01a	SOL	381 527.4	5 742 282.7	60	FE7b_01a_01 - FE7b_01a_12	Poor visibility. Gravelly sandy mud/muddy sand and shell fragments	Poor visibility. Faunal turf (Hydrozoa/Bryozoa)
	EOL	381 564.9	5 742 329.2				
FE7b_02	SOL	381 481.1	5 742 416.6	60	FE7b_02_01 - FE7b_02_09	Poor visibility. Gravelly sandy mud/muddy sand and shell fragments	Poor visibility. Faunal turf (Hydrozoa/Bryozoa), ross worm (*Sabellaria spinulosa*)
	EOL	381 427.4	5 742 389.8				
FE7b_03	SOL	381 529.2	5 742 039.4	13	FE7b_03_01 - FE7b_03_12	Poor visibility. Gravelly sandy mud/muddy sand and shell fragments	Poor visibility. Faunal turf (Hydrozoa/Bryozoa)
	EOL	381 538.6	5 742 030.4				
FE7d_02	SOL	391 599.2	5 745 598.3	58	FE7d_02_01 - FE7d_02_08	Poor visibility, seabed not visible	Poor visibility, seabed not visible
	EOL	391 554.2	5 745 561.6				
FE7d_02a	SOL	390 654.6	5 745 557.4	50	FE7d_02a_01 - FE7d_02a_14	Poor visibility. Gravelly sand, cobbles and shell fragments	Poor visibility. ?ross worm (*Sabellaria spinulosa*) crust
	EOL	390 626.0	5 745 516.8				
FE7d_03a	SOL	392 614.1	5 746 259.0	58	FE7d_03a_01 - FE7d_03a_16	Poor visibility. Possible gravelly sandy mud/muddy sand and shell fragments	Poor visibility. Bryozoan (*Flustra foliacea*)
	EOL	392 584.9	5 746 209.0				
FE7e_01a	SOL	392 908.4	5 748 203.0	55	FE7e_01a_01 - FE7e_01a_07	Poor visibility, seabed not visible	Poor visibility, seabed not visible
	EOL	392 881.4	5 748 155.0				

Geodetic Parameters: WGS 84, UTM Zone 31 N [m]							
Station	Point on Line	Video Coordinates		Length [m]	Still Nos.	Sediment Description	Fauna / Bioturbation / Debris
		Easting [m]	Northing [m]				
FE7e_03a_a	SOL	393 761.0	5 749 671.1	55	FE7e_03a_a_01 - FE7e_03a_a_16	Poor visibility. Sandy mud/muddy sand (?rippled) and shell fragments	Poor visibility. Faunal turf (Hydrozoa/Bryozoa), bryozoan (?*Vesicularia spinosa*)
	EOL	393 758.7	5 749 615.8				
FE7f_02a	SOL	395 971.5	5 750 593.6	67	FE7f_02a_01 - FE7f_02a_15	Poor visibility. Possible gravelly sand, cobbles and boulders	Poor visibility. Bryozoan (*Flustra foliacea*), soft coral (*Alcyonium digitatum*), faunal turf (Hydrozoa/Bryozoa), ?ross worm (*Sabellaria spinulosa*)
	EOL	395 941.7	5 750 533.2				
Notes UTC = Coordinated Universal Time ? = Identification is uncertain							

Appendix C

Seabed Photographs

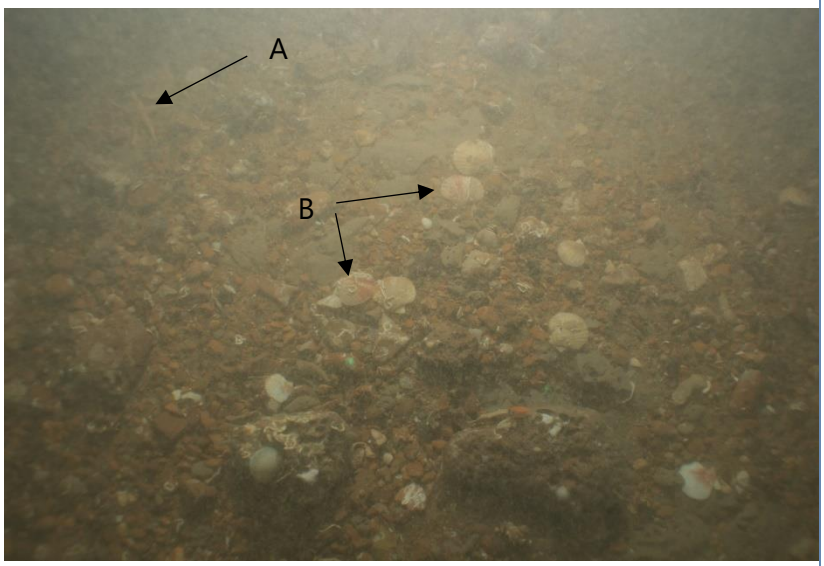
No seabed photographs displayed for stations FE4_08, FE5_01c, FE5_09a, FE7b_01a, FE7b_02, FE7b_03, FE7d_02, FE7_02a, FE7d_03a, FE7e_01a, FE7e_03a_a and FE7f_02a due to the low visibility conditions encountered from these locations.

STATION FE1_01

Photograph:
200867_FE1_01_05

Sediment Type:
Sandy muddy gravel with shell fragments

Fauna:
A: Serpulid tubes (*Spirobranchus* sp.)

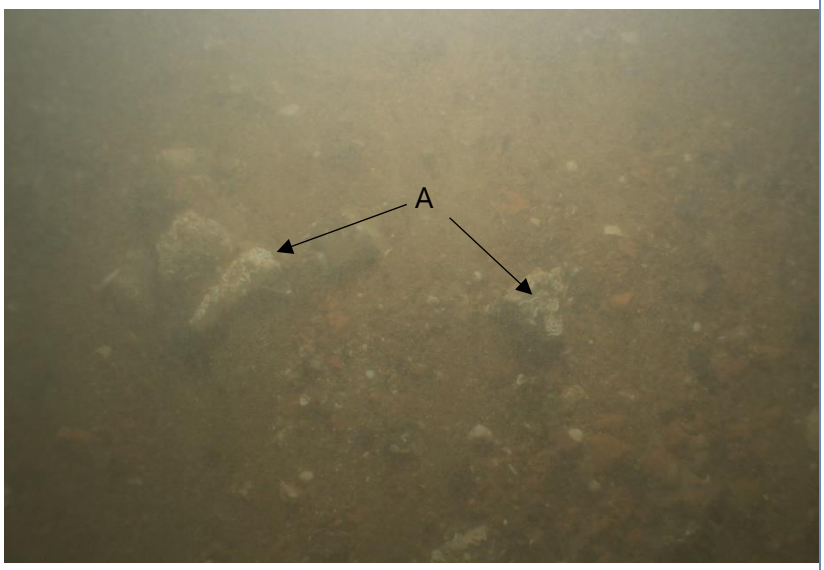


Photograph:
200867_FE1_01_09

Sediment Type:
Sandy muddy gravel with cobbles and shell fragments

Fauna:
A: Starfish (*Asterias rubens*)
B: Queen scallop (*Aequipecten opercularis*)

STATION FE1_02



Photograph:
200867_FE1_02_04

Sediment Type:

Gravelly muddy sand with cobbles, boulders and shell fragments

Fauna:

A: Serpulid tubes (*Spirobranchus* sp.)

Photograph:
200867_FE1_02_08

Sediment Type:

Gravelly muddy sand with cobbles, boulders and shell fragments

Fauna:

A: Starfish (*Asterias rubens)*

B: Serpulid tubes (*Spirobranchus* sp.)

STATION FE1_04

Photograph:
200867_FE1_04_02

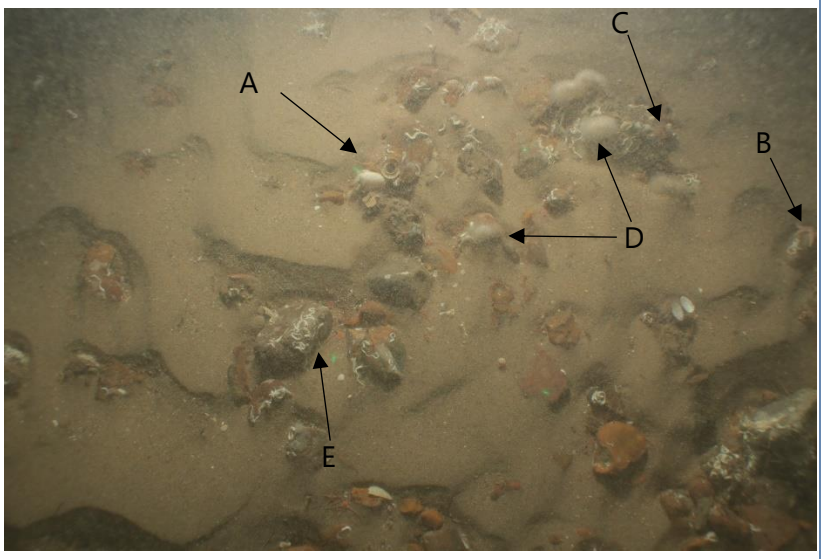
Sediment Type:

Rippled sand with pebbles and cobbles

Fauna:

A: Brittlestars (Ophiuroidea)

B: Serpulid tubes (*Spirobranchus* sp.)



Photograph:
200867_FE1_04_15

Sediment Type:

Rippled sand with pebbles and cobbles and shell fragments

Fauna:

A: Brittlestars (Ophiuroidea)

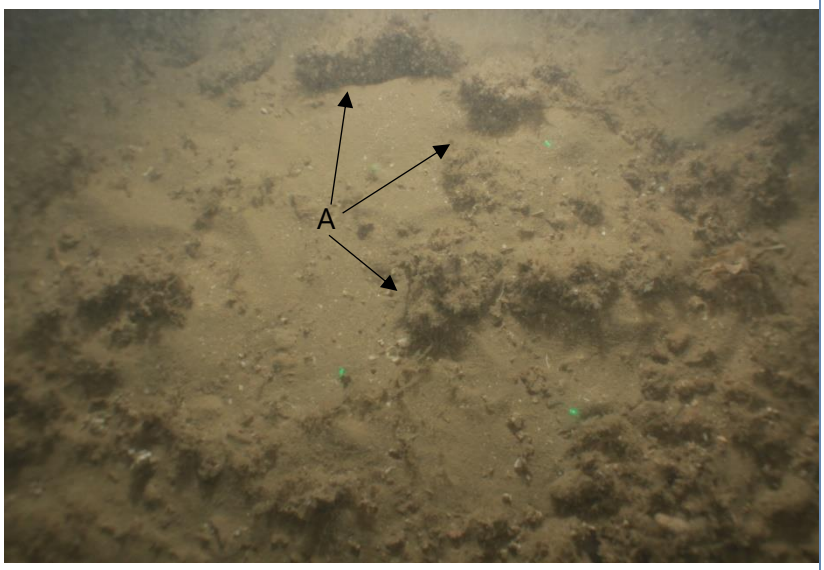
B: Starfish (*Asterias rubens*)

C: Sea urchins (*Psammechinus miliaris*)

D: Soft coral (*Alcyonium digitatum*)

E: Faunal tubes (Polychaeta)

STATION FE4_01



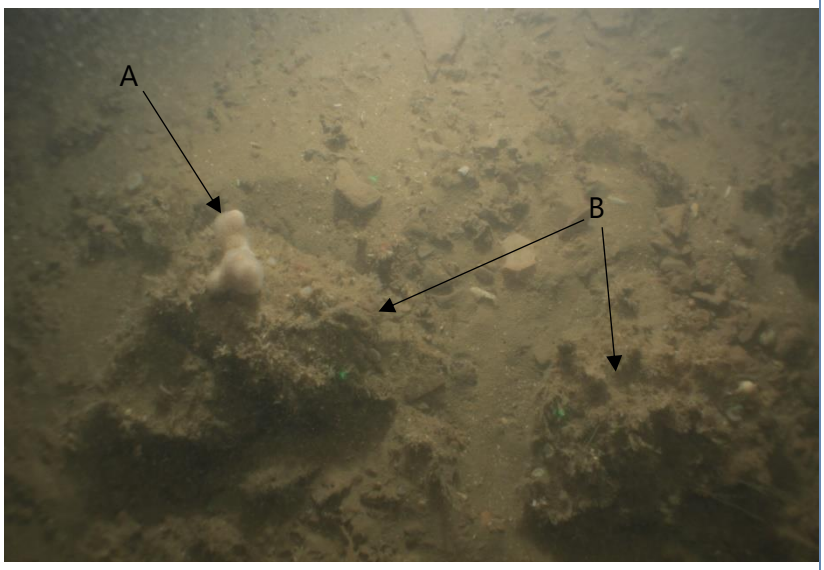
Photograph:
200867_FE4_01_01

Sediment Type:

Gravelly sandy mud/muddy sand with shell fragments

Fauna:

A: Faunal turf (Hydrozoa/Bryozoa)



Photograph:
200867_FE4_01_09

Sediment Type:

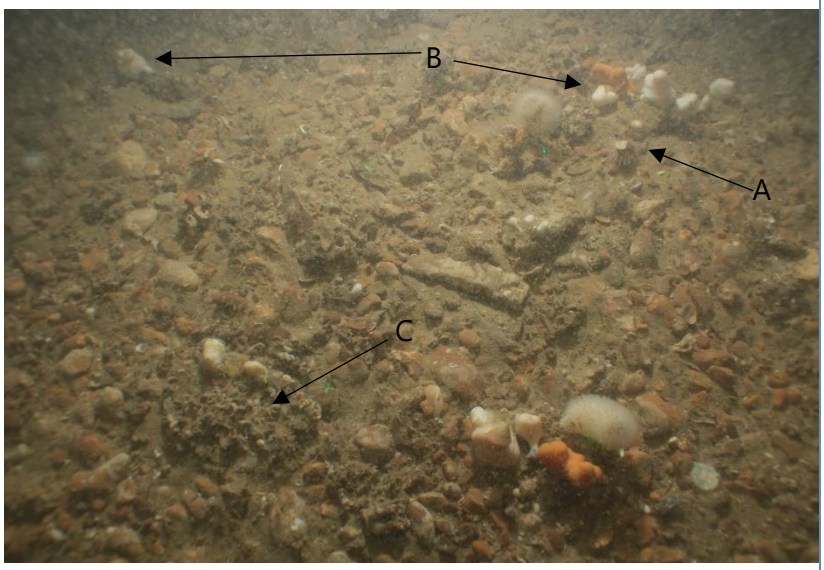
Gravelly sandy mud/muddy sand with shell fragments

Fauna:

A: Soft coral (*Alcyonium digitatum*)

B: Faunal turf (Hydrozoa/Bryozoa)

STATION FE4_02



Photograph:
200867_FE4_02_03

Sediment Type:

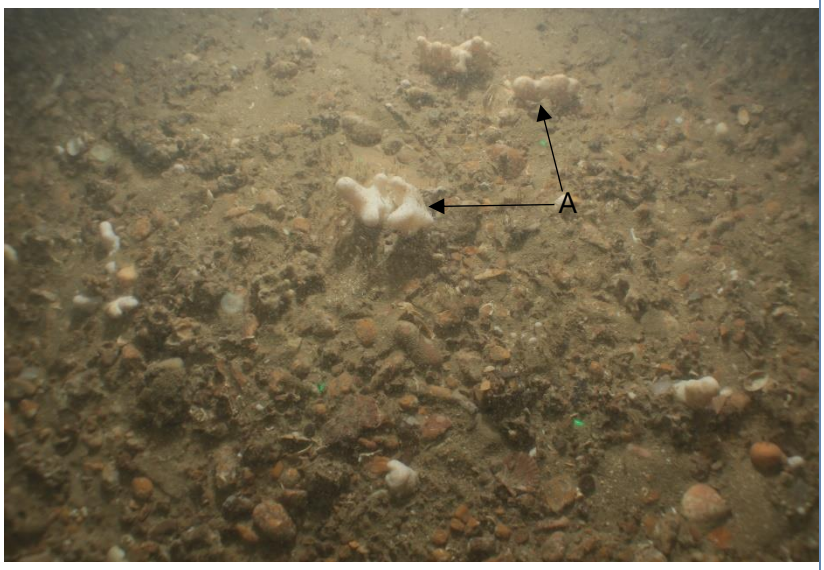
Gravelly sandy mud/muddy sand with cobbles and shell fragments

Fauna:

A: Sea urchins (*Psammechinus miliaris*)

B: Soft coral (*Alcyonium digitatum*)

C: Faunal turf (Hydrozoa/Bryozoa)



Photograph:
200867_FE4_02_14

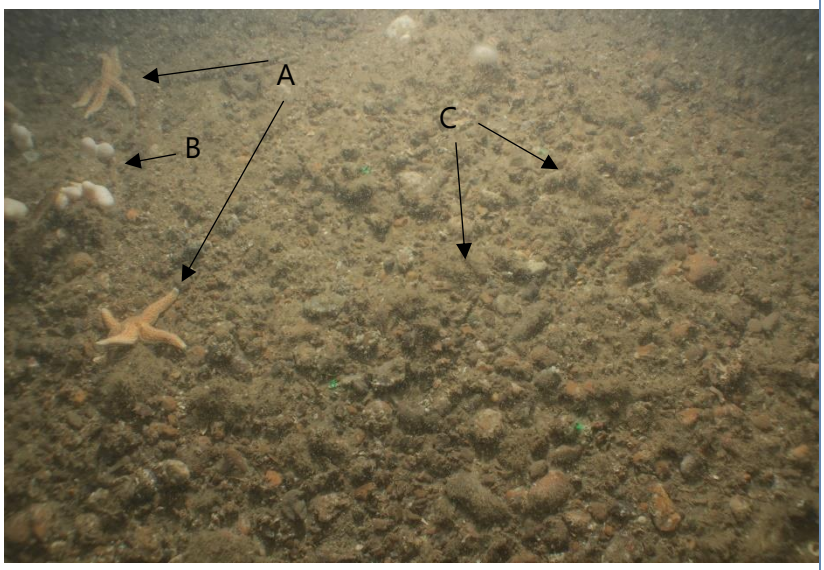
Sediment Type:

Gravelly sandy mud/muddy sand with cobbles and shell fragments

Fauna:

A: Soft coral (*Alcyonium digitatum)*

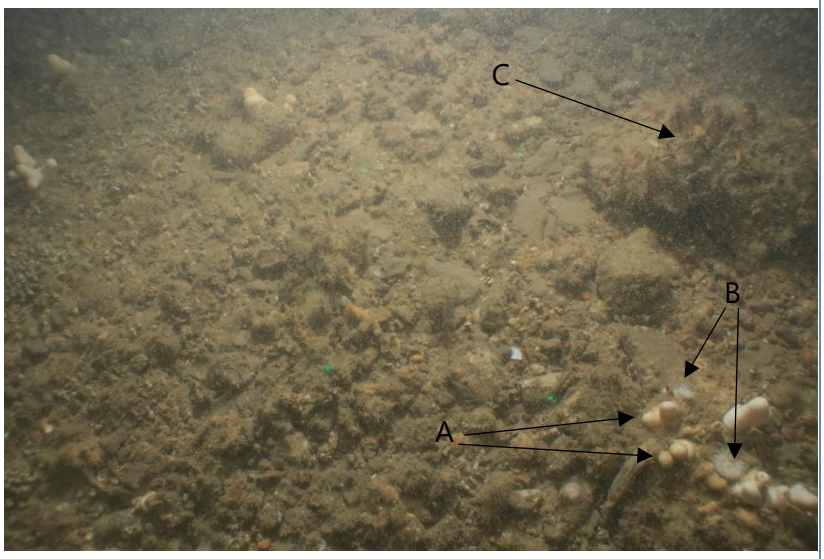
STATION FE4_03



Photograph:
200867_FE4_03_02

Sediment Type:
Gravelly muddy sand with cobbles and shell fragments

Fauna:
A: Starfish (*Asterias rubens*)
B: Soft coral (*Alcyonium digitatum*)
C: Faunal turf (Hydrozoa/Bryozoa)

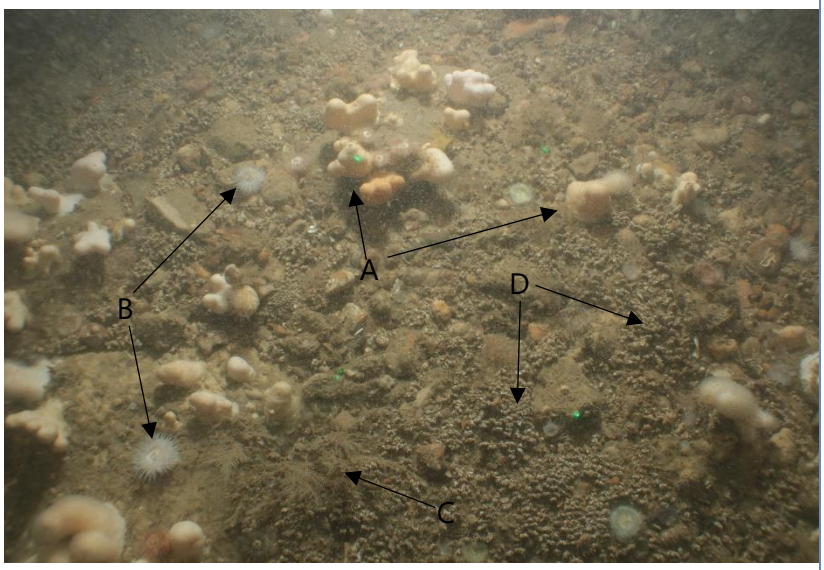


Photograph:
200867_FE4_03_10

Sediment Type:
Clay and gravelly muddy sand with cobbles and shell fragments

Fauna:
A: Soft coral (*Alcyonium digitatum*)
B: Anemones (Actinaria)
C: Faunal turf (Hydrozoa/Bryozoa)

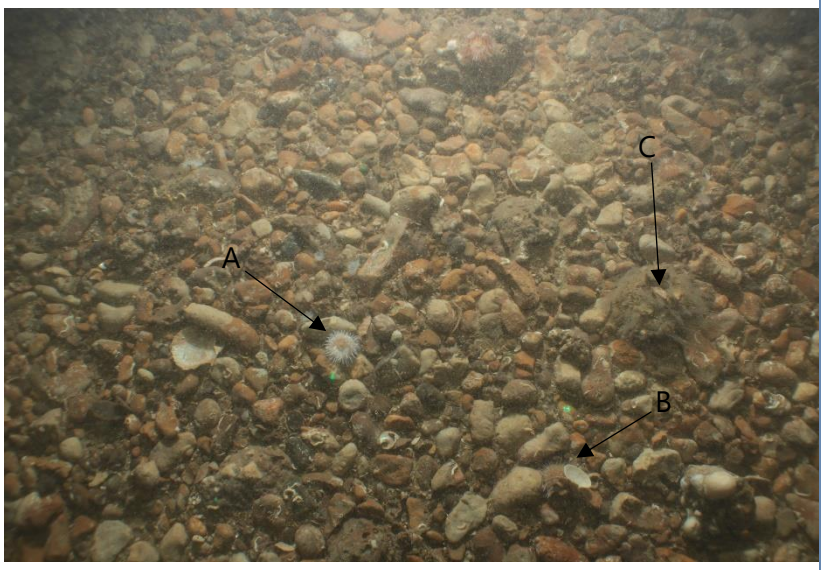
STATION FE4_04



Photograph:
200867_FE4_04_09

Sediment Type:
Gravelly muddy sand with cobbles and boulders

Fauna:
A: Soft corals (*Alcyonium digitatum*)
B: Anemones (Actinaria)
C: Faunal turf (Hydrozoa/Bryozoa)
D: Ross worm (*Sabellaria spinulosa*)

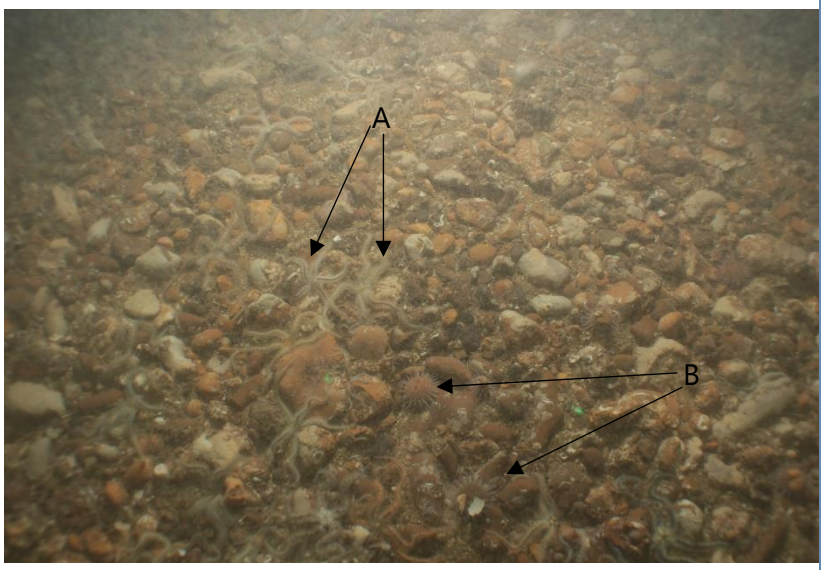


Photograph:
200867_FE4_04_18

Sediment Type:
Sandy gravel with cobbles

Fauna:
A: Anemone (Actinaria)
B: Sea urchin (*Psammechinus miliaris*)
C: Faunal turf (Hydrozoa/Bryozoa)

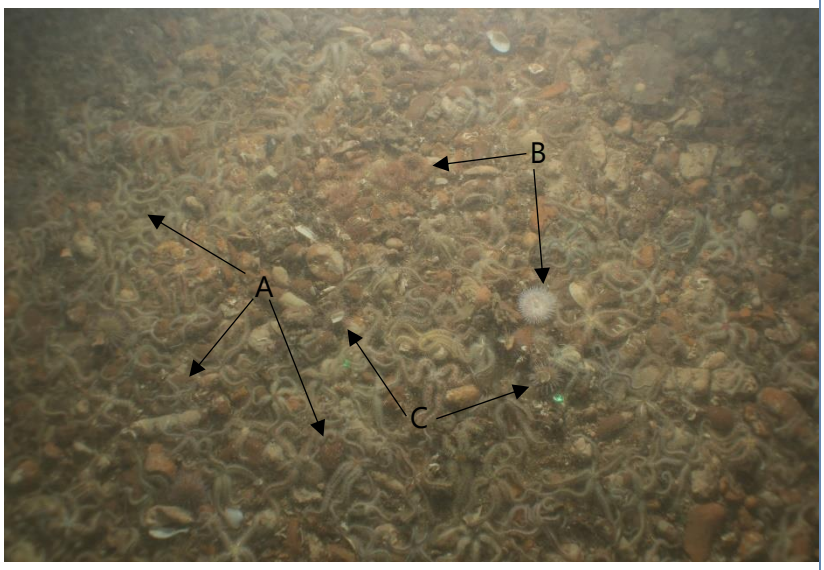
STATION FE4_05



Photograph:
200867_FE4_05_01

Sediment Type:
Sandy muddy gravel with cobbles

Fauna:
A: Brittlestars (*Ophiothrix fragilis*)
B: Sea urchin (*Psammechius miliaris)*

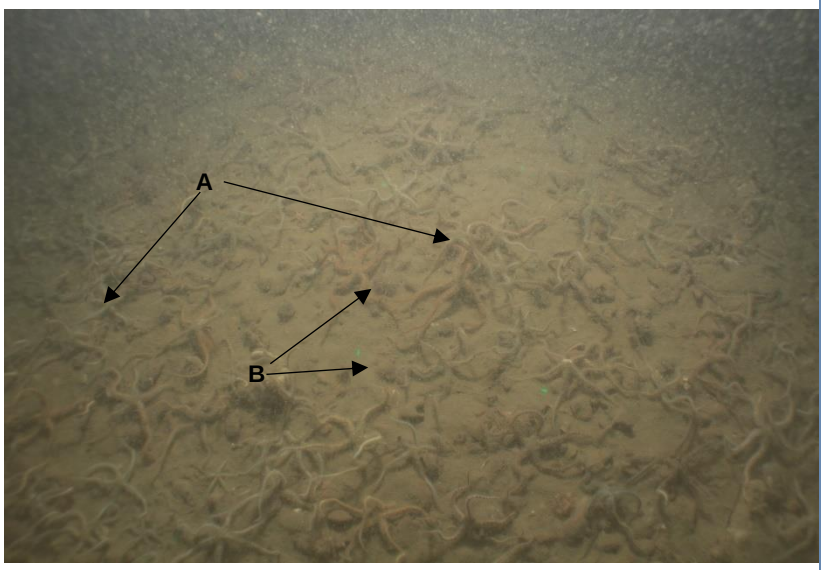


Photograph:
200867_FE4_05_

Sediment Type:
Sandy muddy gravel with cobbles

Fauna:
A: Brittlestars (*Ophiothrix fragilis*)
B: Anemone (Actinaria)
C: Sea urchins
(*Psammechinus miliaris*)

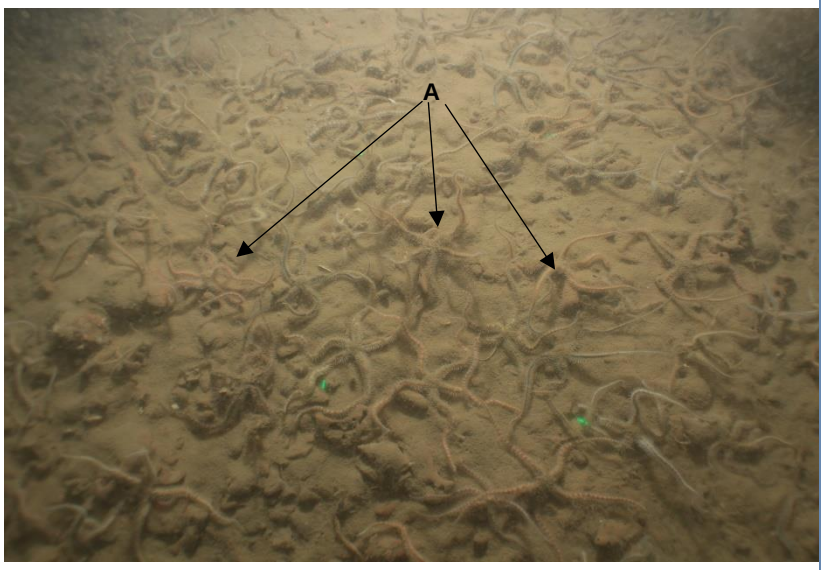
STATION FE5_09a



Photograph:
200867_FE5_09a_02

Sediment Type:
Gravelly sandy mud/muddy sand

Fauna:
A: Brittlestars (*Ophiothrix fragilis*)
B: Sea urchin (*Psammechinus miliaris*)



Photograph:
200867_FE5_09a_18

Sediment Type:
Gravelly sandy mud/muddy sand

Fauna:
A: Brittlestars (*Ophiothrix fragilis*)

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