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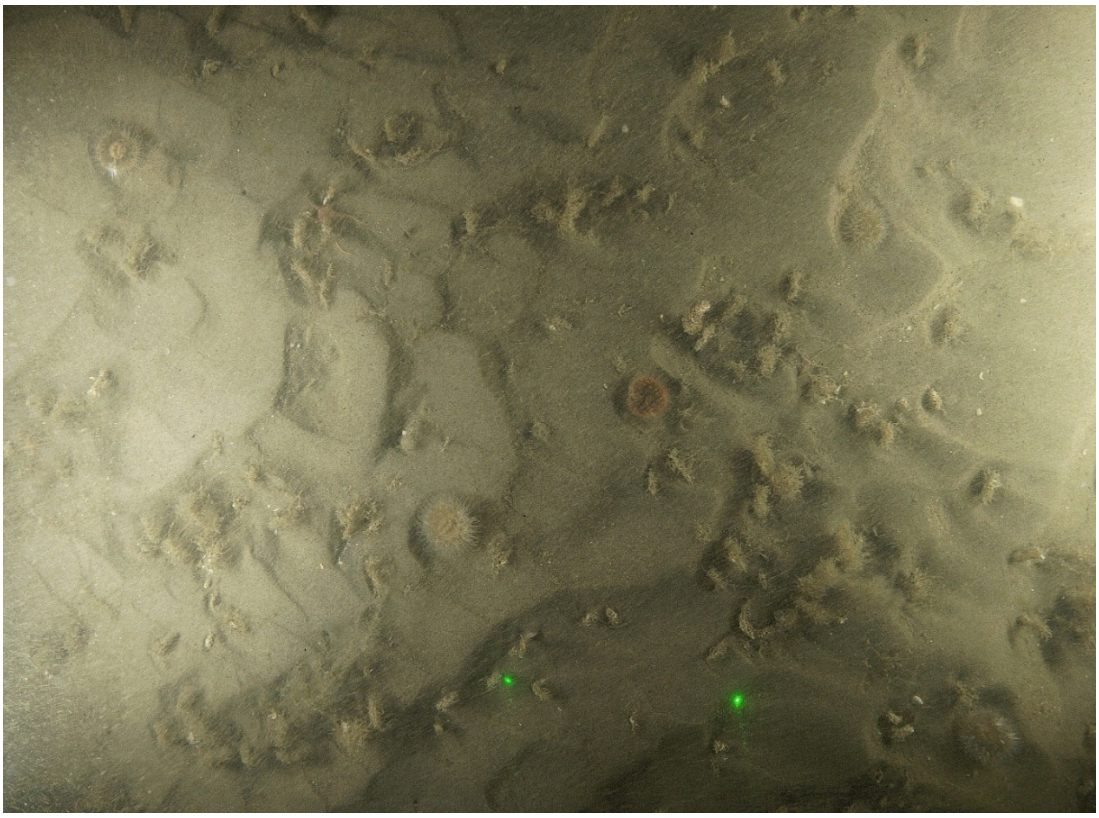
Making Sense of the Marine Environment ™

N05A-7-10-0-70041-01-02 - Habitat Assessment Report - N05a-Riffgat OWF Cable Route Area



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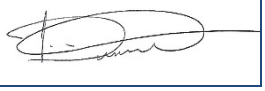
28/01/2022	Phil Durrant	v2.0	Director Sign-off / External Document	

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Data Licenses

Charts NOT TO BE USED FOR NAVIGATION.

Glossary

Abbreviation	Definition
CM	Central Meridian
CLOC	Clear Liquid Optical Chamber
DDV	Drop Down Video
DVV	Dual Van Veen
EBS	Environmental Baseline Survey
EEA	European Environment Agency
EOL	End of Line
EUNIS	European Nature Information System
HAB	Habitat Assessment
HD	High Definition
IUCN	International Union for Conservation of Nature
MBES	Multibeam Echo Sounder
MP	Megapixel
OWF	Offshore Wind Farm
OSPAR	Oslo/Paris Convention (for the Protection of the Marine Environment of the North-East Atlantic)
PC	Physico-chemistry
SBP	Sub-bottom Profiler
SCI	Site of Community Importance
SOL	Start of Line
SOW	Scope of Work
SPA	Special Area of Conservation

SSS	Side Scan Sonar
TOC	Total Organic Carbon
TOM	Total Organic Matter
USBL	Ultra-Short Base Line (positioning beacon)
UTM	Universal Mercator Projection
WWF	World Wildlife Fund

Executive Summary

MarineSpace Ltd was commissioned by GEOxyz on behalf of ONE-Dyas BV, to produce a Habitat Assessment Report for the N05a-Riffgat OWF Cable route in Dutch and German waters. The report aimed to identify the occurrence of species or communities of conservation importance listed under Annex I of the EU habitats Directive (1992) as well as any threatened and/or declining species and habitats on the Oslo-Paris (OSPAR) Commission list (OSPAR, 2008).

Geophysical data were collected at the N05a-Riffgat OWF cable route using side-scan sonar (SSS) and multi-beam echosounder (MBES). Drop-down video (DDV) was conducted along, 18 x 100 – 200 m long transects and grab sampling was undertaken at 18 co-located stations. Geophysical data were interpreted during the survey to determine bathymetry and delineated potential features of conservation importance, which were subsequently used to inform the location of the DDV and grab sample locations. Video and still collected from DDV were reviewed to ascertain presence and absence of species and habitats of conservation importance. Grab samples we also reviewed to identify the occurrence of species of conservation importance.

Within the N05a-Riffgat OWF cable route, water depth ranged from 18.7 m lowest astronomical tide (LAT) to 26.6 m LAT. A series of natural minor troughs, predominantly trending north-west to south-east, occurred where the acquired data narrows within the Riffgat OWF area. These were interpreted to be related to tidal/current processes. Seabed sediments were interpreted within the charted area as fine sand with shell fragments, coarse sand with shell fragments, coarse sand and clay and coarse sand with a high density of sand mason worms and razor clams. Numerous SSS contacts were identified within the charted area, with the majority interpreted as boulders.

Habitat within the survey area was found to be homogeneous and predominantly fine sand within the area ‘fine sand with shell fragments’ while habitat within the ‘coarse sand and clay’ was predominantly coarse sand with areas of cobbles and boulders and areas of high density *Lanice conchilega*. Correspondingly, 3 x level 3 EUNIS habitats were identified; A5.23 infralittoral fine sand, A5.13 infralittoral coarse sediment, A5.43 infralittoral mixed sediment as well as 1 x level 4 EUNIS habitat: A5.137 dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand.

Substrate larger than 64 mm (cobbles and boulders) were identified from seabed imagery at 12 stations and therefore a stony reef assessment was conducted. Cobbles and boulder observed in the DDV were plotted on geographical information system (GIS) software, this revealed an area less than 100 m^2 for each transect. Furthermore, cobble and boulder areas were separated on average by more than 20 m. From the epifauna observed only a few were associated with Reefs (H1170). Therefore, based on the Dutch Ministry of Agriculture, Nature and Food Quality (MANFQ, 2014a), these areas of cobbles and/or boulders could not be defined as EC Habitats Directive Annex I Reefs (H1170).

Sediment type, depth and fauna were found to meet the requirement of the EC Habitats Directive Annex I habitat subtype H1110_C (MANFQ, 2014b). However, the geophysical data found no sandbank features within the N05a-Riffgat OWF cable route.

The cobbles and boulders presented a hard substrate on which Porifera can grow and potentially form deep-sea sponge aggregation, which are classified as threatened and/or declining habitat (OSPAR, 2008). However, frequency and percentage cover of Porifera was determined as rare across the N05a-Riffgat OWF cable route.

Only one individual of Pennatulacea (sea pen) was observed within the N05a-Riffgat OWF cable route area. Consequently, there is little to no resemblance to sea pens and burrowing megafauna in circalittoral fine mud, which is listed as a threatened and/or declining habitat (OSPAR, 2008).

Other than those detailed above there was no further evidence of any Annex I habitats, any species or habitats on the OSPAR (2008) list of threatened and/or declining species or any species on the IUCN Global Red List within the N05a-Riffgat OWF cable route.

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1. Project Summary

1.1. Scope of Work

ONE-Dyas BV plans to develop a successfully drilled well in block N04a of the North Sea Dutch Continental Shelf. It is planned to develop the well by installing a minimum facilities platform and gas export pipeline with a connection to the future N05a processing platform (here on in referred to as 'The Project'). The Project runs along the Dutch German border within Dutch blocks N04a and N05a, with a portion crossing over into German waters. A habitat assessment (HAB) in conjunction with an environmental baseline (EBS), geophysical and geotechnical survey, are required prior to well development operations at N04a and export pipeline connection works. The current report details the results of the HAB for the N05a to Riffgat offshore wind farm (OWF) cable route area only and includes a summary of relevant results from the geophysical and environmental baseline survey. All other environmental reporting for the Project can be found within the following reporting volumes:

- N05A-7-10-0-70044-01-xx - Habitat Assessment Report - N05a Platform Area;
- N04A-7-10-0-70022-01-xx - Habitat Assessment Report - N04a to N05a Pipe Route;
- N04A-7-10-0-70023-01-xx - Habitat Assessment Report - N04a Platform Area;
- N04A-7-10-0-70015-01-xx - Environmental Baseline Survey Report - All Areas.

1.1.1. N05a-Riffgat OWF Cable Route Area

Environmental and geophysical data were collected along the pipeline, platform areas (N04a and N05a) and power cable. The specific aims of the habitats assessment as defined in the scope of work (SOW; GEOxyz, 2021a) were to assess for the potential presence of important and environmentally sensitive habitats and species, including:

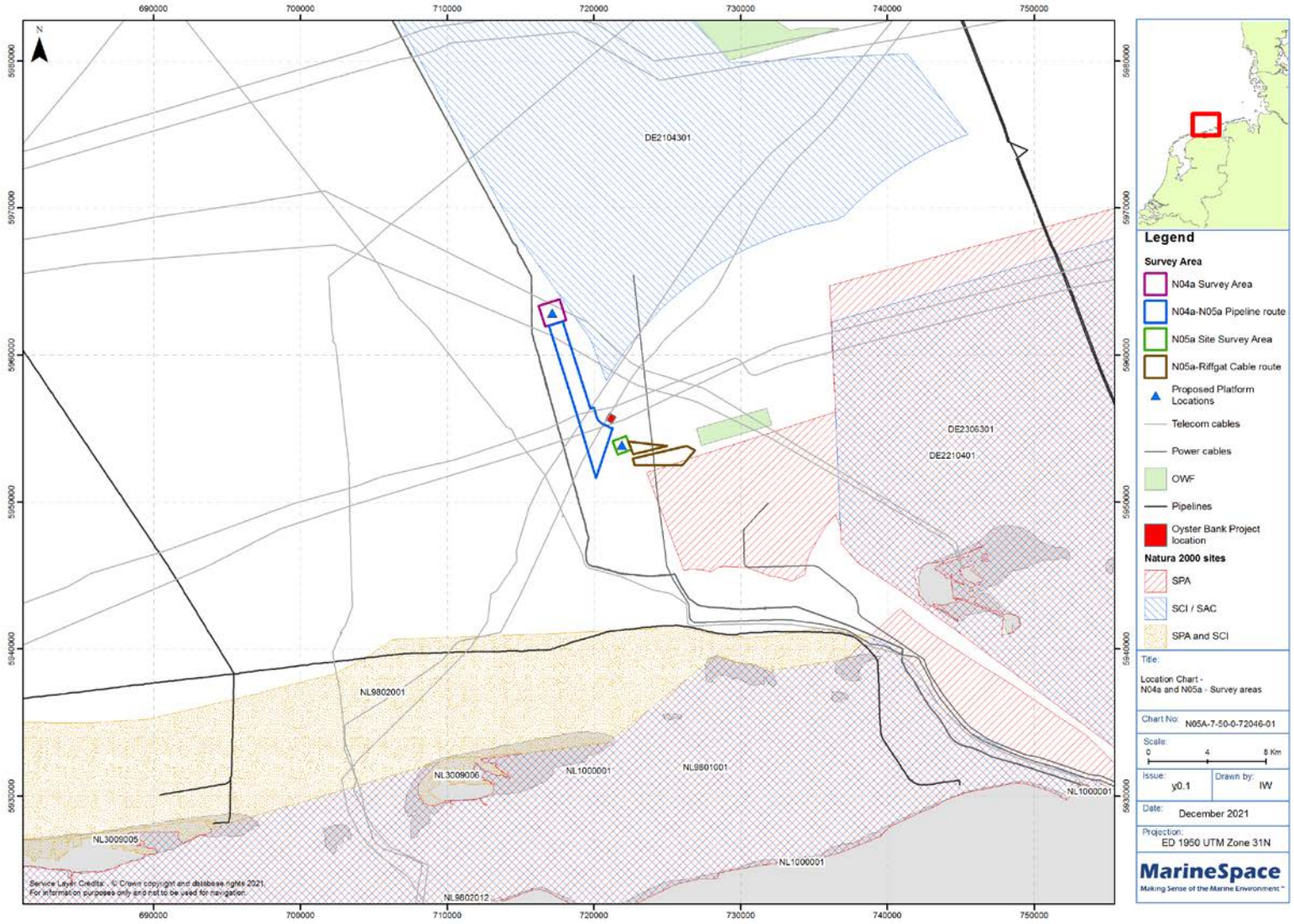
- Annex I habitats of the EU habitats Directive (1992) particularly EU habitat 1170 stony reef and habitat 1110 Sandbanks which are slightly covered by sea water all the time;
- Any evidence of the threatened and/or declining species habitats listed by OSPAR (2008)
- Species on the International Union for Conservation of Nature's (IUCN) Red List of threatened species (IUCN, 2021).

Locations coordinates of the future platforms are presented in Table 1.1. All coordinates within this report are referenced to International 1924 Ellipsoid, European Datum 1950. Grid coordinates are projected using the Universal Mercator Projection (UTM) Zone 31, Central Meridian (CM) 3° E.

Table 1.1: Coordinates of future platform locations

Future Platform Locations	Easting	Northing	Latitude	Longitude
N04A	5962867	717150	53° 46' 04.51" N	006° 17' 41.46" E
N05A	5953858	721896	53° 41' 06.32" N	006° 21' 36.97" E

Figure 1.1: Location of the N05a-Riffgat OWF cable route



1.2. Environmental Survey Strategy

During October and November 2021, the environmental and geophysical surveys were conducted onboard the GEOxyz survey vessel Geo-Ocean III from 20 October to 16 November. All environmental work was conducted by MarineSpace, supported by Associates from Ocean Ecology Ltd, between 05 - 11 November 2021. The geophysical data acquisition was conducted by GEOxyz between 23 October to 12 November 2021 and has been reported separately by Peak Processing for each survey area (GEOxyz, 2021b; 2021c; 2022a; 2022b).

Geophysical data were collected using a multibeam echo sounder (MBES), side scan sonar (SSS), sub-bottom profiler (SBP) and Magnetometer. Following geophysical data acquisition, SSS and MBES data were reviewed to propose location for benthic grab sampling and camera investigations. Areas of potential conservation value and boundaries between areas of differing reflectivity were factored into sample locations in order to identify potential changes in seabed sediment type and bathymetric highs and lows.

A total of 18 transects and co-located environmental sampling stations were spaced across lower, mixed and higher reflectivity areas within the N05a—Riffgat OWF cable route in areas that were previously not investigated by the 2019 N5a Development HAB (GEOxyz, 2019).

Details of the environmental targets and data collected along targeted features of interest observed within the geophysical data, are summarised in Table 1.2 for camera transects and in Table 1.3 for grab targets. Target and actual sampling locations, are presented in the Surveyor's log sheets in Appendix A and in Figure 1.2 and Figure 1.3 along with the surveyed 2021 N05a-Riffgat OWF cable route area.

Table 1.2: Summary of transect targets and data acquired

Transect	SOL/EOL[1]	Proposed Easting[2]	Proposed Northing[2]	Proposed Length (m)	Rationale	Transect Completed (Y/N)	Length Achieved (m)
ENV20	SOL	725362	5953468	200	Along an area of mixed reflectivity indicative of heterogenous sediments. Following an overall site assessment of high-density boulder/cobble areas, the transect intersects the majority of identified areas.	Y	182
	EOL	725237	5953386				
ENV28	SOL	722143	5953888	100	Along an area of homogenous lower reflectivity.	Y	192
	EOL	722110	5953798				
ENV29	SOL	723781	5953798	200	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	267
	EOL	723706	5953612				
ENV30	SOL	724217	5953761	200	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	275
	EOL	724052	5953647				
ENV31	SOL	723821	5953104	150	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	218
	EOL	723766	5952964				
ENV32	SOL	724258	5953128	150	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	206
	EOL	724200	5952988				
ENV33	SOL	724768	5953197	150	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	219
	EOL	724713	5953057				
ENV34	SOL	725325	5953140	150	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	219
	EOL	725270	5953280				
ENV35	SOL	725806	5953298	150	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	205
	EOL	725810	5953148				
ENV36	SOL	726360	5953290	150	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	186
	EOL	726364	5953140				
ENV37	SOL	726746	5953342	150	Along and area of homogenous sand ripples.	Y	194
	EOL	726688	5953480				
ENV38	SOL	723271	5952761	150	Along an area of homogenous higher reflectivity.	Y	209
	EOL	723270	5952611				
ENV39	SOL	723022	5953288	150	Along an area of heterogenous mixed reflectivity indicative of higher density boulders and cobbles.	Y	228
	EOL	722937	5953164				
ENV40	SOL	724326	5952647	150	Along an area of homogenous higher reflectivity.	Y	236
	EOL	724249	5952776				
ENV41	SOL	724877	5952968	200	Along an area of homogenous higher reflectivity. Intersecting a potential sand bank feature.	Y	245
	EOL	724856	5952769				
ENV42	SOL	725411	5952687	150	Along an area of homogenous higher reflectivity. Intersecting a potential sand bank feature.	Y	235
	EOL	725402	5952837				
ENV43	SOL	725824	5952881	200	Along an area of homogenous higher reflectivity. Intersecting a potential sand bank feature.	Y	264
	EOL	725767	5952689				
ENV44	SOL	726172	5953000	150	Along an area of heterogenous higher reflectivity. Intersecting a potential sand bank feature.	Y	228
	EOL	726124	5952858				

1 Proposed transect locations, actual drop-down video still positions are detailed in Appendix A

2 Start of line (SOL) and end of line (EOL)

Table 1.3: Grab sample targets and data acquired

Station	Proposed Easting (m)[1]	Proposed Northing (m)[1]	Depth (m LAT)[2]	Rationale	Grab Samples Acquired[3]			
					PC	MACA	MACB	MACC
ENV20	725295	5953419	23.7	Area of mixed reflectivity indicative of heterogeneous sediments. Following an overall site assessment of high-density boulder/cobble areas.	1	1	1	1
ENV28	722693.77	5953622	23.9	Moved 133 m SW of a proposed vibrocore station in an area of homogenous lower reflectivity.	1	1	1	1
ENV29	723749	5953719	24.4	Moved 26 m NW of a proposed vibrocore station in an area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV30	724151	5953716	23.7	Moved 85 m West of a proposed vibrocore station in an area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV31	723784	5953009	23.8	Area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV32	724234	5953077	24.7	Moved 75 m SW from a proposed vibrocore station and magnetometer anomaly in an area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV33	724757	5953171	24.3	Moved 50 m SW of a magnetometer anomaly in an area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV34	725298	5953207	23.7	Area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV35	725808	5953207	23.3	Area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV36	726362	5953211	22.7	Moved 45 m East of a proposed vibrocore station in an area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV37	726717	5953412	22.2	Area of homogenous lower reflectivity sand ripples.	1	1	1	1
ENV38	723270	5952703	20.4	Area of homogenous higher reflectivity.	1	1	1	1
ENV39	722979	5953224	24.3	Station relocated to capture a potential area of mixed reflectivity indicative of heterogenous sediments of higher density boulders/cobbles.	1	1	1	1
ENV40	724291	5952706	21.1	Area of homogenous higher reflectivity.	1	1	1	1
ENV41	724865	5952851	22.6	Moved 80 m north to centralise station over a higher reflectivity potential sandbank feature.	1	1	1	1
ENV42	725410	5952700	21.9	Moved 100 m away from a proposed vibrocore station and magnetometer anomaly. In an area of homogenous higher reflectivity.	1	1	1	1
ENV43	725775	5952715	22	Moved 40 m NW from a proposed vibrocore station. In an area of homogenous higher reflectivity.	1	1	1	1
ENV44	726134	5952885	22.2	Moved 70 m West of a magnetometer anomaly. In an area of potentially heterogenous higher reflectivity.	1	1	1	1

1 Grab proposed sample locations, actual sampling positions are detailed in Appendix A

2 Depth at target location recorded from processed MBES data

3 1 physico-chemistry sample (PC) and 3 macrofauna samples (MACA, MACB and MACC)

Figure 1.2: N05a-Riffgat OWF cable route including target and actuals, Stations ENV20, ENV28-32, ENV38-40

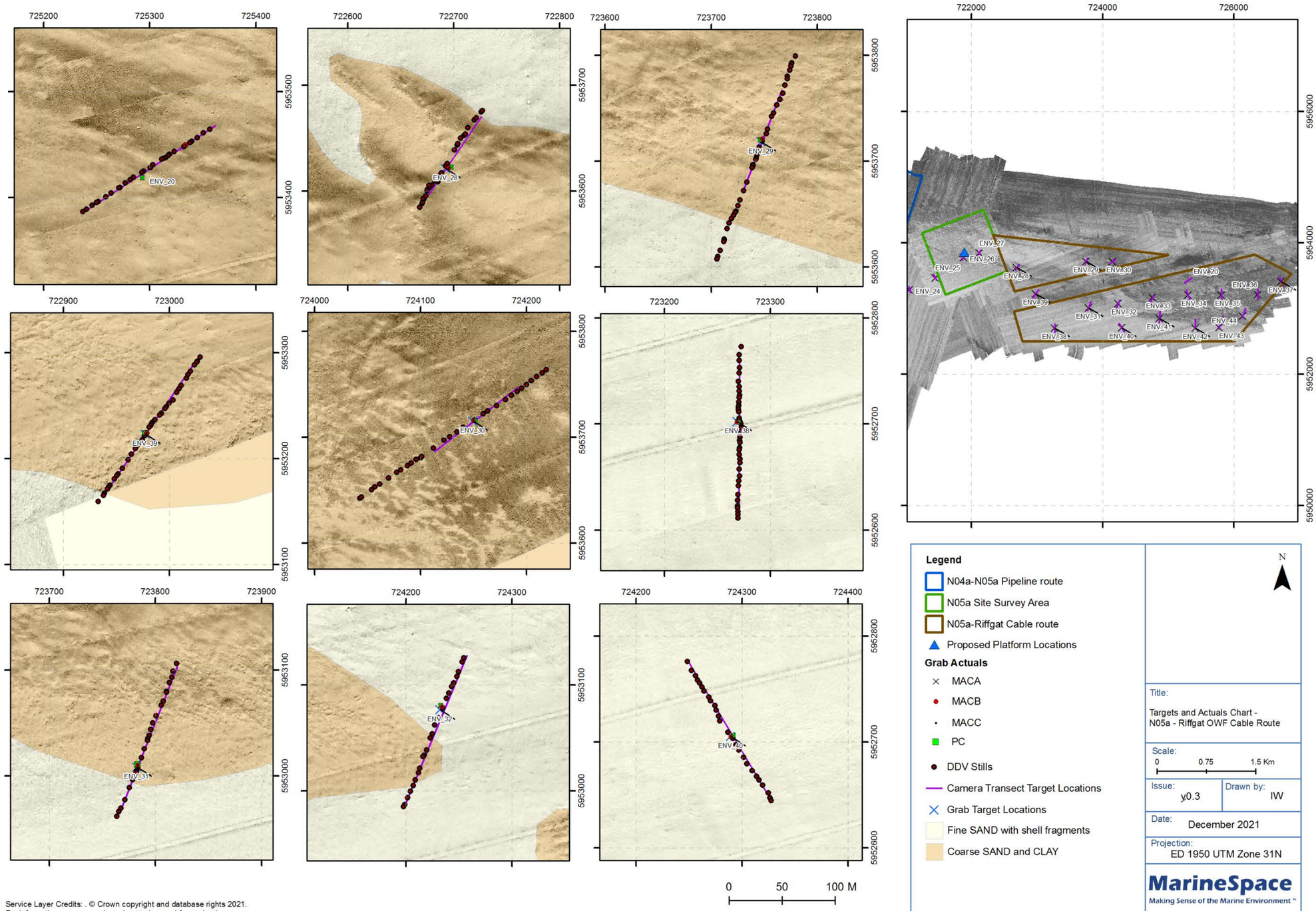
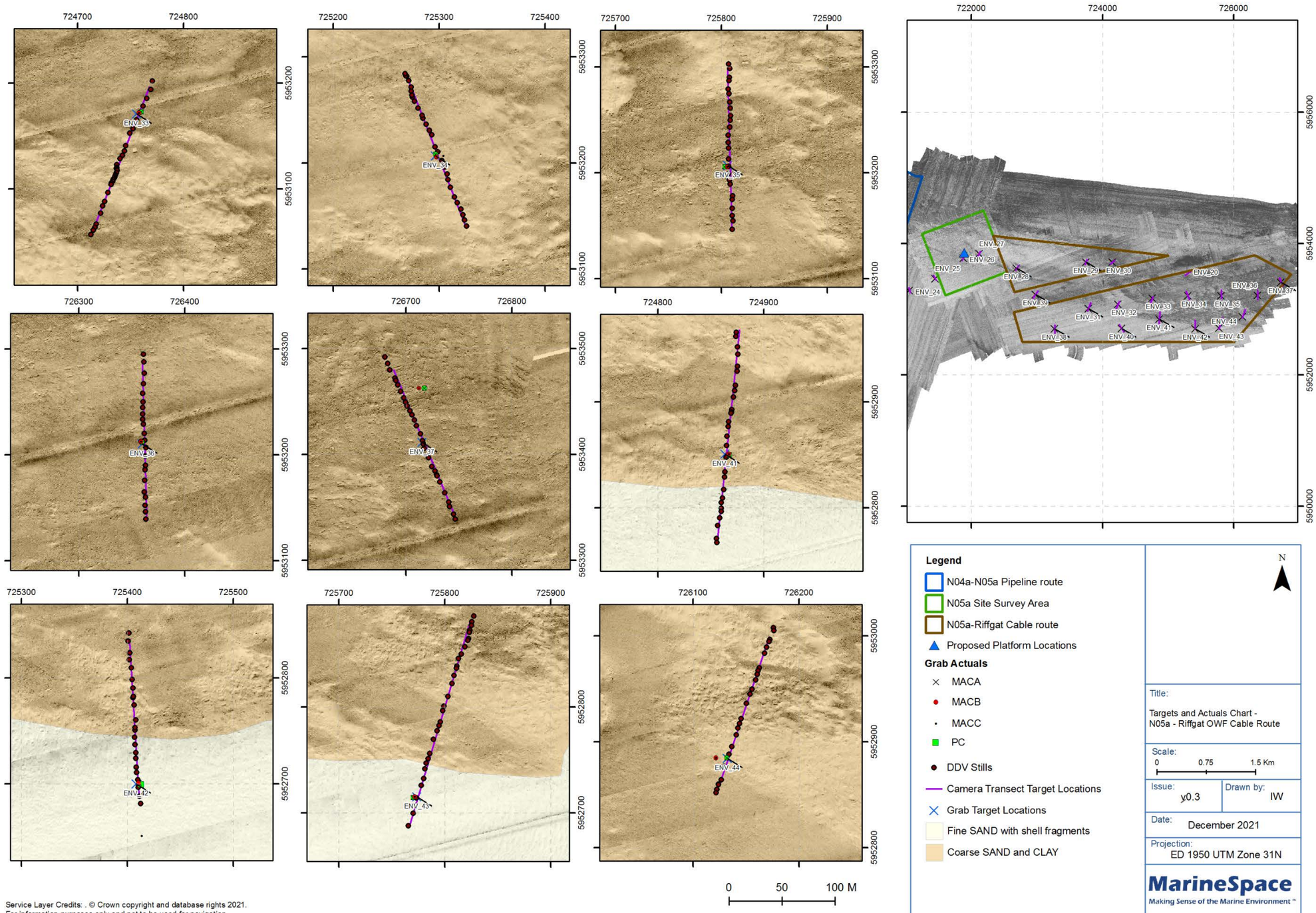


Figure 1.3: N05a-Riffgat OWF cable route including targets and actuals, Stations ENV33-37, ENV41-44



1.3. Background Habitat Information

1.3.1. Overview

This section presents an overview of sensitive habitats and species that are likely to occur within offshore Dutch and German waters in the vicinity of the Project.

As outlined in Section 1.1, the SOW (GEOxyz, 2021a) called for an assessment for the potential presence of important and environmentally sensitive habitats and species including Annex I habitats (1992), the OSPAR (2008) list of threatened and/or declining species and the IUCN Red List of threatened species (IUCN, 2021).

It is noted that the proposed pipeline route is located adjacent to the Borkum-Rifgrund site of community importance (SCI) and close to the Niedersächsisches Wattenmeer und angrenzendes Küstenmeer special area of conservation (SPA). The Borkum-Riffgrun area was designated as an SCI under the Habitats Directive (1992) based on the presence of protected habitats including sandbanks which are slightly covered by sea water all of the time and reefs as well as the presence of various bird species, shad *Alosa fallax* and grey seals *Halichoerus grypus*. The Niedersächsisches Wattenmeer und angrenzendes Küstenmeer was designated as an SPA in March 2010 due to the presence of numerous protected bird species.

Since 2018, a flat oyster *Ostrea edulis* reef restoration project – World Wildlife Fund (WWF) oyster bank project - has been ongoing in the Borkum Stones area, off the Dutch coast. In September 2019 evidence was obtained that settlement took place in the newly established offshore population in 2018. Given its proximity to the project, care has been taken to identify and record any oysters collected during the sampling programme for reporting back to the WWF oyster bank project.

The previous survey near the N05a platform (GEOxyz, 2019) identified sediment type and fauna within the survey area associated with the Annex I habitat: sandbanks which are slightly covered by sea water all of the time, which met the requirements outline by Jak *et al*., (2009) based on the Dutch Ministry of Agriculture, Nature and Food Quality (MANFQ, 2008). Additionally, 1 seabed camera transect exhibited potential resemblance to Annex I geogenic reef. However, following an assessment, the area was not considered to be sufficiently noteworthy to be classified as an Annex I stony reef.

The subsections below provides background information of sensitive species and habitats that may occur within the survey area. Figure 1.1 spatially displays Marine Protected Areas (MPAs) in relation to the survey area.

1.3.2. H1170 - Reefs

Reefs (H1170) are one of the habitats listed under Annex I of the EU Habitats Directive (1992) for protection within SPAs. Reefs can be either biogenic concretions or of geogenic origin. Geogenic reefs are hard compact substrata on solid and soft bottoms, which arise from the sea floor in the sublittoral and littoral zone. Reefs may support a zonation of benthic communities of algae and animal species as well as concretions and corallogenic concretions.

Biogenic reefs can be identified as solid, massive structures which are created by accumulations of organisms, usually rising from the seabed, or at least clearly forming a substantial, discrete community or habitat which is very different from the surrounding seabed. The structure of the reef may be composed almost entirely of the reef building organism and its tubes or shells, or it may to some degree be composed of sediments, stones and shells bound together by the organisms.

Geogenic reefs can be identified where animal and plant communities develop on rock or stable boulders and cobbles. Geogenic reefs are extremely variable, both in structure and in the communities they support. Reefs are characterised by communities of attached algae (where there is sufficient light – on the shore and in the shallow subtidal) and invertebrates, usually associated with a range of mobile animals, including invertebrates and fish. The specific communities that occur vary according to a number of factors. For example, rock type is important, with particularly distinct communities associated with chalk and limestone. There may be further variety associated with topographical features such as vertical rock walls, gully and canyon systems, outcrops from sediment, and rockpools on the shore.

1.3.3. H1110 – Permanently Flooded Sandbanks

Sandbanks which are slightly covered with seawater all the time (H1110) are listed under Annex I of the EU Habitats Directive (1992). The habitat consists of sublittoral sandbanks that are permanently submerged by shallow sea water, typically at depths less than 20m below chart datum. The habitat comprises distinct banks which may arise from horizontal or sloping plains of sandy sediment.

The diversity and types of community associated with this habitat are determined particularly by sediment type together with a variety of other physical, chemical and hydrographic factors. Shallow sandy sediments are typically colonised by a burrowing fauna of worms, crustaceans, bivalve molluscs and echinoderms. Mobile epifauna at the surface of the sandbank may include shrimps, gastropod molluscs, crabs and fish. Sand-eels *Ammodyte*s spp., an important food for birds, live in sandy sediments. Where coarse stable material, such as shells, stones or maerl is present on the sediment surface, species of foliose seaweeds, hydroids, bryozoans and ascidians may form distinctive communities. Shallow sandy sediments are often important nursery areas for fish, and feeding grounds for seabirds (especially puffins *Fratercula arctica*, guillemots *Uria aalge* and razorbills *Alca torda*) and sea-duck (e.g. common scoter *Melanitta nigra*).

1.3.4. Flat oyster, *Ostrea edulis*

The flat oyster, *Ostrea edulis*, is listed on the OSPAR (2008) list of threatened and/or declining species and habitats. *O. edulis* is a sessile, filter-feeding bivalve, associated with highly productive estuarine and shallow coastal water habitats. *O. edulis* was nominated for inclusion on the OSPAR list with particular reference to global/regional importance, rarity, decline, role as a keystone species, sensitivity and threat, and as a priority for OSPAR Region II and *O. edulis* beds have been nominated as a habitat.

2. Data Acquisition

2.1. Drop-Down Video

DDV was undertaken with a high definition optical camera system. All imagery was collected using Ocean Ecology's SubC PLE subsea camera system providing 1080p High Definition (HD) video and 20 Megapixel (MP) stills imagery. Due to turbidity, the camera was mounted in a Clear Liquid Optical Chamber (CLOC) filled with fresh water to ensure imagery of suitable quality was obtained. Lighting from 2 LED strip lamps and 2 lasers separated by 10 cm were projected into the field of view for illumination and scaling. Positioning was determined by an ultra-short base line (USBL) positioning beacon attached to the camera frame.

Along each camera transect, photographs were taken at least every 10 m and more often when features of interest were encountered. On-board marine ecologists reviewed all video in situ and the DDV was deployed as follows:

- The vessel approached the target location, and the deck personnel were alerted to prepare lifting equipment, camera, and umbilical when on position;
- A test image was taken on the surface prior to deployment at each station to check that the lasers and camera were working correctly;
- The camera was raised using the moon pool A-frame and lowered into the water column to within 2 m of the seabed;
- A shackle system was used to keep the umbilical close to the winch wire. This reduced strain on the umbilical from the tide or vessel movement and prevented excess umbilical being deployed;
- Video recording was then started, and the camera lowered until gently landing on the seabed at which point a positional fix was taken;
- The camera was then kept on the seabed to wait for any suspended sediments in the field of view to disperse before a still image was taken;
- The camera was moved along the transect at a set speed of 0.3-0.5 knots. Where possible the seabed was kept in view throughout;
- Following the capture of the final image, the camera was lifted, video recording was stopped, and the camera was retrieved to the surface;
- The winch operator then took the tension on the wire and the deck crew ensured the camera umbilical was free for recovery;
- The vessel skipper then confirmed sea conditions were suitable for retrieval and the camera system was recovered aboard;
- The camera frame was then lowered onto the deck and the tension released.

2.2. Grab Sampling

A dual (2 x 0.1 m^2) Van Veen (DVV) grab was deployed at each station using the following protocols:

- Vessel approached target location, bridge alerted deck personnel to prepare grab;
- Sea fastening on grab was released to allow deployment from the stern A-frame;

- Winch operator engaged grab system on arrival at target location;
- Vessel skipper confirmed sea conditions were suitable for deployment;
- Grab was deployed safely using the hydraulic winch and stern A-frame;
- When grab landed on bottom, a fix was taken and grab was retrieved to the water surface;
- When the grab reached the surface, the vessel was positioned to reduce pitch and roll;
- The grab was retrieved safely onto the stand and sample was released into a hopper.

Data taken from each station included the position, fix number and water depth.

To ensure consistency in sampling, grab samples were considered unacceptable if:

- Jaws had jammed open due to a large stone or shell allowing sediment washout;
- Small samples were obtained where the grab had not struck a flat area of bottom, or not hit true, causing a side or half bite of sediment;
- The grab was less than 50 % full or contained less than 5 litres;
- The presence of a hag fish (*Myxine glutinosa*) and/or mucous coagulants;
- There was obvious contamination of the sample from equipment, paint chips etc;
- A sample was collected more than 50 m from the target location;
- Under no circumstances was pooling of samples undertaken.

Samples with a volume less than 5 litres were rejected and sampling at the location was reattempted. If continued attempts also failed to collect a valid sample, then the station was repositioned 50 m away.

A detailed log was compiled for each sample station including:

- Number and type of sample;
- Date and time of sampling;
- Volume of sample achieved;
- Photograph number of sample;
- Water depth (in meters);
- Co-ordinates of samples;
- Sample sediment description.

3. Data Processing and Analysis

3.1. Drop-Down Video

Video footage and stills photographs were successfully acquired along all 18 proposed DDV transects. Transect ENV28 was stopped mid transect due to various technical issues and was restarted (referred to in the logs as ENV28 (2)). Stills and video footage were analysed by qualified Marine Ecologists. At each transect, each photograph was assigned a brief sediment description and analysed for macrofauna, where possible, to species level and recorded for presence/absence. Percentage cover was determined for hydroid/bryozoan turf and Porifera.

A total of 540 DDV stills were captured, however positional information was not obtained at 11 images and were therefore omitted from analysis. In addition to the seabed photographs taken across the 18 transects, video footage was reviewed and snapshots were captured whenever features of potential interest occurred. This resulted in 25 video snapshots, which were subsequently analysed.

A selection of seabed photographs is presented in Appendix B, whilst positional logs for all DDV stills are in Appendix A along with the video logs.

3.2. Grab Sampling

The DVV enabled 2 samples of undisturbed surface sediment to be retrieved simultaneously. 3 replicates (A, B, and C) of hydrocarbons and 2 replicates (A and B) were collected for particle size analysis (PSA) and metals from 1 sample whilst 3 replicates (A, B, and C) of macrofauna were retained from a further 3 samples after being passed through a 0.5 mm sieve.

Detailed descriptions were made of each grab in the field notes and digital photographs were taken of all samples accompanied by a USBL derived fix. Visual descriptions of sediment were made (using the Folk classification categories) at the time of sampling, together with estimates of sample volume (as a measure of sampler efficiency).

Initial processing of sediment samples was undertaken in line with the following methodology:

- Assessment of sample size(s) and acceptability made;
- Photographs of the unreleased samples with station details and scale bar taken;
- 3 replicates (A, B and C) for hydrocarbons and organics (total organic carbon (TOC) and total organic matter (TOM)) analysis were collected using a metal scoop to a nominal depth of 2 cm and placed in a glass sample pot;
- 2 replicates (A and B) for heavy metal analysis were collected using a plastic scoop to a nominal depth of 2 cm and placed in a plastic sample pot;
- 2 replicates (A and B) for PSA were collected;
- Prior to any sub-sampling all sample pots were inspected for contamination and scoops cleaned using acetone.;
- Samples were then frozen and stored at approximately -18°C;

- All physico-chemical samples remained frozen during transport and further storage until analysed;
- Remaining DVV sample (macrofauna A) was then released into a container and photographed;
- Sample emptied onto 0.5 mm sieve net laid over 4mm sieve table and washed through using gentle rinsing with seawater hose;
- Residual sieve contents photographed and described;
- Remaining sample for sorting and identification backwashed into a suitably sized sample container using seawater and diluted 10% formalin solution, and then subsequently diluted with seawater to approximately 4-6%, to fix sample prior to laboratory analysis;
- Sample containers clearly labelled internally and externally with date, sample ID and project name;
- Second deployment conducted to collect a further 2 replicates of macrofauna (B and C)

A full suite of samples were collected from a total of 55 sampling attempts, across all stations within the N05a-Riffgat OWF cable route. All sampled stations, except those for ENV44, were collected within 10 m of the target location. Grab Station ENV44 was obtained at 12.3 m from the target location. Following multiple failed attempts grab stations ENV20, ENV37 and ENV42 were moved 50 m from the initial target.

3.3. Habitat Analysis

3.3.1. Stony Reef Assessment

Characterisation of non-biogenic reefs is the presence of stable hard substrate in the form of large boulders and/or a coarse gravel fraction. There may be a mosaic of a (coarse) sediment types in which different sediment types alternate in appearance: places with gravel boulders alternating with coarse sand.

Under the Dutch MANFQ **(2014a)** habitat profile, the area of interest must meet the minimum area requirement of 100 m^2. The size may relate to more than one location, provided these locations are functionally related and the mutual distance is no more than 20 m. If an area meets this requirement, the limiting criteria, which partly determines the quality of the habitat type, are the substrate size (>64 mm) and the presence of sessile organisms that dependent on that hard substrate **(**

Table **3.1**). Small stones and gravel are only added to the habitat type if sessile organisms live on it. However, it is necessary that these places are part of an area with stones larger than 64 mm**.**

Table 3.1: Stony reef habitat quality (MANFQ, 2014a)

Good/Mediocre	Restrictive Criteria	Only in mosaic
Good	Area covered with hard compact substrates (whether or not with a thin mobile layer of sediment), where organisms that live on these substrates are dependent.	
Mediocre	Area covered with hard compact substrates at least 64 mm average, without a thin layer of sediment and without organisms depended on hard compact substrates.	
Mediocre	Area covered with hard compact substrates	Only in mosaic with independent qualifying components from H1170.

Other habitat quality characteristics include typical species associated with non-biogenic reefs, see Table 3.2 . Other characteristics of good structure and function include low dynamics, good water quality, biotic structuring elements, very high biodiversity and natural build-up community.

Table 3.2: Typical species associated with reef habitat type (H1170; MANFQ, 2014a)

Scientific Name	Species Group	Category
Lithothamnion sonderic	Red Algae	K
Alcyonium digitatum	Soft Coral	Cab
Sabellaria spinulosa	Bristle Worm	K + Ca
Chane duneri	Bristle Worm	K
Galathea intermedia	Crustaceans	E
Arcopagia crassa	Mollusc	Cab
Buccinium undate	Mollusc	Cab
Dosinia exoleta	Mollusc	Cab
Pododesmus patelliformis	Mollusc	K + ca

Scientific Name	Species Group	Category
Micrenophrys lilljeborgic	Fish	E
Diplecogaster bimaculata	Fish	E
Haliclona oculata	Sponge	Cab
Aporrhais pespelecani	Mollusc	Cab
Simnia patula	Mollusc	Cab
Lophius piscatorius	Fish	Cab
Aequipecten opercularis	Mollusc	Cab
Urticina sp .	Anemone	Cab

1 Ca = constant species with indication of good abiotic status, Cb = constant species with indication for food biotic structure, Cab = constant species with indication of good abiotic status and good biotic structure, K = characteristic species, E = exclusive species.

3.3.2. H1110_C - Sandbank Assessment

Habitat type H1110 permanently flooded sandbanks is defined at landscape level based on shapes of the earth's surface and the flow of salt water. It concerns sandbanks in shallow parts of the sea that is constantly under water, with water rarely more than 20 m deep.

The Dutch government has subdivided the H1110 Habitat into three subtypes; H1110_A_Wadden Sea, H1110_B North Sea and H1110_C Offshore (MANFQ, 2014b). Habitat H1110_C has the most relevance to the N05a-Riffgat Cable route, representing permanently flooded sandbanks in water depths up to 40 m. Subtype C is defined by the change in inclination angle (>0.5°) from the sandbank to the surrounding plain. The limiting criteria, as defined by MANFQ (2014b), which partly determine the quality of the habitat type, are the depth of the water above the sandbar and the substrate size. Characteristics species is another factor which partly determines the quality of the habitat type (Table 3.3).

Table 3.3: Typical species associated with sandbank habitat type H1110_C (MANFQ, 2014b)

Scientific Name	Species Group	Category[1]
Alcyonium digitatum	Soft Coral	K + Ca
Lanice conchilega	Bristle Worm	Cab
Sigalion mathildae	Bristle Worm	Ca
Aphrodita aculeata	Bristle Worm	K + Ca

Scientific Name	Species Group	Category[1]
Goniada maculata	Bristle Worm	Ca
Magelona papillicomis	Bristle Worm	Ca
Nephtys cirrosa	Bristle Worm	Ca
Nephtys hombergii	Bristle Worm	Ca
Spiophanes bombyx	Bristle Worm	Cab
Bathyporeia elegans	Crustacean	Cab
Bathyporeia guilliamsoniana	Crustacean	Ca
Corystes cassivelaunus	Crustacean	Cab
Liocarcinus holsatus	Crustacean	Ca
Urothoe poseidonis	Crustacean	Ca
Pagurus bernhardus	Crustacean	Ca
Acrocnida brachiata	Echinoderm	E
Astropecten irregularis	Echinoderm	Ca
Echinocyamus pusillus	Echinoderm	Ca
Luidia sarsii	Echinoderm	K + Ca
Ophiothrix fragilis	Echinoderm	K + Ca
Ophiura ophiura	Echinoderm	Ca
Amoglossus latema	Fish	Ca
Buglossidium luteum	Fish	Ca
Callionymus lyra	Fish	Ca
Eutrigla gumardus	Fish	Ca
Gadus morhua	Fish	Ca
Limanda limanda	Fish	Ca
Merlangius merlangus	Fish	Ca
Microstomus kitt	Fish	Ca
Pleuronectes platessa	Fish	Ca
Fabulina fabula	Mollusc	Cab
Arctica islandica	Mollusc	Ca
Buccinum undatum	Mollusc	K + Cab
Ensis ensis	Mollusc	Cab

Scientific Name	Species Group	Category[1]
Euspira nitida	Mollusc	Cab
Gari fervensis	Mollusc	Cab
Kurtiella bidentata	Mollusc	Cab
Neptunea antiqua	Mollusc	K + Cab

1 Ca = constant species with indication of good abiotic status, Cb = constant species with indication for food biotic structure, Cab = constant species with indication of good abiotic status and good biotic structure, K = characteristic species, E = exclusive species.

3.4. EUNIS Habitat Classification Assessment

Habitat classification which takes into account both abiotic and biotic features is a relatively new development. The need for a habitat classification system has several driving forces; establishment of habitat protection, inventory of habitats in a biogeographic region country or site; monitoring and reporting description of species' habitat requirements.

To meet the need for a habitat classification, EUNIS was developed between 1996 and 2001 by the European Environment Agency (EEA) in collaboration with European experts. The EUNIS habitat classification is a comprehensive system covering the terrestrial and marine habitat types of the European land mass and its surrounding seas. It is hierarchical in structure and includes a key with criteria for identification of habitats at the first three levels (Table 3.4).

Table 3.4: EUNIS hierarchical structure example

Level	Level Description	Hierarchical Example (EUNIS code)
1	Distinguishes between 'Marine' and terrestrial coastal habitats	Marine (A)
2	Habitats selected based on substrate type and biological zone	Sublittoral sediment (A5)
3	Sediment habitats are subdivided based on broad sediment type.	Sublittoral coarse sediment (A5.1)
4	Sublittoral sediment habitats are subdivided by salinity and more specific biological zone.	Infralittoral coarse sediment (A5.13)
5	At this level biotopes are defined based on their characterising species	Dense *Lanice conchilega* and other polychaetes in tide-swept infralittoral sand and mixed gravelly sand (A5.137)

EUNIS benthic biotopes can be assigned using analysed faunal and physical data. Within this report, available data for EUNIS assessment includes geophysical data, epifauna and sediment observations from DDV and grab samples.

4. Survey Results

4.1. Geophysical Survey

The following bathymetry and seabed features information is summarised from the N05a-Riffgat OWF cable route geophysical report by GEOxyz (2021c). Data acquired from the current survey has been supplemented by previous survey data acquired in 2019.

The 2021 geophysical survey comprised 45 main lines, orientated 76°/ 256° with a 50 m spacing and lengths varying between 69 m and 4.2 km and 4 cross lines, orientated 166°/ 346° with a 1 km spacing and lengths varying between 1.3 km and 2.0 km. These infilled a gap in the 2019 survey area to the east of the N05a platform survey area and also extend the cable route survey area further south.

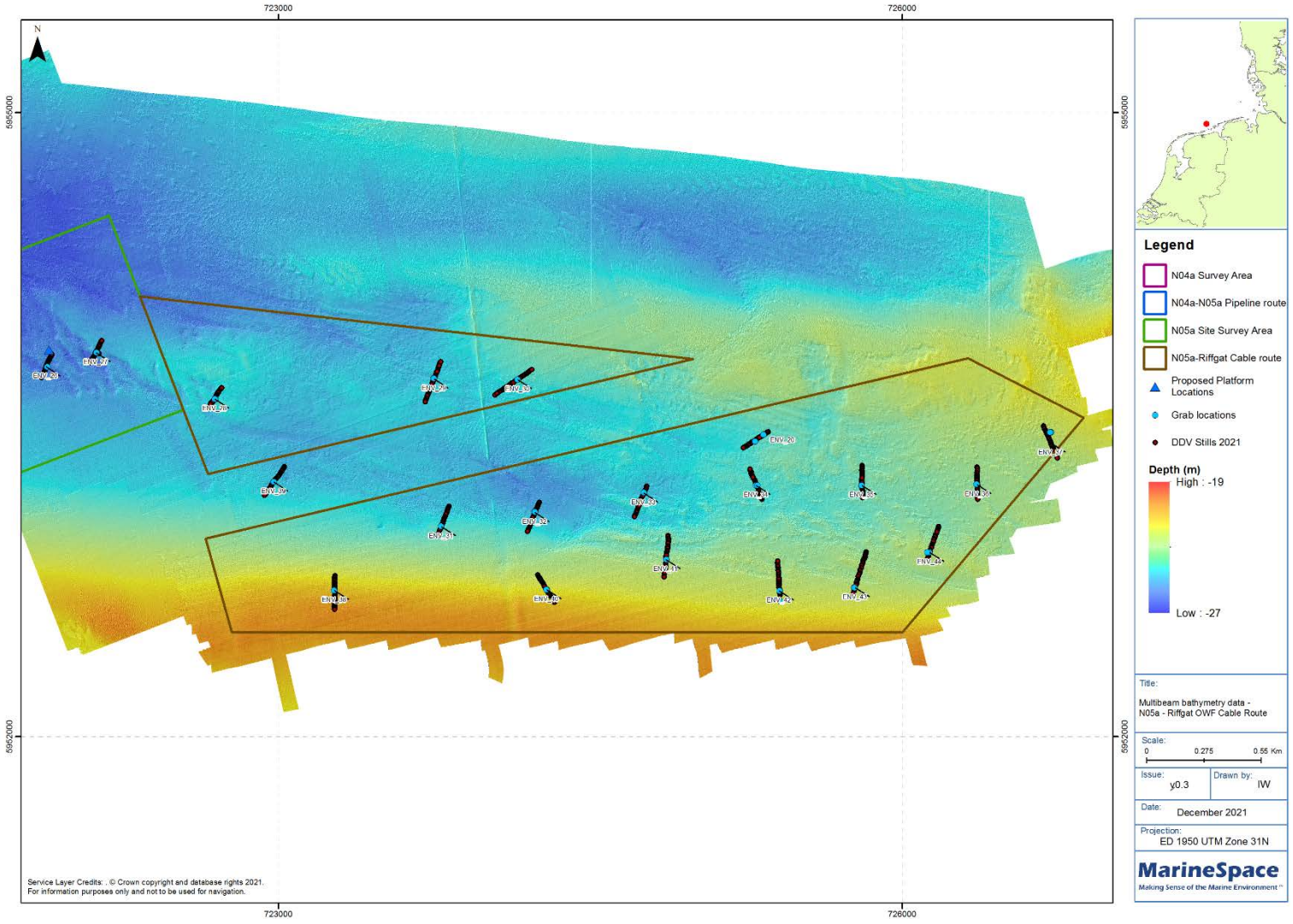
4.1.1. Bathymetry

Bathymetry within the charted N05a-Riffgat OWF cable route is shown in Figure 4.1. Water depths generally shoaled towards the south and east of the charted area, with water depths ranging from 18.7 m LAT towards the eastern end and 26.6 m LAT in the west.

A series of natural minor troughs, predominantly trending north-west to south-east, occurred where the acquired data narrows within the Riffgat OWF area. These were interpreted to be related to tidal/current processes. Natural gradients within the charted area are generally less than 1 . Maximum gradients of up to 7 were confined to the flanks of the more prominent troughs.

Three semi-circular features with 1 m of positive relief, interpreted as being related to previous drilling activity, were imaged in the bathymetry data. They were positioned within a 45 m radius around 721725 m E 5954566 m N and have average dimensions of 30 m x 20 m. The position of the Norned cable was confirmed by MBES data. The cable crosses through the centre of the main body of acquired data in a north/south orientation.

Figure 4.1: Bathymetry across the N05A-Riffgat OWF cable route



4.1.2. Seabed Features

Interpretation of seabed features, sediment and seabed contacts from the current and 2019 SSS data is presented in Appendix C.

Seabed sediments were interpreted within the charted area as fine sand with shell fragments, coarse sand with shell fragments, coarse sand and clay and coarse sand with a high density of sand mason worms and razor clams (*Ensis* sp.). The coarse sand with shell fragments was generally seen in the narrow corridor of data in the east, around the Riffgat OWF, while the main body of the survey area was split between find sand with shell fragments and coarse sand clay with coarse sand and clay generally correlating with the bathymetric highs, with the exception of an area of find sand in the north.

Numerous SSS contacts were identified within the charted area, with the majority interpreted as boulders within the charted area. Most of these contacts were identified within the areas where seabed sediments were interpreted as coarse sand and clay although occasional contacts were seen outside these areas.

Several contacts were interpreted as potential debris based on their shape/appearance on SSS records. The largest of these features is a contact seen in 2019 and 2021 located at 723483.2 m E 5953002.0 m N, measuring 7.9 m x 3.9 m x 0.7 m and interpreted previously as a possible wreck. This feature also has a corresponding magnetic anomaly of 874 nT from the 2021 survey. Two items of linear debris were also interpreted within the chart area. The most significant occurred at 721739.2 m E 5954023.0 m N and measured 22 m in length and was interpreted as an abandoned wire / cable. Three semi-circular features with 1 m of positive relief note in Section 4.1.1, were interpreted as being related to previous drilling activity.

Numerous magnetic contacts were detected within the charted area. Several magnetic anomalies were clustered around the position of the three semi-circular features with 1 m of positive relief noted above and interpreted as being related to previous drilling activity. Several magnetic contacts were aligned, trending north/south and were associated with the existing Norned cable. Other examples of magnetic contacts being aligned which did not correspond with the positions of known infrastructure/linear targets were observed on the SSS data and could indicate buried linear debris/unknown cables.

4.1.3. Shallow Geology

In this report, shallow geology refers to geology that is 0 - 50 m below the seabed.

Interpretation of the shallow soils was based upon sub-bottom profiler dataset in conjunction with borehole and vibrocore data. Pinger data examples illustrating shallow soils within the cable route area are presented in Figure 4.2 and Figure 4.3.

Based on vibrocore data the upper unit was expected to comprise fine to medium grained sand. This unit generally thickened to the south and east of the charted area. This correlated with the areas where seabed sediments were interpreted to comprise fine or coarse sand with shell fragments. The unit showed a maximum thickness of 3 m within the charted area.

The upper unit was either absent or so thin it was beyond the resolution of the pinger data set through a large part of the western half of the surveyed area and here clay with layers of sand and silt was expected, interpreted to be the infill of a broad channel (Figure 4.3).

In the east where the upper unit was present based on vibrocore data it was expected to be subcropped by fine sand.

Figure 4.2: Sub-bottom profiler data example for Line CBL_12 (GEOxyz, 2021c)

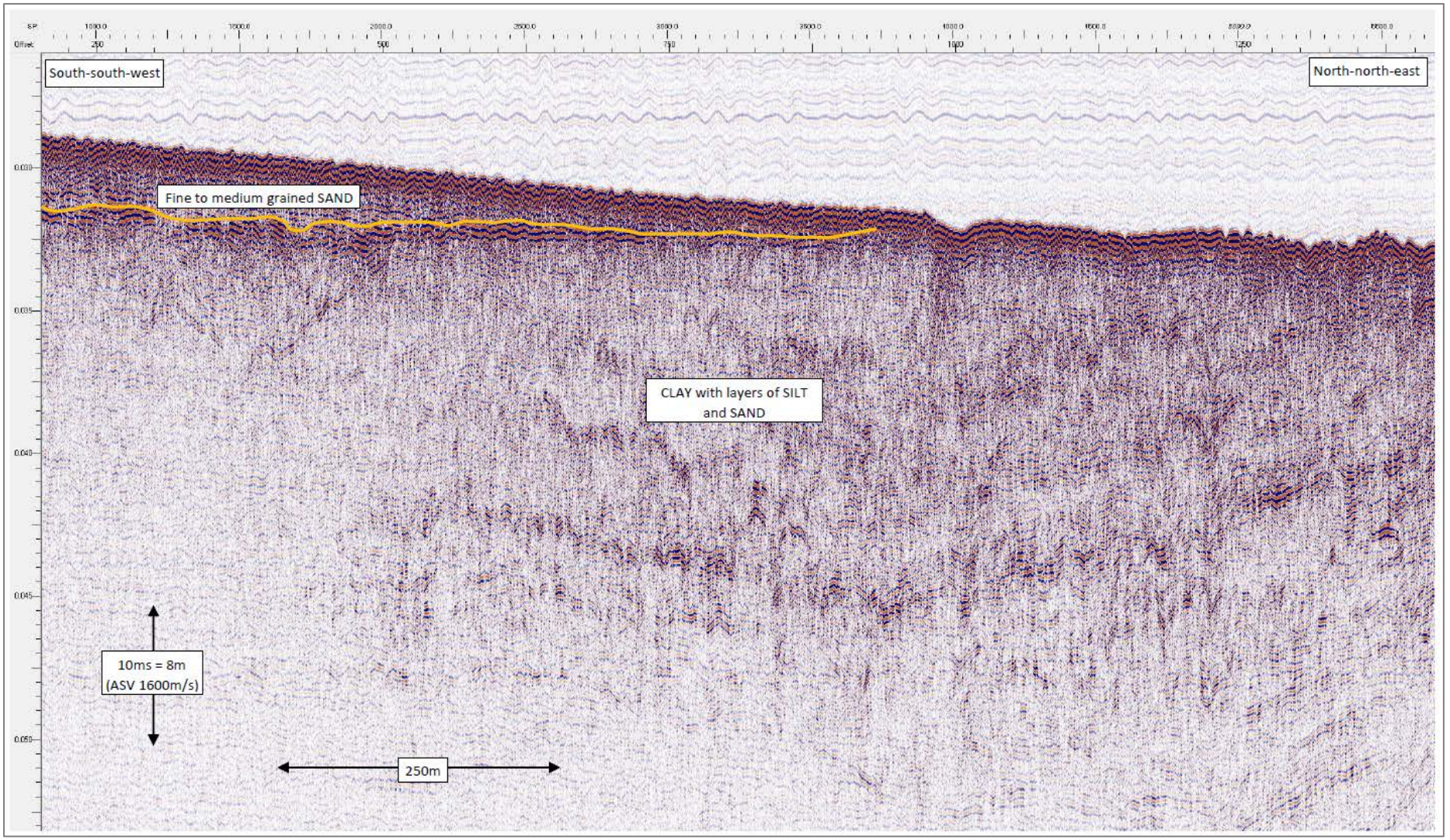
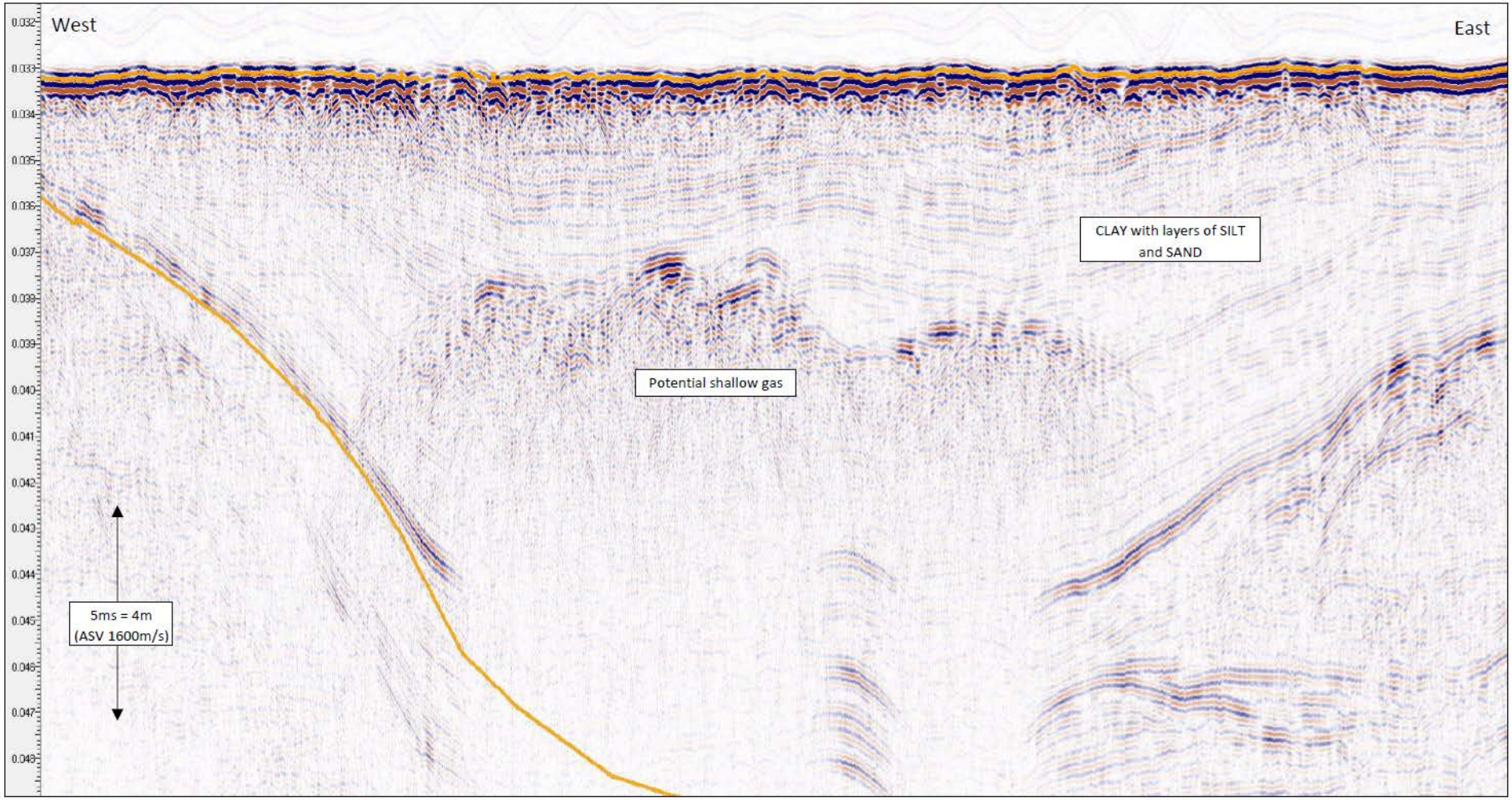


Figure 4.3: Sub-bottom profiler data example for Line CW_6_PROC (Igeotest, 2019)



4.2. Habitat Assessment

4.2.1. Seabed Imagery Observations

Seabed imagery ground truthed the areas interpreted by the SSS data as 'fine sand with shell fragments' and 'coarse sand and clay'. Areas interpreted by the SSS data as 'coarse sand with shell fragments' and 'coarse sand with a high density of sand mason worms and razor clams (Ensis sp.)' were ground truthed in the 2019 HAB (GEOxyz, 2019) and are therefore not discussed below.

Sediments were confirmed to comprise rippled finer sand along the south of the N05a-Riffgat OWF cable route within the area described by the SSS data as 'fine sand with shell fragments'. A mixture of rippled coarse sand with scattered cobbles and boulders were observed in the area described as 'coarse sand and clay'.

Visible fauna identified within the N05a-Riffgat OWF cable route, identified to the lowest possible taxon, are listed in Appendix D and included:

- Annelida (*Lanice conchilega*);
- Arthropoda (Atelecyclidae, *Cancer pagurus*, Caridea, Decapoda, *Homarus gammarus*, *Liocarcinus* sp., Majidae, Paguroidea, Portunidae);
- Chordata (Actinopterygii, *Agonus cataphractus, Limanda limanda*, Lotidae, *Pholis gunnellus*, Pleuronectiformes);
- Cnidaria (Actiniaria, *Alcyonium digitatum*, Anthozoa, Cerianthidae, *Cylista sp.*, Hydrozoa, *Metridium dianthus*, Pennatulacea, Plumulariidae,);
- Echinodermata (*Asterias rubens*, Asteroidea, *Astropecten irregularis*, *Ophiura albida*, *cf. Ophiura ophiura*, Ophiuroidea);
- Mollusca (*Ensis* sp., bivalve siphons);
- Porifera including *cf*. *Halichondria* (*Halichondria*) *panicea;*
- Indeterminate Animalia, tube and turf.

Review of video footage revealed 1 additional taxa, *Callionymus lyra* , within N05a-Riffgat OWF cable route, which was recorded at Transect ENV41.

The most frequently observed taxa within the images was the sand mason worm *L. conchilega* (65%) followed by burrowing anemone *Cylista sp.* (48%) and brittle star *cf. O. ophiura (*42%).

Fauna observed in the areas identified as 'fine sand with shell fragments' and 'coarse sand and clay' did not differ greatly. Within both sediment types *L. conchilega*, *cf. O. ophiura* and *Cylista sp.* were the most frequently observed taxa. Although, 41% more taxa was recorded within the sediment 'coarse sand and clay' compared to 'fine sand with shell fragments', both recorded 0.1 taxa per image.

In areas were cobbles and/or boulders were present, *Cylista sp.* was the most frequently observed taxa (59%), followed by plumose anemone *M. dianthus* (48%), Porifera (42%) and *L. conchilega* (23%). On average 0.3 taxa were observed per image in areas with cobbles and/or boulders compared to only 0.06 taxa per image in areas were cobbles and boulders were absent.

A. digitatum was observed growing on cobbles along Transect ENV33. *A. digitatum* was the only typical species of Reef (H1170) habitat observed within the seabed imagery and is considered a constant species with indication for good abiotic structure.

The following species were observed from the DDV and are considered typical species of H1110_C permanently flooded sandbanks: *A. digitatum, A. irregularis, C. lyra*, *L. conchilega, L. limanda, O. ophiura*. A minimum of 1 typical species (*L. conchilega*) was observed along every transect and a maximum of 4 was recorded along Transect ENV37. All observed typical species are considered constant species with indication of good abiotic status. In addition, *A. digitatum* is considered a characteristic species and *L. conchilega* a constant species indicating good biotic structure.

The cobbles and boulders presented a hard substrate on which Porifera can grow and potentially form deep-sea sponge aggregation, which are classified as threatened and/or declining habitat (OSPAR, 2008). Only 3 sponge species were identified at Transects ENV20, ENV25, ENV29-30, ENV33-34, ENV39 and ENV43. However, Porifera was only recorded in 20 images with percentage cover limited to below 15%. Porifera is therefore considered rare across the N05a-Riffgat OWF cable route area.

Only 1 individual of Pennatulacea was observed within the N05a-Riffgat OWF cable route area. Consequently, there is little resemblance to sea pens and burrowing megafauna in circalittoral fine mud, which is listed as a threatened and/or declining habitat (OSPAR, 2008).

A selection of seabed images, together with descriptions and positions are presented in Appendix B. Also, a summary table of faunal presence and absence is presented in Appendix D and example photographs of the taxa observed is provided in Appendix E.

4.2.2. Seabed Sampling Observations

Grab samples, which were largely collected from seabed of ‘coarse sand and clay’ as interpreted from the SSS, was described as ranging from sandy mud to gravelly muddy sand (Folk, 1954). In contrast, grab samples retrieved from seabed of ‘fine sand with shell fragments’ as interpreted from the SSS, were described as either sandy mud or sand (Folk, 1954).

Typical species found within the grab samples included but were not limited to Bivalvia, Caridea, *Cylista sp.*, Crustacea, *Lanice conchilega* and Ophiouroidea, *Ophiura ophiura*, Pectinariidae, Polychaeta, Spatangoida.

4.2.3. Stony Reef Assessment

Substrate larger than 64 mm (cobbles and boulders) was observed from seabed imagery at 12 stations (ENV20, ENV28-30, ENV33-35, ENV37, ENV39, ENV41, ENV43-44). Cobbles and boulders were generally associated with epifauna, most frequently *Metridium dianthus*. Cobbles and boulders were observed rarely amongst most stations, except for Stations ENV29, ENV33, ENV20 and ENV30 were they were observed in 42%, 37%, 28% and 26% of the DDV imagery, respectively. Although maximum percentage cover of cobbles and/or boulders was 75% at Station ENV29, 70% at ENV33 and 20% at station ENV20 and ENV30, average % cover across all images was lower than 15% (see Figure 4.4).

Cobble and boulder areas were plotted using geographical information system (GIS) software, which revealed that substrates larger than 64 mm did not cover an area of 100 m^2 or more along any transect.

There was no obvious topographic difference in the SSS mosaic in areas where cobbles and boulders were observed. However, observed areas of cobbles and boulders were limited to the 'coarse sand and clay' sediment boundary (Figure 4.4 and Figure 4.5). Therefore, patches of cobbles and boulders are expected to be found across this area. This is consistent with the geophysical data which interpreted boulders to occur across this sediment boundary in high densities (see Section 4-1). Cobble and/or boulder areas observed from all transects were generally spaced at distances greater than 20 m.

Based on Dutch MANFQ habitat profile (MANFQ, 2014a)**, the stony areas observed and identified from the 2021 DDV data were not functionally related and therefore did not form a habitat type greater than 100 m^2. In addition very few typical species were found in association with the observed hard substrate (see Section 4.2.1). These areas, therefore, could not be defined as Reefs (H1170).**

Figure 4.4: Areas of potential stony reef within N05a-Riffgat OWF cable route, Stations ENV20, ENV28-30, ENV33-34

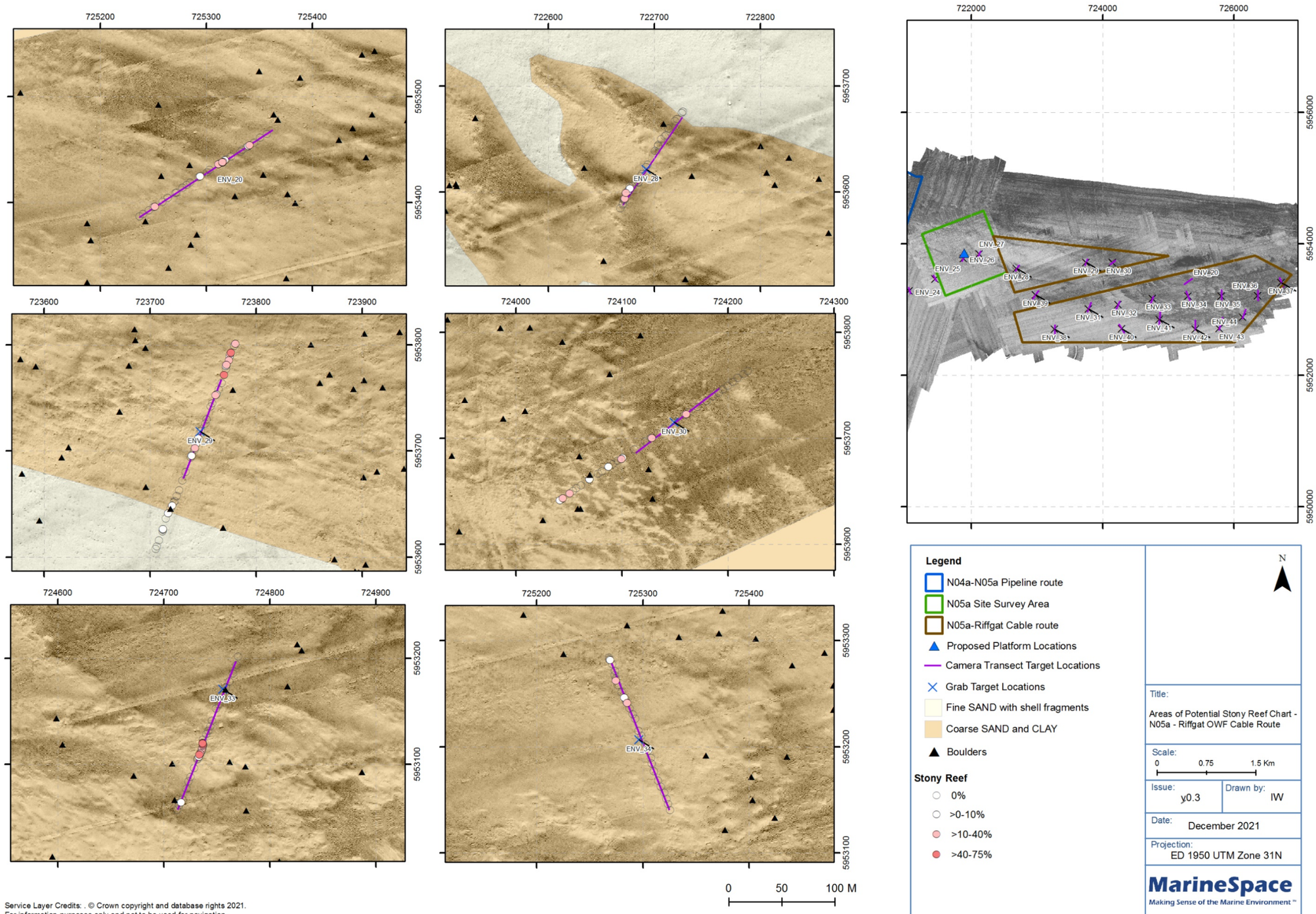
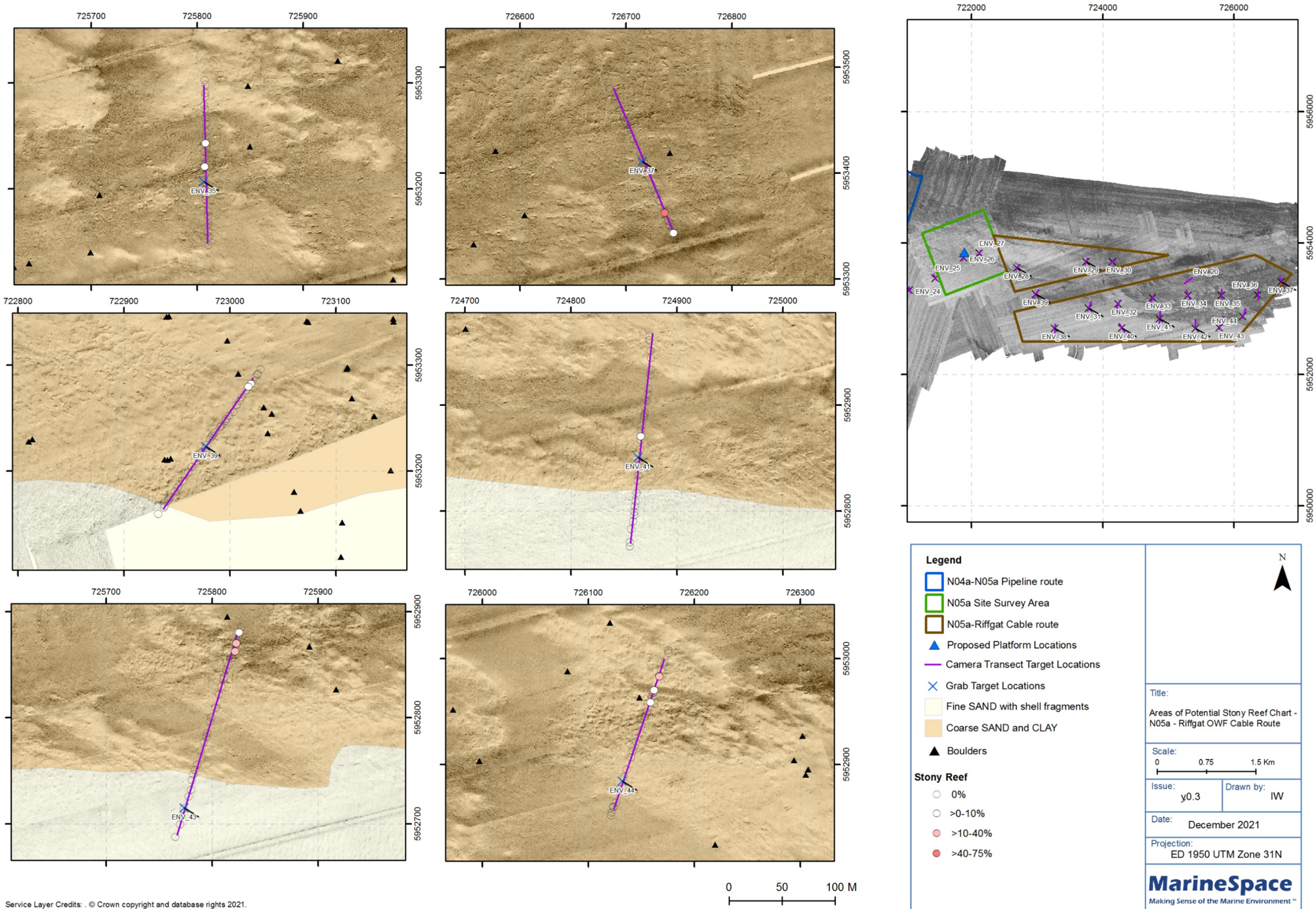


Figure 4.5: Area of potential stony reef within N05a-Riffgat OWF cable route, Stations ENV35, ENV37, ENV39, ENV41, ENV43-44



4.2.4. Sandbank (H1110_C) Assessment

Sediments within the N05a-Riffgat cable route ranged from sandy mud to gravelly muddy sand, however, only 13 stations (ENV20, ENV28-30, ENV33-39, ENV41 and ENV44) were described as containing sufficient sand content to meet the requirements of the H1110_C habitat subtype, which were found across both 'coarse sand and clay' and 'fine sand with shell fragments' sediment boundaries. Depths within and around the N05a-Riffgat cable route ranged from 18.7 m LAT and 26.6 m LAT. Review of the macrofauna revealed the presence of 6 species considered typical of the habitat (see Section 4.2.1).

Although, depth, sediment type and some typical species were characteristic of a sandbank habitat, there were no defined sandbank features identified in this area (see Section 4.1.2). Consequently, this area is unlikely to represent EC Habitats Directive Annex I habitat subtype H1110_C.

4.2.5. EUNIS Habitat Classification

The EUNIS classification hierarchy to biotope level 4 was mainly based on depth and sediment type. Results of the EUNIS habitat classification are based on geophysical data, seabed imagery and grab sediment interpretation are summarised in Table 4.1. EUNIS level 3 habitat boundaries are presented in Figure 4.6 and Figure 4.7.

All habitats observed related to the EUNIS level 1 category marine habitats (EUNIS code A) and level 2 category sublittoral sediment (EUNIS code A5), corresponding to sediment habitats in sublittoral near shore zone extending to 200 m depth.

EUNIS level 3 habitat classification was determined based on geophysical data, seabed imagery and grab interpretation of sediment composition. Sand was the dominant component of the sediment across all targets, therefore all targets were classified either as EUNIS habitat A5.2 sublittoral sand or A5.1 sublittoral coarse sediment. A5.2 sublittoral sand is described by the EEA (2019) as medium to fine sand or non-cohesive slightly muddy sands. A5.1 sublittoral coarse sediment is described by the EEA as coarse sediment including coarse sand, gravel, pebbles, shingles and cobbles, which are often unstable due to tidal currents and/or wave action. Several targets crossed through more than 1 SSS sediment boundary and so have been assigned more than 1 EUNIS habitat category.

Small areas of increased cobbles and occasionally boulders were seen across a number of stations and so were secondarily classified as EUNIS habitat A5.4 sublittoral mixed sediment. It is described by the EEA as comprising heterogenous muddy gravelly sands and/or also mosaics of cobbles and pebbles embedded in or lying upon sand, gravels or muds. Their fauna community constitutes a rich array or both infauna and epibiota including polychaetes, bivalves, echinoderms, anemones, hydroids and Bryozoa.

Across the N05a-Riffgat cable route, the corresponding level 4 habitat classifications were identified:

- EUNIS habitat A5.23 infralittoral fine sand is described as clean sand which occur in shallow water, either on open coast or in tide swept channels or marine inlets. The habitat is typically characterised by robust fauna, particularly amphipods (*Bathyporeia*) and robust polychaetes including *Nepthys cirrosa* and *Lanice conchilega*;

- EUNIS habitat A5.13 infralittoral coarse sediment is described as moderately exposed habitats with coarse sand, gravelly sand, shingle and gravel in the infralittoral, are subject to disturbance by tidal streams and wave action. This habitat is characterised by a robust fauna of infaunal polychaetes such as *Chaetozone setosa* and *Lanice conchilega*, cumacean crustacea such as *Iphinoe trispinosa* and *Diastylis bradyi*, and venerid bivalves;
- EUNIS habitat A5.43 infralittoral mixed sediment is described as shallow mixed sediment in fully marine or near fully marine condition. This habitat 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, including those characterised by bivalves, polychaetes and file shells. This has resulted in many species being described as characteristic of this habitat type all contributing only a small percentage to the overall similarity.

In addition due to the characteristic abundance of *Lanice conchilega*, it was possible to assign the biotope A5.137 dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand to sections of Transects ENV33, ENV35-37, ENV39 and ENV41-44.

Table 4.1 : N05a-Riffgat OWF cable route area EUNIS classification

Station	Depth (m LAT)	Folk (1954) from Grab Observation	EUNIS Habitat Classification
ENV20	24	Gravelly Muddy Sand	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment
ENV28	24 - 26	Muddy Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment
ENV29	24	Sandy Gravelly Mud to Muddy Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment
ENV30	24 - 25	Muddy Gravelly Sand to Muddy Sandy Gravel	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment
ENV31	23 - 24	Sandy Mud	A5.13 Infralittoral Coarse Sediment
			A5.23 Infralittoral Fine Sand
ENV32	22 - 25	Sandy Mud	A5.13 Infralittoral Coarse Sediment
			A5.23 Infralittoral Fine Sand
ENV33	22 - 24	Muddy Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand
			A5.43 Infralittoral Mixed Sediment
ENV34	23 - 24	Muddy Sand	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment
ENV35	23	Sand to Sandy Gravel	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand
ENV36	23	Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand
ENV37	22 - 24	Sand to Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment

Station	Depth (m LAT)	Folk (1954) from Grab Observation	EUNIS Habitat Classification
			A5.137 Dense *Lanice conchilega* and other polychaetes in tides wept infralittoral sand and mixed gravelly sand
ENV38	20 - 25	Sand	A5.23 Infralittoral Fine Sand
ENV39	24	Muddy Sand	A5.13 Infralittoral Coarse Sediment
			A5.43 Infralittoral Mixed Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tides wept infralittoral sand and mixed gravelly sand
ENV40	20 - 23	Sandy Mud	A5.23 Infralittoral Fine Sand
ENV41	22 - 24	Muddy Sand	A5.13 Infralittoral Coarse Sediment
			A5.23 Infralittoral Fine Sand
			A5.137 Dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand
ENV42	22 - 24	Sandy Mud	A5.13 Infralittoral Coarse Sediment
			A5.23 Infralittoral Fine Sand
			A5.137 Dense *Lanice conchilega* and other polychaetes in tides wept infralittoral sand and mixed gravelly sand
ENV43	22 - 23	Sandy Mud	A5.13 Infralittoral Coarse Sediment
			A5.23 Infralittoral Fine Sand
			A5.43 Infralittoral Mixed Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand
ENV44	22 - 23	Sandy Mud to Sand	A5.13 Infralittoral Coarse Sediment
			A5.23 Infralittoral Fine Sand
			A5.43 Infralittoral Mixed Sediment

Figure 4.6: EUNIS Habitats identified within N05a-Riffgat OWF cable route area, Stations ENV20, ENV28 – ENV32, ENV38, ENV39 and ENV40

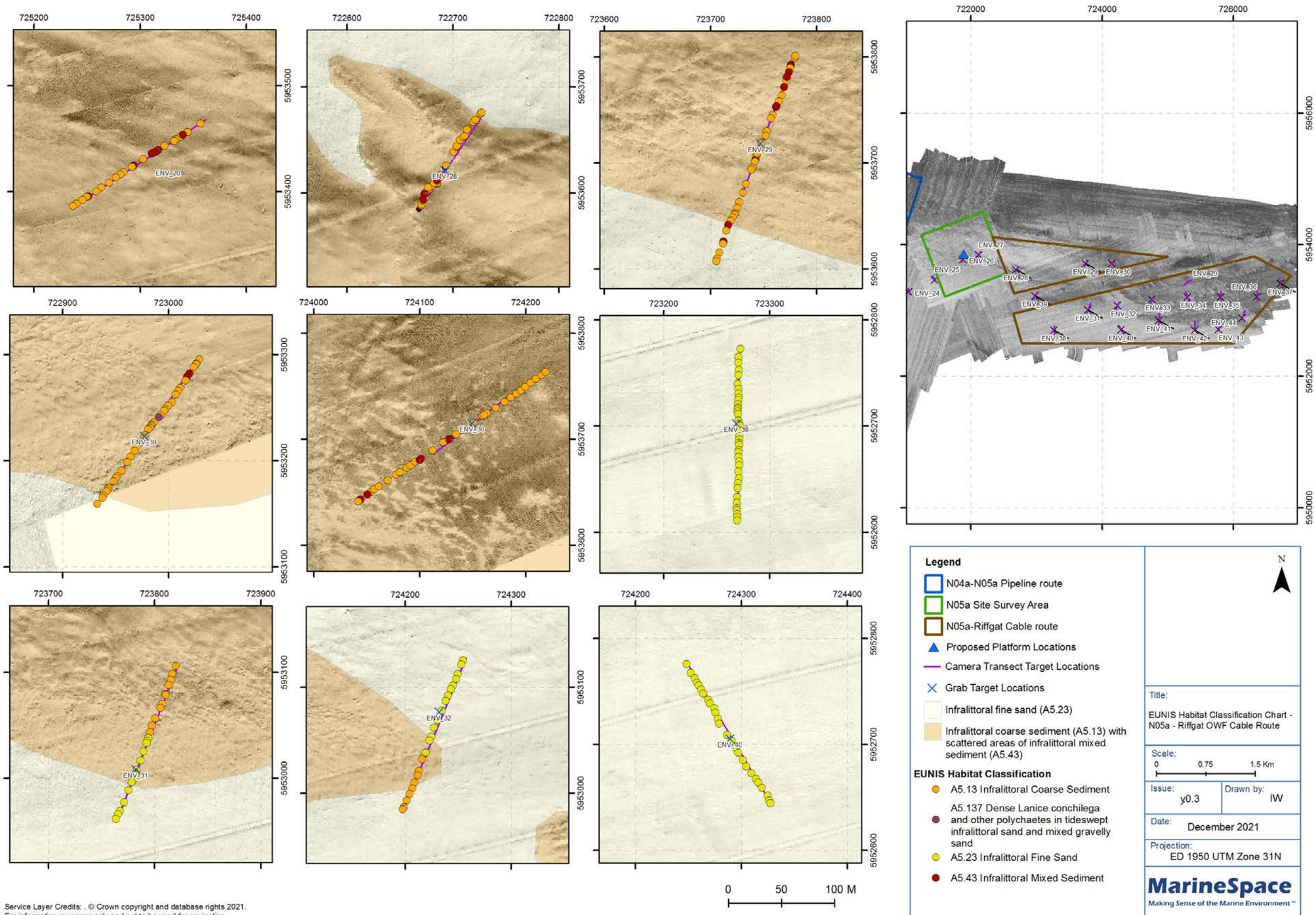
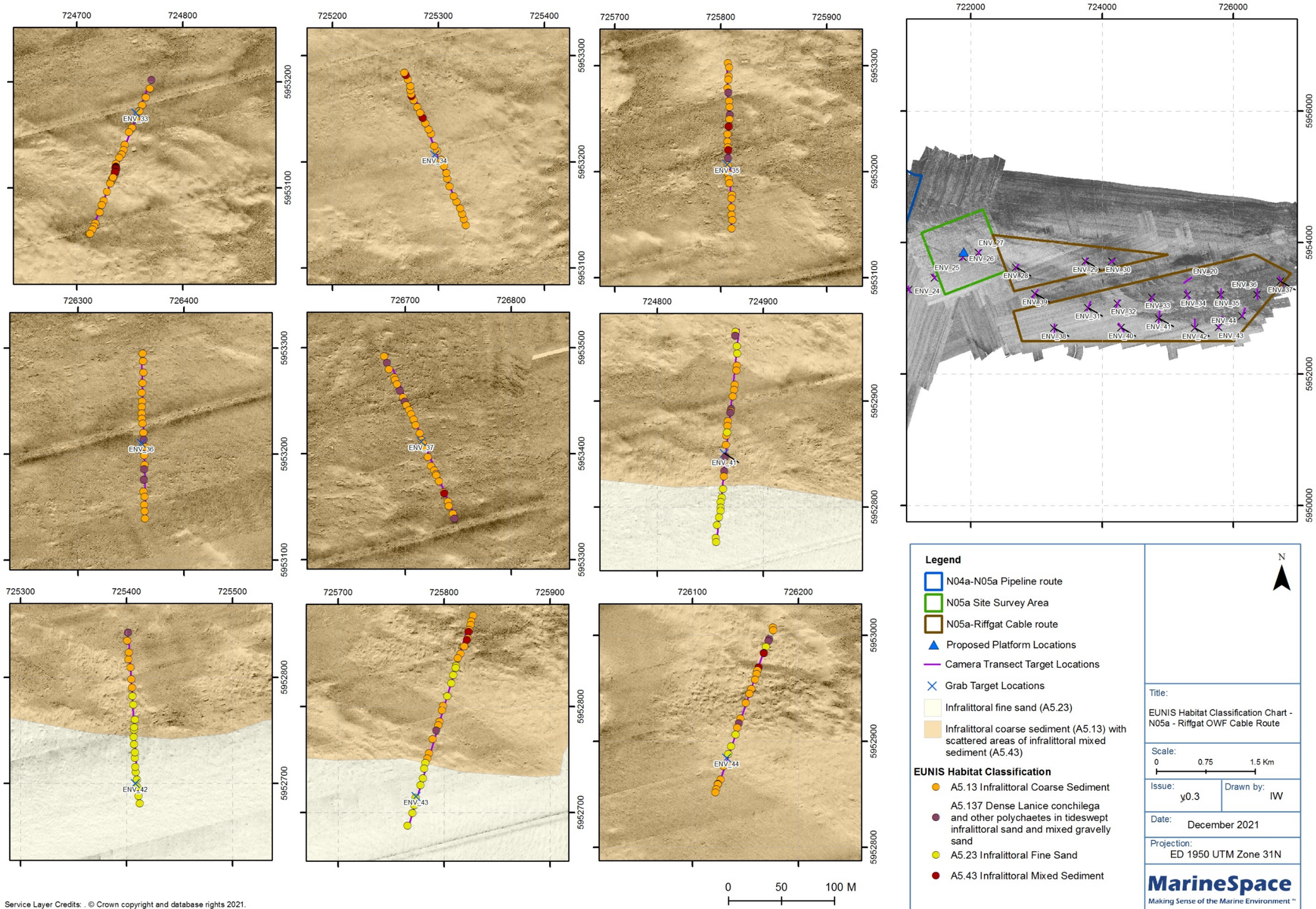


Figure 4.7: EUNIS Habitats identified within N05a-Riffgat OWF cable route area, Stations ENV33 - ENV37 and ENV41 – ENV44



5. Conclusion

Seabed imagery supported the geophysical data of 'fine sand with shell fragments' and 'coarse sand with clay'. EUNIS classification identified 3 x 3 level EUNIS habitats A5.13 infralittoral coarse sediment, A5.23 infralittoral fine sand and A5.43 infralittoral mixed sediment as well as 1 x 4 level EUNIS habitat A5.137 Dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand.

Seabed imagery across the area of 'coarse sand with clay' revealed coarser sediment with areas of cobbles and boulders, which provided a hard surface for *Metridium dianthus* and Porifera to attached. Seabed imagery across the area of 'fine sand with shell fragments' revealed fine sand with sparse fauna.

In accordance with the Dutch guidance the areas of cobbles and boulders identified at stations ENV20, ENV28-30, ENV33-35, ENV37, ENV39, ENV41, ENV43-44 did not constitute a reef habitat (H1170) as the extent of the area was below 100 m^2 and only a few typical species were found.

Although, depth, sediment type and some associated fauna was found present, there were no defined sandbank features identified within the N05a-Riffgat cable route. Consequently, this area is unlikely to represent EC Habitats Directive Annex I habitat subtype H1110_C.

Based on the frequency of Porifera occurrence and percentage cover, they did not represent deep-sea sponge aggregations, classified as a threatened and or declining habitats (OSPAR, 2008).

Only one individual of Pennatulacea was observed within the N05a-Riffgat OWF cable route. Consequently, there is little resemblance to sea pens and burrowing megafauna in circalittoral fine mud, which is listed as a threatened and/or declining habitat (OSPAR, 2008).

Other than those detailed above there was no further evidence of any Annex I habitats, any species or habitats on the OSPAR (2008) list of threatened and/or declining species or any species on the IUCN Global Red List within the N05a-Riffgat OWF cable route.

6. References

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Appendix A. Environmental Field Logs

Appendix A1: Stills positional Logs

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_20	MARDUT1021_ENV_20_2021_11_11_160735.jpg	1189	16:07:58	11/11/2021	-	-	-	-
ENV_20	MARDUT1021_ENV_20_2021_11_11_160832.jpg	1190	16:08:55	11/11/2021	-	-	-	-
ENV_20	MARDUT1021_ENV_20_2021_11_11_160845.jpg	1191	16:09:08	11/11/2021	53.681215	6.412562	725356.950	5953464.520
ENV_20	MARDUT1021_ENV_20_2021_11_11_160914.jpg	1192	16:09:36	11/11/2021	53.681187	6.412461	725350.660	5953461.230
ENV_20	MARDUT1021_ENV_20_2021_11_11_160942.jpg	1193	16:10:04	11/11/2021	53.681147	6.412374	725345.060	5953456.410
ENV_20	MARDUT1021_ENV_20_2021_11_11_161006.jpg	1194	16:10:28	11/11/2021	53.681123	6.412292	725339.650	5953453.100
ENV_20	MARDUT1021_ENV_20_2021_11_11_161015.jpg	1195	16:10:37	11/11/2021	53.681111	6.412260	725338.000	5953452.070
ENV_20	MARDUT1021_ENV_20_2021_11_11_161030.jpg	1196	16:10:52	11/11/2021	53.681095	6.412215	725333.980	5953449.720
ENV_20	MARDUT1021_ENV_20_2021_11_11_161042.jpg	1197	16:11:05	11/11/2021	53.681080	6.412157	725332.230	5953448.050
ENV_20	MARDUT1021_ENV_20_2021_11_11_161122.jpg	1198	16:11:44	11/11/2021	53.681040	6.412036	725323.120	5953443.480
ENV_20	MARDUT1021_ENV_20_2021_11_11_161142.jpg	1199	16:12:05	11/11/2021	53.681020	6.411964	725318.750	5953440.850
ENV_20	MARDUT1021_ENV_20_2021_11_11_161151.jpg	1200	16:12:13	11/11/2021	53.681010	6.411940	725317.540	5953439.740
ENV_20	MARDUT1021_ENV_20_2021_11_11_161206.jpg	1201	16:12:28	11/11/2021	53.680996	6.411905	725314.970	5953437.730
ENV_20	MARDUT1021_ENV_20_2021_11_11_161210.jpg	1202	16:12:32	11/11/2021	53.680989	6.411880	725313.270	5953437.070
ENV_20	MARDUT1021_ENV_20_2021_11_11_161217.jpg	1203	16:12:39	11/11/2021	53.680980	6.411850	725311.310	5953436.190
ENV_20	MARDUT1021_ENV_20_2021_11_11_161256.jpg	1204	16:13:18	11/11/2021	53.680937	6.411714	725302.990	5953430.870
ENV_20	MARDUT1021_ENV_20_2021_11_11_161312.jpg	1205	16:13:34	11/11/2021	53.680919	6.411667	725300.690	5953428.340
ENV_20	MARDUT1021_ENV_20_2021_11_11_161341.jpg	1206	16:14:03	11/11/2021	53.680883	6.411583	725294.220	5953424.700
ENV_20	MARDUT1021_ENV_20_2021_11_11_161353.jpg	1207	16:14:15	11/11/2021	53.680874	6.411553	725292.760	5953423.800
ENV_20	MARDUT1021_ENV_20_2021_11_11_161422.jpg	1208	16:14:44	11/11/2021	53.680840	6.411435	725284.660	5953418.910
ENV_20	MARDUT1021_ENV_20_2021_11_11_161437.jpg	1209	16:15:00	11/11/2021	53.680821	6.411380	725281.490	5953416.600
ENV_20	MARDUT1021_ENV_20_2021_11_11_161454.jpg	1210	16:15:17	11/11/2021	53.680799	6.411321	725277.160	5953413.880
ENV_20	MARDUT1021_ENV_20_2021_11_11_161524.jpg	1211	16:15:46	11/11/2021	53.680765	6.411227	725271.930	5953409.480

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_20	MARDUT1021_ENV_20_2021_11_11_161529.jpg	1212	16:15:51	11/11/2021	53.680756	6.411224	725270.980	5953408.940
ENV_20	MARDUT1021_ENV_20_2021_11_11_161600.jpg	1213	16:16:23	11/11/2021	53.680713	6.411106	725263.600	5953404.270
ENV_20	MARDUT1021_ENV_20_2021_11_11_161631.jpg	1214	16:16:53	11/11/2021	53.680687	6.411016	725258.480	5953400.540
ENV_20	MARDUT1021_ENV_20_2021_11_11_161652.jpg	1215	16:17:15	11/11/2021	53.680659	6.410937	725251.530	5953396.020
ENV_20	MARDUT1021_ENV_20_2021_11_11_161708.jpg	1216	16:17:30	11/11/2021	53.680642	6.410884	725249.820	5953395.540
ENV_20	MARDUT1021_ENV_20_2021_11_11_161730.jpg	1217	16:17:52	11/11/2021	53.680618	6.410817	725245.690	5953392.580
ENV_20	MARDUT1021_ENV_20_2021_11_11_161752.jpg	1218	16:18:14	11/11/2021	53.680589	6.410745	725240.300	5953388.940
ENV_20	MARDUT1021_ENV_20_2021_11_11_161810.jpg	1219	16:18:32	11/11/2021	53.680571	6.410683	725236.760	5953386.640
ENV_28	MARDUT1021_ENV_28_2021_11_05_150707.jpg	01	15:07:48	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_150928.jpg	02	15:10:09	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_151015.jpg	03	15:10:56	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_151018.jpg	04	15:10:59	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_151050.jpg	05	15:11:31	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_151107.jpg	06	15:11:48	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_151116.jpg	07	15:11:57	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_151139.jpg	08	15:12:20	05/11/2021	-	-	-	-
ENV_28	MARDUT1021_ENV_28_2021_11_05_151157.jpg	09	15:12:39	05/11/2021	53.682492	6.371928	722679.290	5953605.660
ENV_28	MARDUT1021_ENV_28_2021_11_05_151220.jpg	10	15:13:02	05/11/2021	53.682519	6.372014	722684.880	5953608.930
ENV_28	MARDUT1021_ENV_28_2021_11_05_151231.jpg	11	15:13:12	05/11/2021	53.682524	6.372014	722684.840	5953609.490
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152314.jpg	12	15:23:55	05/11/2021	53.682308	6.371738	722667.770	5953584.550
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152342.jpg	13	15:24:23	05/11/2021	53.682340	6.371777	722670.180	5953588.200
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152354.jpg	14	15:24:35	05/11/2021	53.682350	6.371783	722670.500	5953589.420
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152408.jpg	15	15:24:50	05/11/2021	53.682376	6.371798	722671.350	5953592.290
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152413.jpg	16	15:24:54	05/11/2021	53.682384	6.371797	722671.220	5953593.190
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152427.jpg	17	15:25:09	05/11/2021	53.682401	6.371833	722673.560	5953595.200
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152445.jpg	18	15:25:27	05/11/2021	53.682446	6.371850	722674.440	5953600.250
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152458.jpg	19	15:25:39	05/11/2021	53.682456	6.371861	722675.120	5953601.441
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152513.jpg	20	15:25:55	05/11/2021	53.682475	6.371887	722676.720	5953603.571

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152527.jpg	21	15:26:08	05/11/2021	53.682492	6.371884	722676.450	5953605.460
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152558.jpg	22	15:26:39	05/11/2021	53.682525	6.371976	722682.330	5953609.490
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152620.jpg	23	15:27:02	05/11/2021	53.682573	6.372051	722687.030	5953615.060
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152632.jpg	24	15:27:13	05/11/2021	53.682592	6.372071	722688.230	5953617.240
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152653.jpg	25	15:27:35	05/11/2021	53.682648	6.372132	722691.970	5953623.560
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152706.jpg	26	15:27:47	05/11/2021	53.682669	6.372158	722693.580	5953626.070
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152759.jpg	27	15:28:40	05/11/2021	53.682781	6.372271	722700.430	5953638.780
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152822.jpg	28	15:29:03	05/11/2021	53.682822	6.372319	722703.400	5953643.500
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152831.jpg	29	15:29:12	05/11/2021	53.682833	6.372323	722703.620	5953644.820
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152856.jpg	30	15:29:37	05/11/2021	53.682878	6.372368	722706.330	5953649.910
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152910.jpg	31	15:29:51	05/11/2021	53.682902	6.372421	722709.690	5953652.720
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152920.jpg	32	15:30:01	05/11/2021	53.682911	6.372438	722710.760	5953653.850
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_152944.jpg	33	15:30:26	05/11/2021	53.682966	6.372478	722713.100	5953660.040
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_153012.jpg	34	15:30:53	05/11/2021	53.683028	6.372576	722719.260	5953667.270
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_153022.jpg	35	15:31:03	05/11/2021	53.683044	6.372608	722721.270	5953669.130
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_153047.jpg	36	15:31:28	05/11/2021	53.683094	6.372678	722725.670	5953674.960
ENV_28(2)	MARDUT1021_ENV_28(2)_2021_11_05_153052.jpg	37	15:31:33	05/11/2021	53.683103	6.372696	722726.770	5953675.990
ENV_29	MARDUT1021_ENV_29_2021_11_09_145222.jpg	820	14:52:26	09/11/2021	53.683760	6.388696	723779.540	5953799.300
ENV_29	MARDUT1021_ENV_29_2021_11_09_145252.jpg	821	14:52:56	09/11/2021	53.683702	6.388639	723776.130	5953792.670
ENV_29	MARDUT1021_ENV_29_2021_11_09_145255.jpg	822	14:52:59	09/11/2021	53.683695	6.388632	723775.690	5953791.870
ENV_29	MARDUT1021_ENV_29_2021_11_09_145305.jpg	823	14:53:08	09/11/2021	53.683674	6.388624	723775.260	5953789.520
ENV_29	MARDUT1021_ENV_29_2021_11_09_145321.jpg	824	14:53:25	09/11/2021	53.683640	6.388606	723774.250	5953785.720
ENV_29	MARDUT1021_ENV_29_2021_11_09_145339.jpg	825	14:53:43	09/11/2021	53.683591	6.388565	723771.770	5953780.100
ENV_29	MARDUT1021_ENV_29_2021_11_09_145348.jpg	826	14:53:51	09/11/2021	53.683570	6.388564	723771.850	5953777.751
ENV_29	MARDUT1021_ENV_29_2021_11_09_145418.jpg	827	14:54:21	09/11/2021	53.683519	6.388526	723769.640	5953771.920
ENV_29	MARDUT1021_ENV_29_2021_11_09_145451.jpg	828	14:54:55	09/11/2021	53.683450	6.388492	723767.720	5953764.220
ENV_29	MARDUT1021_ENV_29_2021_11_09_145521.jpg	829	14:55:24	09/11/2021	53.683398	6.388444	723764.850	5953758.290
ENV_29	MARDUT1021_ENV_29_2021_11_09_145545.jpg	830	14:55:48	09/11/2021	53.683351	6.388396	723761.910	5953752.890

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_29	MARDUT1021_ENV_29_2021_11_09_145616.jpg	831	14:56:20	09/11/2021	53.683284	6.388343	723758.760	5953745.240
ENV_29	MARDUT1021_ENV_29_2021_11_09_145632.jpg	832	14:56:35	09/11/2021	53.683258	6.388315	723757.100	5953742.260
ENV_29	MARDUT1021_ENV_29_2021_11_09_145723.jpg	833	14:57:26	09/11/2021	53.683149	6.388250	723753.340	5953729.990
ENV_29	MARDUT1021_ENV_29_2021_11_09_145743.jpg	834	14:57:47	09/11/2021	53.683114	6.388230	723752.240	5953725.990
ENV_29	MARDUT1021_ENV_29_2021_11_09_145816.jpg	835	14:58:20	09/11/2021	53.683055	6.388164	723748.190	5953719.230
ENV_29	MARDUT1021_ENV_29_2021_11_09_145837.jpg	836	14:58:40	09/11/2021	53.682999	6.388122	723745.710	5953712.890
ENV_29	MARDUT1021_ENV_29_2021_11_09_145855.jpg	837	14:58:59	09/11/2021	53.682965	6.388092	723743.910	5953708.980
ENV_29	MARDUT1021_ENV_29_2021_11_09_145905.jpg	838	14:59:08	09/11/2021	53.682940	6.388081	723743.300	5953706.140
ENV_29	MARDUT1021_ENV_29_2021_11_09_145921.jpg	839	14:59:24	09/11/2021	53.682912	6.388066	723742.480	5953702.991
ENV_29	MARDUT1021_ENV_29_2021_11_09_145928.jpg	840	14:59:31	09/11/2021	53.682898	6.388058	723742.040	5953701.410
ENV_29	MARDUT1021_ENV_29_2021_11_09_145949.jpg	841	14:59:53	09/11/2021	53.682856	6.388016	723739.490	5953696.600
ENV_29	MARDUT1021_ENV_29_2021_11_09_145954.jpg	842	14:59:57	09/11/2021	53.682847	6.388013	723739.330	5953695.670
ENV_29	MARDUT1021_ENV_29_2021_11_09_150001.jpg	843	15:00:04	09/11/2021	53.682831	6.388000	723738.530	5953693.860
ENV_29	MARDUT1021_ENV_29_2021_11_09_150048.jpg	844	15:00:52	09/11/2021	53.682711	6.387917	723733.700	5953680.260
ENV_29	MARDUT1021_ENV_29_2021_11_09_150123.jpg	845	15:01:27	09/11/2021	53.682641	6.387865	723730.630	5953672.210
ENV_29	MARDUT1021_ENV_29_2021_11_09_150159.jpg	846	15:02:02	09/11/2021	53.682562	6.387809	723727.370	5953663.330
ENV_29	MARDUT1021_ENV_29_2021_11_09_150222.jpg	847	15:02:26	09/11/2021	53.682515	6.387773	723725.230	5953657.970
ENV_29	MARDUT1021_ENV_29_2021_11_09_150242.jpg	848	15:02:45	09/11/2021	53.682470	6.387743	723723.470	5953652.850
ENV_29	MARDUT1021_ENV_29_2021_11_09_150248.jpg	849	15:02:52	09/11/2021	53.682459	6.387731	723722.720	5953651.600
ENV_29	MARDUT1021_ENV_29_2021_11_09_150302.jpg	850	15:03:06	09/11/2021	53.682434	6.387705	723721.160	5953648.720
ENV_29	MARDUT1021_ENV_29_2021_11_09_150315.jpg	851	15:03:19	09/11/2021	53.682409	6.387677	723719.430	5953645.820
ENV_29	MARDUT1021_ENV_29_2021_11_09_150334.jpg	852	15:03:37	09/11/2021	53.682371	6.387638	723717.080	5953641.490
ENV_29	MARDUT1021_ENV_29_2021_11_09_150352.jpg	853	15:03:55	09/11/2021	53.682326	6.387604	723715.050	5953636.450
ENV_29	MARDUT1021_ENV_29_2021_11_09_150430.jpg	854	15:04:34	09/11/2021	53.682239	6.387556	723712.360	5953626.530
ENV_29	MARDUT1021_ENV_29_2021_11_09_150436.jpg	855	15:04:39	09/11/2021	53.682231	6.387555	723712.320	5953625.740
ENV_29	MARDUT1021_ENV_29_2021_11_09_150443.jpg	856	15:04:46	09/11/2021	53.682218	6.387548	723711.940	5953624.170
ENV_29	MARDUT1021_ENV_29_2021_11_09_150514.jpg	857	15:05:17	09/11/2021	53.682145	6.387488	723708.390	5953615.871
ENV_29	MARDUT1021_ENV_29_2021_11_09_150538.jpg	858	15:05:41	09/11/2021	53.682094	6.387454	723706.380	5953610.101

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_29	MARDUT1021_ENV_29_2021_11_09_150552.jpg	859	15:05:55	09/11/2021	53.682073	6.387437	723705.390	5953607.701
ENV_30	MARDUT1021_ENV_30_2021_11_09_154314.jpg	860	15:43:17	09/11/2021	53.682238	6.392561	724042.760	5953642.230
ENV_30	MARDUT1021_ENV_30_2021_11_09_154321.jpg	861	15:43:25	09/11/2021	53.682247	6.392585	724044.320	5953643.300
ENV_30	MARDUT1021_ENV_30_2021_11_09_154410.jpg	862	15:44:14	09/11/2021	53.682305	6.392732	724053.740	5953650.225
ENV_30	MARDUT1021_ENV_30_2021_11_09_154428.jpg	863	15:44:32	09/11/2021	53.682329	6.392782	724056.870	5953653.060
ENV_30	MARDUT1021_ENV_30_2021_11_09_154455.jpg	864	15:44:58	09/11/2021	53.682349	6.392852	724061.430	5953655.550
ENV_30	MARDUT1021_ENV_30_2021_11_09_154531.jpg	865	15:45:34	09/11/2021	53.682396	6.392982	724069.730	5953661.180
ENV_30	MARDUT1021_ENV_30_2021_11_09_154608.jpg	866	15:46:11	09/11/2021	53.682442	6.393105	724077.590	5953666.610
ENV_30	MARDUT1021_ENV_30_2021_11_09_154627.jpg	867	15:46:30	09/11/2021	53.682460	6.393162	724081.250	5953668.800
ENV_30	MARDUT1021_ENV_30_2021_11_09_154700.jpg	868	15:47:03	09/11/2021	53.682497	6.393262	724087.700	5953673.280
ENV_30	MARDUT1021_ENV_30_2021_11_09_154720.jpg	869	15:47:22	09/11/2021	53.682515	6.393318	724091.300	5953675.410
ENV_30	MARDUT1021_ENV_30_2021_11_09_154749.jpg	870	15:47:52	09/11/2021	53.682543	6.393389	724095.800	5953678.780
ENV_30	MARDUT1021_ENV_30_2021_11_09_154804.jpg	871	15:48:07	09/11/2021	53.682556	6.393449	724099.740	5953680.430
ENV_30	MARDUT1021_ENV_30_2021_11_09_154817.jpg	872	15:48:20	09/11/2021	53.682567	6.393468	724100.930	5953681.690
ENV_30	MARDUT1021_ENV_30_2021_11_09_154900.jpg	873	15:49:03	09/11/2021	53.682634	6.393642	724112.050	5953689.640
ENV_30	MARDUT1021_ENV_30_2021_11_09_154947.jpg	874	15:49:50	09/11/2021	53.682698	6.393798	724121.980	5953697.260
ENV_30	MARDUT1021_ENV_30_2021_11_09_155013.jpg	875	15:50:16	09/11/2021	53.682722	6.393881	724127.330	5953700.190
ENV_30	MARDUT1021_ENV_30_2021_11_09_155044.jpg	876	15:50:48	09/11/2021	53.682762	6.393987	724134.150	5953705.030
ENV_30	MARDUT1021_ENV_30_2021_11_09_155120.jpg	877	15:51:24	09/11/2021	53.682795	6.394081	724140.190	5953708.990
ENV_30	MARDUT1021_ENV_30_2021_11_09_155204.jpg	878	15:52:07	09/11/2021	53.682853	6.394245	724150.680	5953715.980
ENV_30	MARDUT1021_ENV_30_2021_11_09_155244.jpg	879	15:52:47	09/11/2021	53.682904	6.394379	724159.250	5953722.019
ENV_30	MARDUT1021_ENV_30_2021_11_09_155302.jpg	880	15:53:06	09/11/2021	53.682925	6.394442	724163.280	5953724.550
ENV_30	MARDUT1021_ENV_30_2021_11_09_155344.jpg	881	15:53:47	09/11/2021	53.682969	6.394570	724171.520	5953729.870
ENV_30	MARDUT1021_ENV_30_2021_11_09_155418.jpg	882	15:54:21	09/11/2021	53.683016	6.394702	724180.000	5953735.470
ENV_30	MARDUT1021_ENV_30_2021_11_09_155446.jpg	883	15:54:49	09/11/2021	53.683051	6.394794	724185.890	5953739.690
ENV_30	MARDUT1021_ENV_30_2021_11_09_155516.jpg	884	15:55:19	09/11/2021	53.683079	6.394878	724191.250	5953743.050
ENV_30	MARDUT1021_ENV_30_2021_11_09_155536.jpg	885	15:55:40	09/11/2021	53.683106	6.394942	724195.330	5953746.270
ENV_30	MARDUT1021_ENV_30_2021_11_09_155558.jpg	886	15:56:01	09/11/2021	53.683132	6.395011	724199.770	5953749.410

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_30	MARDUT1021_ENV_30_2021_11_09_155622.jpg	887	15:56:25	09/11/2021	53.683165	6.395088	724204.710	5953753.270
ENV_30	MARDUT1021_ENV_30_2021_11_09_155644.jpg	888	15:56:47	09/11/2021	53.683197	6.395163	724209.490	5953757.070
ENV_30	MARDUT1021_ENV_30_2021_11_09_155711.jpg	889	15:57:15	09/11/2021	53.683226	6.395245	724214.700	5953760.560
ENV_30	MARDUT1021_ENV_30_2021_11_09_155732.jpg	890	15:57:35	09/11/2021	53.683251	6.395309	724218.820	5953763.589
ENV_31	MARDUT1021_ENV_31_2021_11_09_141734.jpg	794	14:17:37	09/11/2021	53.677524	6.388812	723820.290	5953106.270
ENV_31	MARDUT1021_ENV_31_2021_11_09_141810.jpg	795	14:18:14	09/11/2021	53.677461	6.388753	723816.720	5953099.000
ENV_31	MARDUT1021_ENV_31_2021_11_09_141833.jpg	796	14:18:36	09/11/2021	53.677411	6.388734	723815.730	5953093.390
ENV_31	MARDUT1021_ENV_31_2021_11_09_141858.jpg	797	14:19:01	09/11/2021	53.677364	6.388695	723813.430	5953088.090
ENV_31	MARDUT1021_ENV_31_2021_11_09_141926.jpg	798	14:19:29	09/11/2021	53.677293	6.388649	723810.785	5953079.970
ENV_31	MARDUT1021_ENV_31_2021_11_09_141935.jpg	799	14:19:39	09/11/2021	53.677286	6.388645	723810.535	5953079.220
ENV_31	MARDUT1021_ENV_31_2021_11_09_142006.jpg	800	14:20:09	09/11/2021	53.677211	6.388596	723807.680	5953070.755
ENV_31	MARDUT1021_ENV_31_2021_11_09_142032.jpg	801	14:20:35	09/11/2021	53.677178	6.388562	723805.625	5953067.009
ENV_31	MARDUT1021_ENV_31_2021_11_09_142120.jpg	802	14:21:24	09/11/2021	53.677089	6.388483	723800.875	5953056.840
ENV_31	MARDUT1021_ENV_31_2021_11_09_142144.jpg	803	14:21:47	09/11/2021	53.677029	6.388432	723797.815	5953050.020
ENV_31	MARDUT1021_ENV_31_2021_11_09_142206.jpg	804	14:22:09	09/11/2021	53.676977	6.388398	723795.885	5953044.064
ENV_31	MARDUT1021_ENV_31_2021_11_09_142230.jpg	805	14:22:33	09/11/2021	53.676924	6.388367	723794.090	5953038.135
ENV_31	MARDUT1021_ENV_31_2021_11_09_142245.jpg	806	14:22:48	09/11/2021	53.676902	6.388348	723792.990	5953035.595
ENV_31	MARDUT1021_ENV_31_2021_11_09_142252.jpg	807	14:22:55	09/11/2021	53.676885	6.388341	723792.570	5953033.710
ENV_31	MARDUT1021_ENV_31_2021_11_09_142319.jpg	808	14:23:22	09/11/2021	53.676815	6.388290	723789.610	5953025.765
ENV_31	MARDUT1021_ENV_31_2021_11_09_142353.jpg	809	14:23:57	09/11/2021	53.676739	6.388243	723786.925	5953017.170
ENV_31	MARDUT1021_ENV_31_2021_11_09_142429.jpg	810	14:24:32	09/11/2021	53.676661	6.388184	723783.435	5953008.326
ENV_31	MARDUT1021_ENV_31_2021_11_09_142444.jpg	811	14:24:47	09/11/2021	53.676632	6.388168	723782.477	5953005.012
ENV_31	MARDUT1021_ENV_31_2021_11_09_142451.jpg	812	14:24:54	09/11/2021	53.676617	6.388158	723781.895	5953003.343
ENV_31	MARDUT1021_ENV_31_2021_11_09_142513.jpg	813	14:25:17	09/11/2021	53.676576	6.388119	723779.590	5952998.600
ENV_31	MARDUT1021_ENV_31_2021_11_09_142525.jpg	814	14:25:28	09/11/2021	53.676560	6.388105	723778.730	5952996.750
ENV_31	MARDUT1021_ENV_31_2021_11_09_142555.jpg	815	14:25:58	09/11/2021	53.676490	6.388053	723775.665	5952988.891
ENV_31	MARDUT1021_ENV_31_2021_11_09_142639.jpg	816	14:26:43	09/11/2021	53.676392	6.387979	723771.320	5952977.680
ENV_31	MARDUT1021_ENV_31_2021_11_09_142714.jpg	817	14:27:18	09/11/2021	53.676320	6.387915	723767.470	5952969.520

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_31	MARDUT1021_ENV_31_2021_11_09_142733.jpg	818	14:27:37	09/11/2021	53.676292	6.387885	723765.645	5952966.285
ENV_31	MARDUT1021_ENV_31_2021_11_09_142752.jpg	819	14:27:55	09/11/2021	53.676254	6.387855	723763.825	5952961.950
ENV_32	MARDUT1021_ENV_32_2021_11_09_165127.jpg	891	16:51:30	09/11/2021	53.677512	6.395395	724254.990	5953125.600
ENV_32	MARDUT1021_ENV_32_2021_11_09_165144.jpg	892	16:51:47	09/11/2021	53.677478	6.395365	724253.210	5953121.740
ENV_32	MARDUT1021_ENV_32_2021_11_09_165223.jpg	893	16:52:26	09/11/2021	53.677395	6.395310	724250.000	5953112.420
ENV_32	MARDUT1021_ENV_32_2021_11_09_165244.jpg	894	16:52:47	09/11/2021	53.677357	6.395281	724248.270	5953108.020
ENV_32	MARDUT1021_ENV_32_2021_11_09_165311.jpg	895	16:53:15	09/11/2021	53.677301	6.395233	724245.410	5953101.640
ENV_32	MARDUT1021_ENV_32_2021_11_09_165329.jpg	896	16:53:32	09/11/2021	53.677272	6.395200	724243.380	5953098.360
ENV_32	MARDUT1021_ENV_32_2021_11_09_165354.jpg	897	16:53:57	09/11/2021	53.677218	6.395154	724240.670	5953092.221
ENV_32	MARDUT1021_ENV_32_2021_11_09_165417.jpg	898	16:54:20	09/11/2021	53.677174	6.395115	724238.290	5953087.199
ENV_32	MARDUT1021_ENV_32_2021_11_09_165455.jpg	899	16:54:58	09/11/2021	53.677095	6.395060	724235.090	5953078.210
ENV_32	MARDUT1021_ENV_32_2021_11_09_165533.jpg	900	16:55:36	09/11/2021	53.677014	6.394987	724230.690	5953068.980
ENV_32	MARDUT1021_ENV_32_2021_11_09_165609.jpg	901	16:56:12	09/11/2021	53.676952	6.394933	724227.460	5953061.950
ENV_32	MARDUT1021_ENV_32_2021_11_09_165634.jpg	902	16:56:38	09/11/2021	53.676880	6.394888	724224.900	5953053.810
ENV_32	MARDUT1021_ENV_32_2021_11_09_165656.jpg	903	16:56:59	09/11/2021	53.676846	6.394858	724223.070	5953049.850
ENV_32	MARDUT1021_ENV_32_2021_11_09_165738.jpg	904	16:57:41	09/11/2021	53.676743	6.394796	724219.510	5953038.271
ENV_32	MARDUT1021_ENV_32_2021_11_09_165759.jpg	905	16:58:02	09/11/2021	53.676702	6.394761	724217.430	5953033.570
ENV_32	MARDUT1021_ENV_32_2021_11_09_165810.jpg	906	16:58:14	09/11/2021	53.676690	6.394743	724216.300	5953032.150
ENV_32	MARDUT1021_ENV_32_2021_11_09_165850.jpg	907	16:58:53	09/11/2021	53.676593	6.394689	724213.290	5953021.200
ENV_32	MARDUT1021_ENV_32_2021_11_09_165913.jpg	908	16:59:16	09/11/2021	53.676554	6.394667	724212.050	5953016.870
ENV_32	MARDUT1021_ENV_32_2021_11_09_165939.jpg	909	16:59:42	09/11/2021	53.676494	6.394617	724209.060	5953009.980
ENV_32	MARDUT1021_ENV_32_2021_11_09_170002.jpg	910	17:00:05	09/11/2021	53.676450	6.394586	724207.210	5953004.980
ENV_32	MARDUT1021_ENV_32_2021_11_09_170025.jpg	911	17:00:29	09/11/2021	53.676402	6.394539	724204.410	5952999.480
ENV_32	MARDUT1021_ENV_32_2021_11_09_170051.jpg	912	17:00:54	09/11/2021	53.676347	6.394492	724201.590	5952993.210
ENV_32	MARDUT1021_ENV_32_2021_11_09_170115.jpg	913	17:01:19	09/11/2021	53.676292	6.394450	724199.070	5952987.030
ENV_32	MARDUT1021_ENV_32_2021_11_09_170128.jpg	914	17:01:31	09/11/2021	53.676275	6.394433	724198.060	5952985.010
ENV_33	MARDUT1021_ENV_33_2021_11_09_190001.jpg	969	19:00:04	09/11/2021	53.677975	6.403241	724770.520	5953201.899
ENV_33	MARDUT1021_ENV_33_2021_11_09_190031.jpg	970	19:00:34	09/11/2021	53.677904	6.403212	724768.990	5953193.930

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_33	MARDUT1021_ENV_33_2021_11_09_190110.jpg	971	19:01:13	09/11/2021	53.677831	6.403153	724765.490	5953185.580
ENV_33	MARDUT1021_ENV_33_2021_11_09_190143.jpg	972	19:01:47	09/11/2021	53.677766	6.403094	724761.970	5953178.240
ENV_33	MARDUT1021_ENV_33_2021_11_09_190209.jpg	973	19:02:12	09/11/2021	53.677714	6.403047	724759.110	5953172.290
ENV_33	MARDUT1021_ENV_33_2021_11_09_190243.jpg	974	19:02:46	09/11/2021	53.677650	6.402992	724755.840	5953165.010
ENV_33	MARDUT1021_ENV_33_2021_11_09_190318.jpg	975	19:03:21	09/11/2021	53.677578	6.402931	724752.170	5953156.750
ENV_33	MARDUT1021_ENV_33_2021_11_09_190337.jpg	976	19:03:40	09/11/2021	53.677540	6.402886	724749.450	5953152.420
ENV_33	MARDUT1021_ENV_33_2021_11_09_190422.jpg	977	19:04:26	09/11/2021	53.677438	6.402817	724745.420	5953140.910
ENV_33	MARDUT1021_ENV_33_2021_11_09_190447.jpg	978	19:04:50	09/11/2021	53.677392	6.402795	724744.220	5953135.680
ENV_33	MARDUT1021_ENV_33_2021_11_09_190500.jpg	979	19:05:04	09/11/2021	53.677357	6.402763	724742.300	5953131.660
ENV_33	MARDUT1021_ENV_33_2021_11_09_190516.jpg	980	19:05:20	09/11/2021	53.677330	6.402728	724740.110	5953128.560
ENV_33	MARDUT1021_ENV_33_2021_11_09_190539.jpg	981	19:05:42	09/11/2021	53.677281	6.402680	724737.220	5953123.000
ENV_33	MARDUT1021_ENV_33_2021_11_09_190549.jpg	982	19:05:52	09/11/2021	53.677255	6.402673	724736.900	5953120.050
ENV_33	MARDUT1021_ENV_33_2021_11_09_190552.jpg	983	19:05:55	09/11/2021	53.677250	6.402672	724736.830	5953119.500
ENV_33	MARDUT1021_ENV_33_2021_11_09_190554.jpg	984	19:05:57	09/11/2021	53.677244	6.402675	724737.080	5953118.860
ENV_33	MARDUT1021_ENV_33_2021_11_09_190557.jpg	985	19:06:00	09/11/2021	53.677243	6.402678	724737.250	5953118.710
ENV_33	MARDUT1021_ENV_33_2021_11_09_190601.jpg	986	19:06:05	09/11/2021	53.677232	6.402678	724737.350	5953117.560
ENV_33	MARDUT1021_ENV_33_2021_11_09_190612.jpg	987	19:06:16	09/11/2021	53.677212	6.402665	724736.580	5953115.210
ENV_33	MARDUT1021_ENV_33_2021_11_09_190621.jpg	988	19:06:25	09/11/2021	53.677193	6.402654	724735.970	5953113.130
ENV_33	MARDUT1021_ENV_33_2021_11_09_190622.jpg	989	19:06:26	09/11/2021	53.677187	6.402649	724735.670	5953112.480
ENV_33	MARDUT1021_ENV_33_2021_11_09_190628.jpg	990	19:06:31	09/11/2021	53.677175	6.402639	724735.060	5953111.030
ENV_33	MARDUT1021_ENV_33_2021_11_09_190637.jpg	991	19:06:40	09/11/2021	53.677166	6.402627	724734.330	5953110.020
ENV_33	MARDUT1021_ENV_33_2021_11_09_190643.jpg	992	19:06:46	09/11/2021	53.677155	6.402617	724733.700	5953108.800
ENV_33	MARDUT1021_ENV_33_2021_11_09_190650.jpg	993	19:06:53	09/11/2021	53.677141	6.402609	724733.290	5953107.150
ENV_33	MARDUT1021_ENV_33_2021_11_09_190656.jpg	994	19:06:59	09/11/2021	53.677126	6.402591	724732.170	5953105.480
ENV_33	MARDUT1021_ENV_33_2021_11_09_190701.jpg	995	19:07:04	09/11/2021	53.677116	6.402582	724731.650	5953104.280
ENV_33	MARDUT1021_ENV_33_2021_11_09_190733.jpg	996	19:07:36	09/11/2021	53.677046	6.402532	724728.660	5953096.380
ENV_33	MARDUT1021_ENV_33_2021_11_09_190805.jpg	997	19:08:08	09/11/2021	53.676974	6.402477	724725.440	5953088.170
ENV_33	MARDUT1021_ENV_33_2021_11_09_190826.jpg	998	19:08:30	09/11/2021	53.676934	6.402445	724723.570	5953083.680

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_33	MARDUT1021_ENV_33_2021_11_09_190857.jpg	999	19:09:00	09/11/2021	53.676874	6.402411	724721.620	5953076.860
ENV_33	MARDUT1021_ENV_33_2021_11_09_190936.jpg	1000	19:09:40	09/11/2021	53.676784	6.402343	724717.600	5953066.640
ENV_33	MARDUT1021_ENV_33_2021_11_09_190951.jpg	1001	19:09:54	09/11/2021	53.676759	6.402324	724716.490	5953063.780
ENV_33	MARDUT1021_ENV_33_2021_11_09_191003.jpg	1002	19:10:06	09/11/2021	53.676735	6.402296	724714.740	5953061.101
ENV_33	MARDUT1021_ENV_33_2021_11_09_191024.jpg	1003	19:10:27	09/11/2021	53.676699	6.402260	724712.590	5953056.921
ENV_34	MARDUT1021_ENV_34_2021_11_09_203152.jpg	1027	20:31:56	09/11/2021	53.677182	6.411589	725325.960	5953140.140
ENV_34	MARDUT1021_ENV_34_2021_11_09_203226.jpg	1028	20:32:30	09/11/2021	53.677235	6.411560	725323.770	5953145.980
ENV_34	MARDUT1021_ENV_34_2021_11_09_203249.jpg	1029	20:32:53	09/11/2021	53.677279	6.411542	725322.300	5953150.859
ENV_34	MARDUT1021_ENV_34_2021_11_09_203316.jpg	1030	20:33:20	09/11/2021	53.677330	6.411520	725320.620	5953156.460
ENV_34	MARDUT1021_ENV_34_2021_11_09_203342.jpg	1031	20:33:46	09/11/2021	53.677385	6.411469	725316.940	5953162.400
ENV_34	MARDUT1021_ENV_34_2021_11_09_203414.jpg	1032	20:34:18	09/11/2021	53.677436	6.411435	725314.430	5953167.930
ENV_34	MARDUT1021_ENV_34_2021_11_09_203442.jpg	1033	20:34:46	09/11/2021	53.677517	6.411384	725310.630	5953176.800
ENV_34	MARDUT1021_ENV_34_2021_11_09_203514.jpg	1034	20:35:18	09/11/2021	53.677584	6.411357	725308.480	5953184.190
ENV_34	MARDUT1021_ENV_34_2021_11_09_203535.jpg	1035	20:35:39	09/11/2021	53.677632	6.411349	725307.680	5953189.420
ENV_34	MARDUT1021_ENV_34_2021_11_09_203614.jpg	1036	20:36:18	09/11/2021	53.677693	6.411318	725305.320	5953196.120
ENV_34	MARDUT1021_ENV_34_2021_11_09_203646.jpg	1037	20:36:50	09/11/2021	53.677748	6.411282	725302.670	5953202.120
ENV_34	MARDUT1021_ENV_34_2021_11_09_203734.jpg	1038	20:37:38	09/11/2021	53.677825	6.411230	725298.800	5953210.570
ENV_34	MARDUT1021_ENV_34_2021_11_09_203756.jpg	1039	20:37:58	09/11/2021	53.677867	6.411191	725296.040	5953215.060
ENV_34	MARDUT1021_ENV_34_2021_11_09_203845.jpg	1040	20:38:49	09/11/2021	53.677970	6.411152	725292.890	5953226.470
ENV_34	MARDUT1021_ENV_34_2021_11_09_203907.jpg	1041	20:39:11	09/11/2021	53.678010	6.411123	725290.730	5953230.800
ENV_34	MARDUT1021_ENV_34_2021_11_09_203937.jpg	1042	20:39:41	09/11/2021	53.678062	6.411079	725287.600	5953236.400
ENV_34	MARDUT1021_ENV_34_2021_11_09_203958.jpg	1043	20:40:01	09/11/2021	53.678115	6.411039	725284.620	5953242.230
ENV_34	MARDUT1021_ENV_34_2021_11_09_204015.jpg	1044	20:40:19	09/11/2021	53.678140	6.411026	725283.680	5953244.920
ENV_34	MARDUT1021_ENV_34_2021_11_09_204046.jpg	1045	20:40:50	09/11/2021	53.678201	6.410974	725279.870	5953251.590
ENV_34	MARDUT1021_ENV_34_2021_11_09_204109.jpg	1046	20:41:13	09/11/2021	53.678262	6.410930	725276.690	5953258.240
ENV_34	MARDUT1021_ENV_34_2021_11_09_204124.jpg	1047	20:41:29	09/11/2021	53.678299	6.410901	725274.580	5953262.210
ENV_34	MARDUT1021_ENV_34_2021_11_09_204134.jpg	1048	20:41:38	09/11/2021	53.678316	6.410902	725274.500	5953264.120
ENV_34	MARDUT1021_ENV_34_2021_11_09_204155.jpg	1049	20:41:59	09/11/2021	53.678350	6.410891	725273.640	5953267.840

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_34	MARDUT1021_ENV_34_2021_11_09_204213.jpg	1050	20:42:17	09/11/2021	53.678384	6.410895	725273.710	5953271.600
ENV_34	MARDUT1021_ENV_34_2021_11_09_204240.jpg	1051	20:42:44	09/11/2021	53.678441	6.410863	725271.270	5953277.870
ENV_34	MARDUT1021_ENV_34_2021_11_09_204254.jpg	1052	20:42:58	09/11/2021	53.678477	6.410838	725269.470	5953281.800
ENV_34	MARDUT1021_ENV_34_2021_11_09_204259.jpg	1053	20:43:03	09/11/2021	53.678483	6.410826	725268.610	5953282.460
ENV_34	MARDUT1021_ENV_34_2021_11_09_204314.jpg	1054	20:43:18	09/11/2021	53.678498	6.410818	725268.000	5953284.130
ENV_35	MARDUT1021_ENV_35_2021_11_09_213351.jpg	1055	21:33:54	09/11/2021	53.678431	6.418978	725807.100	5953302.520
ENV_35	MARDUT1021_ENV_35_2021_11_09_213411.jpg	1056	21:34:13	09/11/2021	53.678393	6.418987	725807.920	5953298.330
ENV_35	MARDUT1021_ENV_35_2021_11_09_213452.jpg	1057	21:34:54	09/11/2021	53.678320	6.418976	725807.550	5953290.140
ENV_35	MARDUT1021_ENV_35_2021_11_09_213505.jpg	1058	21:35:07	09/11/2021	53.678291	6.418973	725807.510	5953286.939
ENV_35	MARDUT1021_ENV_35_2021_11_09_213540.jpg	1059	21:35:42	09/11/2021	53.678219	6.418953	725806.590	5953278.840
ENV_35	MARDUT1021_ENV_35_2021_11_09_213555.jpg	1060	21:35:57	09/11/2021	53.678183	6.418963	725807.440	5953274.870
ENV_35	MARDUT1021_ENV_35_2021_11_09_213626.jpg	1061	21:36:28	09/11/2021	53.678111	6.418966	725808.040	5953266.910
ENV_35	MARDUT1021_ENV_35_2021_11_09_213646.jpg	1062	21:36:49	09/11/2021	53.678060	6.418969	725808.520	5953261.260
ENV_35	MARDUT1021_ENV_35_2021_11_09_213714.jpg	1063	21:37:16	09/11/2021	53.677993	6.418966	725808.680	5953253.839
ENV_35	MARDUT1021_ENV_35_2021_11_09_213732.jpg	1064	21:37:34	09/11/2021	53.677956	6.418958	725808.340	5953249.600
ENV_35	MARDUT1021_ENV_35_2021_11_09_213800.jpg	1065	21:38:03	09/11/2021	53.677898	6.418947	725807.930	5953243.160
ENV_35	MARDUT1021_ENV_35_2021_11_09_213830.jpg	1066	21:38:33	09/11/2021	53.677830	6.418922	725806.650	5953235.489
ENV_35	MARDUT1021_ENV_35_2021_11_09_213853.jpg	1067	21:38:55	09/11/2021	53.677769	6.418918	725806.700	5953228.750
ENV_35	MARDUT1021_ENV_35_2021_11_09_213914.jpg	1068	21:39:16	09/11/2021	53.677719	6.418915	725806.780	5953223.160
ENV_35	MARDUT1021_ENV_35_2021_11_09_213953.jpg	1069	21:39:55	09/11/2021	53.677629	6.418911	725806.990	5953213.080
ENV_35	MARDUT1021_ENV_35_2021_11_09_214021.jpg	1070	21:40:23	09/11/2021	53.677565	6.418908	725807.090	5953206.020
ENV_35	MARDUT1021_ENV_35_2021_11_09_214049.jpg	1071	21:40:52	09/11/2021	53.677500	6.418894	725806.550	5953198.721
ENV_35	MARDUT1021_ENV_35_2021_11_09_214118.jpg	1072	21:41:20	09/11/2021	53.677451	6.418910	725807.850	5953193.350
ENV_35	MARDUT1021_ENV_35_2021_11_09_214133.jpg	1073	21:41:36	09/11/2021	53.677416	6.418914	725808.340	5953189.450
ENV_35	MARDUT1021_ENV_35_2021_11_09_214211.jpg	1074	21:42:13	09/11/2021	53.677315	6.418942	725810.710	5953178.350
ENV_35	MARDUT1021_ENV_35_2021_11_09_214225.jpg	1075	21:42:27	09/11/2021	53.677283	6.418932	725810.240	5953174.740
ENV_35	MARDUT1021_ENV_35_2021_11_09_214253.jpg	1076	21:42:55	09/11/2021	53.677209	6.418931	725810.555	5953166.545
ENV_35	MARDUT1021_ENV_35_2021_11_09_214318.jpg	1077	21:43:20	09/11/2021	53.677146	6.418925	725810.460	5953159.439

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_35	MARDUT1021_ENV_35_2021_11_09_214335.jpg	1078	21:43:38	09/11/2021	53.677102	6.418929	725811.000	5953154.620
ENV_35	MARDUT1021_ENV_35_2021_11_09_214404.jpg	1079	21:44:06	09/11/2021	53.677031	6.418915	725810.470	5953146.680
ENV_36	MARDUT1021_ENV_36_2021_11_09_224635.jpg	1111	22:46:38	09/11/2021	53.678123	6.427343	726361.030	5953294.880
ENV_36	MARDUT1021_ENV_36_2021_11_09_224704.jpg	1112	22:47:06	09/11/2021	53.678059	6.427343	726361.380	5953287.750
ENV_36	MARDUT1021_ENV_36_2021_11_09_224745.jpg	1113	22:47:47	09/11/2021	53.677964	6.427343	726361.900	5953277.230
ENV_36	MARDUT1021_ENV_36_2021_11_09_224823.jpg	1114	22:48:25	09/11/2021	53.677873	6.427321	726360.950	5953266.980
ENV_36	MARDUT1021_ENV_36_2021_11_09_224858.jpg	1115	22:49:01	09/11/2021	53.677791	6.427306	726360.380	5953257.890
ENV_36	MARDUT1021_ENV_36_2021_11_09_224927.jpg	1116	22:49:29	09/11/2021	53.677719	6.427304	726360.610	5953249.850
ENV_36	MARDUT1021_ENV_36_2021_11_09_224948.jpg	1117	22:49:50	09/11/2021	53.677674	6.427296	726360.360	5953244.800
ENV_36	MARDUT1021_ENV_36_2021_11_09_225012.jpg	1118	22:50:14	09/11/2021	53.677619	6.427291	726360.290	5953238.709
ENV_36	MARDUT1021_ENV_36_2021_11_09_225033.jpg	1119	22:50:35	09/11/2021	53.677573	6.427287	726360.260	5953233.540
ENV_36	MARDUT1021_ENV_36_2021_11_09_225051.jpg	1120	22:50:53	09/11/2021	53.677532	6.427296	726361.090	5953229.060
ENV_36	MARDUT1021_ENV_36_2021_11_09_225124.jpg	1121	22:51:28	09/11/2021	53.677454	6.427302	726361.910	5953220.360
ENV_36	MARDUT1021_ENV_36_2021_11_09_225150.jpg	1122	22:51:52	09/11/2021	53.677396	6.427305	726362.410	5953213.880
ENV_36	MARDUT1021_ENV_36_2021_11_09_225217.jpg	1123	22:52:19	09/11/2021	53.677333	6.427313	726363.260	5953206.930
ENV_36	MARDUT1021_ENV_36_2021_11_09_225247.jpg	1124	22:52:50	09/11/2021	53.677261	6.427299	726362.770	5953198.900
ENV_36	MARDUT1021_ENV_36_2021_11_09_225321.jpg	1125	22:53:23	09/11/2021	53.677181	6.427297	726363.040	5953190.040
ENV_36	MARDUT1021_ENV_36_2021_11_09_225343.jpg	1126	22:53:45	09/11/2021	53.677143	6.427291	726362.850	5953185.740
ENV_36	MARDUT1021_ENV_36_2021_11_09_225416.jpg	1127	22:54:18	09/11/2021	53.677055	6.427275	726362.290	5953175.900
ENV_36	MARDUT1021_ENV_36_2021_11_09_225457.jpg	1128	22:54:59	09/11/2021	53.676957	6.427264	726362.060	5953164.981
ENV_36	MARDUT1021_ENV_36_2021_11_09_225518.jpg	1129	22:55:20	09/11/2021	53.676911	6.427274	726363.010	5953159.890
ENV_36	MARDUT1021_ENV_36_2021_11_09_225545.jpg	1130	22:55:47	09/11/2021	53.676844	6.427266	726362.820	5953152.410
ENV_36	MARDUT1021_ENV_36_2021_11_09_225612.jpg	1131	22:56:14	09/11/2021	53.676789	6.427264	726362.990	5953146.300
ENV_36	MARDUT1021_ENV_36_2021_11_09_225636.jpg	1132	22:56:39	09/11/2021	53.676727	6.427265	726363.380	5953139.430
ENV_37	MARDUT1021_ENV_37_2021_11_10_001824.jpg	1159	00:18:27	10/11/2021	-	-	-	-
ENV_37	MARDUT1021_ENV_37_2021_11_10_001955.jpg	1160	00:19:58	10/11/2021	53.679753	6.432308	726680.100	5953492.000
ENV_37	MARDUT1021_ENV_37_2021_11_10_002026.jpg	1161	00:20:29	10/11/2021	53.679697	6.432344	726682.740	5953485.920
ENV_37	MARDUT1021_ENV_37_2021_11_10_002051.jpg	1162	00:20:54	10/11/2021	53.679640	6.432369	726684.700	5953479.630

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_37	MARDUT1021_ENV_37_2021_11_10_002125.jpg	1163	00:21:28	10/11/2021	53.679570	6.432437	726689.580	5953471.990
ENV_37	MARDUT1021_ENV_37_2021_11_10_002137.jpg	1164	00:21:40	10/11/2021	53.679550	6.432445	726690.240	5953469.820
ENV_37	MARDUT1021_ENV_37_2021_11_10_002152.jpg	1165	00:21:55	10/11/2021	53.679511	6.432471	726692.130	5953465.540
ENV_37	MARDUT1021_ENV_37_2021_11_10_002216.jpg	1166	00:22:19	10/11/2021	53.679453	6.432506	726694.730	5953459.270
ENV_37	MARDUT1021_ENV_37_2021_11_10_002241.jpg	1167	00:22:44	10/11/2021	53.679397	6.432550	726697.950	5953453.200
ENV_37	MARDUT1021_ENV_37_2021_11_10_002258.jpg	1168	00:23:02	10/11/2021	53.679360	6.432570	726699.490	5953449.140
ENV_37	MARDUT1021_ENV_37_2021_11_10_002317.jpg	1169	00:23:20	10/11/2021	53.679328	6.432591	726701.020	5953445.591
ENV_37	MARDUT1021_ENV_37_2021_11_10_002335.jpg	1170	00:23:39	10/11/2021	53.679287	6.432627	726703.620	5953441.230
ENV_37	MARDUT1021_ENV_37_2021_11_10_002354.jpg	1171	00:23:57	10/11/2021	53.679250	6.432651	726705.440	5953437.191
ENV_37	MARDUT1021_ENV_37_2021_11_10_002414.jpg	1172	00:24:17	10/11/2021	53.679204	6.432682	726707.740	5953432.180
ENV_37	MARDUT1021_ENV_37_2021_11_10_002433.jpg	1173	00:24:37	10/11/2021	53.679159	6.432711	726709.900	5953427.170
ENV_37	MARDUT1021_ENV_37_2021_11_10_002504.jpg	1174	00:25:07	10/11/2021	53.679087	6.432761	726713.570	5953419.370
ENV_37	MARDUT1021_ENV_37_2021_11_10_002531.jpg	1175	00:25:34	10/11/2021	53.679027	6.432785	726715.470	5953412.770
ENV_37	MARDUT1021_ENV_37_2021_11_10_002544.jpg	1176	00:25:47	10/11/2021	53.679001	6.432794	726716.230	5953409.900
ENV_37	MARDUT1021_ENV_37_2021_11_10_002601.jpg	1177	00:26:04	10/11/2021	53.678961	6.432806	726717.185	5953405.510
ENV_37	MARDUT1021_ENV_37_2021_11_10_002634.jpg	1178	00:26:38	10/11/2021	53.678880	6.432860	726721.240	5953396.650
ENV_37	MARDUT1021_ENV_37_2021_11_10_002709.jpg	1179	00:27:12	10/11/2021	53.678806	6.432902	726724.400	5953388.530
ENV_37	MARDUT1021_ENV_37_2021_11_10_002726.jpg	1180	00:27:29	10/11/2021	53.678766	6.432942	726727.205	5953384.221
ENV_37	MARDUT1021_ENV_37_2021_11_10_002738.jpg	1181	00:27:42	10/11/2021	53.678735	6.432961	726728.670	5953380.819
ENV_37	MARDUT1021_ENV_37_2021_11_10_002744.jpg	1182	00:27:48	10/11/2021	53.678723	6.432968	726729.160	5953379.550
ENV_37	MARDUT1021_ENV_37_2021_11_10_002809.jpg	1183	00:28:12	10/11/2021	53.678672	6.433003	726731.780	5953374.000
ENV_37	MARDUT1021_ENV_37_2021_11_10_002851.jpg	1184	00:28:54	10/11/2021	53.678577	6.433066	726736.460	5953363.610
ENV_37	MARDUT1021_ENV_37_2021_11_10_002926.jpg	1185	00:29:29	10/11/2021	53.678495	6.433116	726740.170	5953354.690
ENV_37	MARDUT1021_ENV_37_2021_11_10_002940.jpg	1186	00:29:44	10/11/2021	53.678459	6.433128	726741.190	5953350.760
ENV_37	MARDUT1021_ENV_37_2021_11_10_003017.jpg	1187	00:30:20	10/11/2021	53.678390	6.433180	726744.950	5953343.240
ENV_37	MARDUT1021_ENV_37_2021_11_10_003035.jpg	1188	00:30:38	10/11/2021	53.678349	6.433196	726746.240	5953338.740
ENV_38	MARDUT1021_ENV_38_2021_11_09_133745.jpg	755	13:37:48	09/11/2021	53.674769	6.380295	723272.570	5952773.070
ENV_38	MARDUT1021_ENV_38_2021_11_09_133818.jpg	756	13:38:22	09/11/2021	53.674701	6.380258	723270.490	5952765.420

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_38	MARDUT1021_ENV_38_2021_11_09_133841.jpg	757	13:38:44	09/11/2021	53.674653	6.380254	723270.430	5952760.060
ENV_38	MARDUT1021_ENV_38_2021_11_09_133911.jpg	758	13:39:14	09/11/2021	53.674592	6.380254	723270.760	5952753.210
ENV_38	MARDUT1021_ENV_38_2021_11_09_133934.jpg	759	13:39:37	09/11/2021	53.674548	6.380244	723270.350	5952748.360
ENV_38	MARDUT1021_ENV_38_2021_11_09_134008.jpg	760	13:40:12	09/11/2021	53.674475	6.380228	723269.710	5952740.200
ENV_38	MARDUT1021_ENV_38_2021_11_09_134026.jpg	761	13:40:29	09/11/2021	53.674431	6.380239	723270.610	5952735.310
ENV_38	MARDUT1021_ENV_38_2021_11_09_134038.jpg	762	13:40:41	09/11/2021	53.674392	6.380236	723270.630	5952730.930
ENV_38	MARDUT1021_ENV_38_2021_11_09_134051.jpg	763	13:40:55	09/11/2021	53.674357	6.380234	723270.700	5952727.050
ENV_38	MARDUT1021_ENV_38_2021_11_09_134058.jpg	764	13:41:01	09/11/2021	53.674337	6.380228	723270.410	5952724.770
ENV_38	MARDUT1021_ENV_38_2021_11_09_134114.jpg	765	13:41:17	09/11/2021	53.674301	6.380221	723270.160	5952720.780
ENV_38	MARDUT1021_ENV_38_2021_11_09_134127.jpg	766	13:41:30	09/11/2021	53.674273	6.380215	723269.920	5952717.640
ENV_38	MARDUT1021_ENV_38_2021_11_09_134132.jpg	767	13:41:35	09/11/2021	53.674259	6.380213	723269.830	5952716.130
ENV_38	MARDUT1021_ENV_38_2021_11_09_134139.jpg	768	13:41:43	09/11/2021	53.674239	6.380211	723269.790	5952713.890
ENV_38	MARDUT1021_ENV_38_2021_11_09_134150.jpg	769	13:41:53	09/11/2021	53.674218	6.380214	723270.140	5952711.581
ENV_38	MARDUT1021_ENV_38_2021_11_09_134209.jpg	770	13:42:12	09/11/2021	53.674163	6.380213	723270.320	5952705.470
ENV_38	MARDUT1021_ENV_38_2021_11_09_134222.jpg	771	13:42:25	09/11/2021	53.674136	6.380223	723271.170	5952702.460
ENV_38	MARDUT1021_ENV_38_2021_11_09_134234.jpg	772	13:42:37	09/11/2021	53.674117	6.380232	723271.840	5952700.410
ENV_38	MARDUT1021_ENV_38_2021_11_09_134246.jpg	773	13:42:50	09/11/2021	53.674081	6.380237	723272.370	5952696.390
ENV_38	MARDUT1021_ENV_38_2021_11_09_134309.jpg	774	13:43:13	09/11/2021	53.674031	6.380217	723271.290	5952690.750
ENV_38	MARDUT1021_ENV_38_2021_11_09_134322.jpg	775	13:43:25	09/11/2021	53.674003	6.380212	723271.100	5952687.630
ENV_38	MARDUT1021_ENV_38_2021_11_09_134333.jpg	776	13:43:37	09/11/2021	53.673975	6.380207	723270.960	5952684.510
ENV_38	MARDUT1021_ENV_38_2021_11_09_134342.jpg	777	13:43:45	09/11/2021	53.673959	6.380208	723271.090	5952682.710
ENV_38	MARDUT1021_ENV_38_2021_11_09_134403.jpg	778	13:44:06	09/11/2021	53.673913	6.380198	723270.710	5952677.530
ENV_38	MARDUT1021_ENV_38_2021_11_09_134412.jpg	779	13:44:15	09/11/2021	53.673896	6.380192	723270.400	5952675.669
ENV_38	MARDUT1021_ENV_38_2021_11_09_134430.jpg	780	13:44:33	09/11/2021	53.673856	6.380191	723270.540	5952671.270
ENV_38	MARDUT1021_ENV_38_2021_11_09_134447.jpg	781	13:44:50	09/11/2021	53.673817	6.380199	723271.280	5952666.880
ENV_38	MARDUT1021_ENV_38_2021_11_09_134500.jpg	782	13:45:04	09/11/2021	53.673785	6.380196	723271.210	5952663.360
ENV_38	MARDUT1021_ENV_38_2021_11_09_134524.jpg	783	13:45:27	09/11/2021	53.673732	6.380183	723270.640	5952657.420
ENV_38	MARDUT1021_ENV_38_2021_11_09_134549.jpg	784	13:45:52	09/11/2021	53.673673	6.380181	723270.800	5952650.840

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_38	MARDUT1021_ENV_38_2021_11_09_134605.jpg	785	13:46:08	09/11/2021	53.673632	6.380165	723269.980	5952646.190
ENV_38	MARDUT1021_ENV_38_2021_11_09_134628.jpg	786	13:46:31	09/11/2021	53.673591	6.380155	723269.540	5952641.610
ENV_38	MARDUT1021_ENV_38_2021_11_09_134655.jpg	787	13:46:58	09/11/2021	53.673515	6.380145	723269.280	5952633.160
ENV_38	MARDUT1021_ENV_38_2021_11_09_134713.jpg	788	13:47:16	09/11/2021	53.673468	6.380139	723269.130	5952627.901
ENV_38	MARDUT1021_ENV_38_2021_11_09_134729.jpg	789	13:47:32	09/11/2021	53.673422	6.380131	723268.850	5952622.780
ENV_38	MARDUT1021_ENV_38_2021_11_09_134737.jpg	790	13:47:40	09/11/2021	53.673405	6.380132	723269.000	5952620.900
ENV_38	MARDUT1021_ENV_38_2021_11_09_134755.jpg	791	13:47:58	09/11/2021	53.673374	6.380134	723269.330	5952617.390
ENV_38	MARDUT1021_ENV_38_2021_11_09_134805.jpg	792	13:48:09	09/11/2021	53.673349	6.380130	723269.200	5952614.640
ENV_38	MARDUT1021_ENV_38_2021_11_09_134819.jpg	793	13:48:23	09/11/2021	53.673316	6.380130	723269.350	5952611.020
ENV_39	MARDUT1021_ENV_39_2021_11_09_131110.jpg	717	13:11:13	09/11/2021	53.679564	6.376988	723028.870	5953295.940
ENV_39	MARDUT1021_ENV_39_2021_11_09_131148.jpg	718	13:11:51	09/11/2021	53.679529	6.376947	723026.305	5953291.864
ENV_39	MARDUT1021_ENV_39_2021_11_09_131154.jpg	719	13:11:57	09/11/2021	53.679522	6.376939	723025.840	5953291.100
ENV_39	MARDUT1021_ENV_39_2021_11_09_131210.jpg	720	13:12:13	09/11/2021	53.679500	6.376904	723023.610	5953288.565
ENV_39	MARDUT1021_ENV_39_2021_11_09_131237.jpg	721	13:12:40	09/11/2021	53.679446	6.376841	723019.765	5953282.270
ENV_39	MARDUT1021_ENV_39_2021_11_09_131259.jpg	722	13:13:02	09/11/2021	53.679422	6.376807	723017.620	5953279.514
ENV_39	MARDUT1021_ENV_39_2021_11_09_131318.jpg	723	13:13:21	09/11/2021	53.679392	6.376776	723015.750	5953276.100
ENV_39	MARDUT1021_ENV_39_2021_11_09_131357.jpg	724	13:14:00	09/11/2021	53.679333	6.376695	723010.755	5953269.244
ENV_39	MARDUT1021_ENV_39_2021_11_09_131411.jpg	725	13:14:14	09/11/2021	53.679305	6.376669	723009.135	5953266.086
ENV_39	MARDUT1021_ENV_39_2021_11_09_131435.jpg	726	13:14:38	09/11/2021	53.679273	6.376629	723006.660	5953262.380
ENV_39	MARDUT1021_ENV_39_2021_11_09_131456.jpg	727	13:14:59	09/11/2021	53.679213	6.376572	723003.240	5953255.509
ENV_39	MARDUT1021_ENV_39_2021_11_09_131511.jpg	728	13:15:14	09/11/2021	53.679184	6.376512	722999.408	5953252.120
ENV_39	MARDUT1021_ENV_39_2021_11_09_131529.jpg	729	13:15:32	09/11/2021	53.679157	6.376469	722996.700	5953249.010
ENV_39	MARDUT1021_ENV_39_2021_11_09_131536.jpg	730	13:15:39	09/11/2021	53.679142	6.376451	722995.613	5953247.321
ENV_39	MARDUT1021_ENV_39_2021_11_09_131557.jpg	731	13:16:00	09/11/2021	53.679103	6.376394	722992.058	5953242.748
ENV_39	MARDUT1021_ENV_39_2021_11_09_131605.jpg	732	13:16:08	09/11/2021	53.679090	6.376372	722990.690	5953241.258
ENV_39	MARDUT1021_ENV_39_2021_11_09_131630.jpg	733	13:16:33	09/11/2021	53.679050	6.376298	722985.990	5953236.590
ENV_39	MARDUT1021_ENV_39_2021_11_09_131638.jpg	734	13:16:42	09/11/2021	53.679031	6.376267	722984.040	5953234.405
ENV_39	MARDUT1021_ENV_39_2021_11_09_131646.jpg	735	13:16:49	09/11/2021	53.679020	6.376252	722983.130	5953233.040

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_39	MARDUT1021_ENV_39_2021_11_09_131652.jpg	736	13:16:55	09/11/2021	53.679006	6.376236	722982.150	5953231.431
ENV_39	MARDUT1021_ENV_39_2021_11_09_131704.jpg	737	13:17:07	09/11/2021	53.678991	6.376215	722980.810	5953229.695
ENV_39	MARDUT1021_ENV_39_2021_11_09_131723.jpg	738	13:17:27	09/11/2021	53.678946	6.376169	722978.070	5953224.585
ENV_39	MARDUT1021_ENV_39_2021_11_09_131739.jpg	739	13:17:42	09/11/2021	53.678921	6.376145	722976.575	5953221.775
ENV_39	MARDUT1021_ENV_39_2021_11_09_131753.jpg	740	13:17:56	09/11/2021	53.678886	6.376106	722974.170	5953217.725
ENV_39	MARDUT1021_ENV_39_2021_11_09_131821.jpg	741	13:18:24	09/11/2021	53.678840	6.376036	722969.795	5953212.405
ENV_39	MARDUT1021_ENV_39_2021_11_09_131838.jpg	742	13:18:42	09/11/2021	53.678815	6.376001	722967.645	5953209.555
ENV_39	MARDUT1021_ENV_39_2021_11_09_131906.jpg	743	13:19:09	09/11/2021	53.678767	6.375944	722964.160	5953204.024
ENV_39	MARDUT1021_ENV_39_2021_11_09_131926.jpg	744	13:19:29	09/11/2021	53.678721	6.375890	722960.785	5953198.700
ENV_39	MARDUT1021_ENV_39_2021_11_09_131959.jpg	745	13:20:03	09/11/2021	53.678651	6.375803	722955.425	5953190.675
ENV_39	MARDUT1021_ENV_39_2021_11_09_132025.jpg	746	13:20:28	09/11/2021	53.678606	6.375738	722951.385	5953185.456
ENV_39	MARDUT1021_ENV_39_2021_11_09_132035.jpg	747	13:20:38	09/11/2021	53.678592	6.375722	722950.405	5953183.885
ENV_39	MARDUT1021_ENV_39_2021_11_09_132055.jpg	748	13:20:58	09/11/2021	53.678567	6.375686	722948.145	5953180.945
ENV_39	MARDUT1021_ENV_39_2021_11_09_132135.jpg	749	13:21:38	09/11/2021	53.678515	6.375616	722943.810	5953174.954
ENV_39	MARDUT1021_ENV_39_2021_11_09_132142.jpg	750	13:21:46	09/11/2021	53.678501	6.375595	722942.500	5953173.301
ENV_39	MARDUT1021_ENV_39_2021_11_09_132149.jpg	751	13:21:52	09/11/2021	53.678485	6.375576	722941.360	5953171.450
ENV_39	MARDUT1021_ENV_39_2021_11_09_132211.jpg	752	13:22:14	09/11/2021	53.678448	6.375529	722938.405	5953167.229
ENV_39	MARDUT1021_ENV_39_2021_11_09_132222.jpg	753	13:22:25	09/11/2021	53.678432	6.375517	722937.680	5953165.410
ENV_39	MARDUT1021_ENV_39_2021_11_09_132241.jpg	754	13:22:44	09/11/2021	53.678381	6.375435	722932.582	5953159.445
ENV_40	MARDUT1021_ENV_40_2021_11_09_173017.jpg	915	17:30:20	09/11/2021	53.674377	6.395041	724248.270	5952775.870
ENV_40	MARDUT1021_ENV_40_2021_11_09_173100.jpg	916	17:31:04	09/11/2021	53.674303	6.395091	724251.960	5952767.790
ENV_40	MARDUT1021_ENV_40_2021_11_09_173122.jpg	917	17:31:25	09/11/2021	53.674256	6.395144	724255.750	5952762.750
ENV_40	MARDUT1021_ENV_40_2021_11_09_173145.jpg	918	17:31:48	09/11/2021	53.674217	6.395174	724257.950	5952758.530
ENV_40	MARDUT1021_ENV_40_2021_11_09_173203.jpg	919	17:32:07	09/11/2021	53.674193	6.395196	724259.530	5952755.920
ENV_40	MARDUT1021_ENV_40_2021_11_09_173220.jpg	920	17:32:23	09/11/2021	53.674156	6.395231	724262.030	5952751.970
ENV_40	MARDUT1021_ENV_40_2021_11_09_173239.jpg	921	17:32:43	09/11/2021	53.674121	6.395259	724264.020	5952748.090
ENV_40	MARDUT1021_ENV_40_2021_11_09_173305.jpg	922	17:33:08	09/11/2021	53.674068	6.395322	724268.500	5952742.480
ENV_40	MARDUT1021_ENV_40_2021_11_09_173325.jpg	923	17:33:28	09/11/2021	53.674038	6.395343	724270.000	5952739.140

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_40	MARDUT1021_ENV_40_2021_11_09_173349.jpg	924	17:33:52	09/11/2021	53.673995	6.395401	724274.090	5952734.610
ENV_40	MARDUT1021_ENV_40_2021_11_09_173419.jpg	925	17:34:22	09/11/2021	53.673957	6.395416	724275.280	5952730.401
ENV_40	MARDUT1021_ENV_40_2021_11_09_173444.jpg	926	17:34:48	09/11/2021	53.673903	6.395446	724277.520	5952724.460
ENV_40	MARDUT1021_ENV_40_2021_11_09_173514.jpg	927	17:35:17	09/11/2021	53.673860	6.395464	724278.970	5952719.800
ENV_40	MARDUT1021_ENV_40_2021_11_09_173603.jpg	928	17:36:06	09/11/2021	53.673761	6.395568	724286.360	5952709.080
ENV_40	MARDUT1021_ENV_40_2021_11_09_173633.jpg	929	17:36:36	09/11/2021	53.673708	6.395633	724290.900	5952703.389
ENV_40	MARDUT1021_ENV_40_2021_11_09_173655.jpg	930	17:36:59	09/11/2021	53.673653	6.395674	724293.950	5952697.360
ENV_40	MARDUT1021_ENV_40_2021_11_09_173717.jpg	931	17:37:20	09/11/2021	53.673609	6.395715	724296.850	5952692.620
ENV_40	MARDUT1021_ENV_40_2021_11_09_173744.jpg	932	17:37:47	09/11/2021	53.673543	6.395776	724301.280	5952685.460
ENV_40	MARDUT1021_ENV_40_2021_11_09_173815.jpg	933	17:38:18	09/11/2021	53.673488	6.395821	724304.530	5952679.470
ENV_40	MARDUT1021_ENV_40_2021_11_09_173839.jpg	934	17:38:43	09/11/2021	53.673426	6.395890	724309.410	5952672.860
ENV_40	MARDUT1021_ENV_40_2021_11_09_173902.jpg	935	17:39:05	09/11/2021	53.673376	6.395948	724313.500	5952667.510
ENV_40	MARDUT1021_ENV_40_2021_11_09_173919.jpg	936	17:39:22	09/11/2021	53.673347	6.395979	724315.710	5952664.350
ENV_40	MARDUT1021_ENV_40_2021_11_09_173942.jpg	937	17:39:45	09/11/2021	53.673299	6.396030	724319.340	5952659.190
ENV_40	MARDUT1021_ENV_40_2021_11_09_174007.jpg	938	17:40:10	09/11/2021	53.673232	6.396102	724324.440	5952651.910
ENV_40	MARDUT1021_ENV_40_2021_11_09_174027.jpg	939	17:40:31	09/11/2021	53.673191	6.396126	724326.210	5952647.460
ENV_40	MARDUT1021_ENV_40_2021_11_09_174039.jpg	940	17:40:43	09/11/2021	53.673167	6.396142	724327.440	5952644.810
ENV_41	MARDUT1021_ENV_41_2021_11_09_182003.jpg	941	18:20:06	09/11/2021	53.675809	6.404634	724874.070	5952965.480
ENV_41	MARDUT1021_ENV_41_2021_11_09_182016.jpg	942	18:20:19	09/11/2021	53.675774	6.404628	724873.840	5952961.541
ENV_41	MARDUT1021_ENV_41_2021_11_09_182053.jpg	943	18:20:56	09/11/2021	53.675683	6.404641	724875.220	5952951.460
ENV_41	MARDUT1021_ENV_41_2021_11_09_182121.jpg	944	18:21:23	09/11/2021	53.675621	6.404642	724875.620	5952944.600
ENV_41	MARDUT1021_ENV_41_2021_11_09_182202.jpg	945	18:22:04	09/11/2021	53.675521	6.404631	724875.410	5952933.440
ENV_41	MARDUT1021_ENV_41_2021_11_09_182221.jpg	946	18:22:23	09/11/2021	53.675479	6.404620	724874.920	5952928.710
ENV_41	MARDUT1021_ENV_41_2021_11_09_182308.jpg	947	18:23:11	09/11/2021	53.675362	6.404586	724873.250	5952915.570
ENV_41	MARDUT1021_ENV_41_2021_11_09_182330.jpg	948	18:23:32	09/11/2021	53.675315	6.404571	724872.560	5952910.330
ENV_41	MARDUT1021_ENV_41_2021_11_09_182358.jpg	949	18:24:00	09/11/2021	53.675260	6.404549	724871.400	5952904.190
ENV_41	MARDUT1021_ENV_41_2021_11_09_182445.jpg	950	18:24:47	09/11/2021	53.675157	6.404519	724869.920	5952892.590
ENV_41	MARDUT1021_ENV_41_2021_11_09_182454.jpg	951	18:24:57	09/11/2021	53.675136	6.404510	724869.480	5952890.270

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_41	MARDUT1021_ENV_41_2021_11_09_182502.jpg	952	18:25:04	09/11/2021	53.675125	6.404504	724869.130	5952888.980
ENV_41	MARDUT1021_ENV_41_2021_11_09_182535.jpg	953	18:25:37	09/11/2021	53.675056	6.404465	724866.890	5952881.230
ENV_41	MARDUT1021_ENV_41_2021_11_09_182557.jpg	954	18:25:59	09/11/2021	53.675014	6.404453	724866.360	5952876.460
ENV_41	MARDUT1021_ENV_41_2021_11_09_182635.jpg	955	18:26:37	09/11/2021	53.674932	6.404433	724865.470	5952867.320
ENV_41	MARDUT1021_ENV_41_2021_11_09_182707.jpg	956	18:27:10	09/11/2021	53.674852	6.404419	724864.960	5952858.349
ENV_41	MARDUT1021_ENV_41_2021_11_09_182746.jpg	957	18:27:49	09/11/2021	53.674755	6.404404	724864.510	5952847.490
ENV_41	MARDUT1021_ENV_41_2021_11_09_182836.jpg	958	18:28:38	09/11/2021	53.674630	6.404378	724863.460	5952833.560
ENV_41	MARDUT1021_ENV_41_2021_11_09_182858.jpg	959	18:29:00	09/11/2021	53.674587	6.404367	724862.960	5952828.720
ENV_41	MARDUT1021_ENV_41_2021_11_09_182937.jpg	960	18:29:39	09/11/2021	53.674482	6.404348	724862.240	5952817.010
ENV_41	MARDUT1021_ENV_41_2021_11_09_183010.jpg	961	18:30:12	09/11/2021	53.674412	6.404323	724860.980	5952809.100
ENV_41	MARDUT1021_ENV_41_2021_11_09_183027.jpg	962	18:30:29	09/11/2021	53.674371	6.404307	724860.150	5952804.560
ENV_41	MARDUT1021_ENV_41_2021_11_09_183047.jpg	963	18:30:50	09/11/2021	53.674324	6.404299	724859.850	5952799.310
ENV_41	MARDUT1021_ENV_41_2021_11_09_183101.jpg	964	18:31:03	09/11/2021	53.674296	6.404297	724859.870	5952796.180
ENV_41	MARDUT1021_ENV_41_2021_11_09_183121.jpg	965	18:31:23	09/11/2021	53.674245	6.404274	724858.610	5952790.381
ENV_41	MARDUT1021_ENV_41_2021_11_09_183200.jpg	966	18:32:02	09/11/2021	53.674180	6.404238	724856.630	5952783.090
ENV_41	MARDUT1021_ENV_41_2021_11_09_183247.jpg	967	18:32:49	09/11/2021	53.674070	6.404212	724855.440	5952770.739
ENV_41	MARDUT1021_ENV_41_2021_11_09_183304.jpg	968	18:33:06	09/11/2021	53.674036	6.404213	724855.750	5952766.940
ENV_42	MARDUT1021_ENV_42_2021_11_09_195133.jpg	1004	19:51:36	09/11/2021	53.673025	6.412566	725412.660	5952681.050
ENV_42	MARDUT1021_ENV_42_2021_11_09_195209.jpg	1005	19:52:11	09/11/2021	53.673089	6.412551	725411.330	5952688.040
ENV_42	MARDUT1021_ENV_42_2021_11_09_195240.jpg	1006	19:52:43	09/11/2021	53.673162	6.412540	725410.200	5952696.170
ENV_42	MARDUT1021_ENV_42_2021_11_09_195317.jpg	1007	19:53:19	09/11/2021	53.673227	6.412542	725410.020	5952703.410
ENV_42	MARDUT1021_ENV_42_2021_11_09_195343.jpg	1008	19:53:46	09/11/2021	53.673290	6.412530	725408.840	5952710.390
ENV_42	MARDUT1021_ENV_42_2021_11_09_195405.jpg	1009	19:54:08	09/11/2021	53.673335	6.412525	725408.310	5952715.390
ENV_42	MARDUT1021_ENV_42_2021_11_09_195437.jpg	1010	19:54:41	09/11/2021	53.673411	6.412526	725407.950	5952723.790
ENV_42	MARDUT1021_ENV_42_2021_11_09_195458.jpg	1011	19:55:01	09/11/2021	53.673458	6.412527	725407.790	5952729.070
ENV_42	MARDUT1021_ENV_42_2021_11_09_195525.jpg	1012	19:55:27	09/11/2021	53.673527	6.412526	725407.360	5952736.710
ENV_42	MARDUT1021_ENV_42_2021_11_09_195552.jpg	1013	19:55:55	09/11/2021	53.673590	6.412522	725406.750	5952743.760
ENV_42	MARDUT1021_ENV_42_2021_11_09_195621.jpg	1014	19:56:23	09/11/2021	53.673652	6.412531	725407.010	5952750.680

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_42	MARDUT1021_ENV_42_2021_11_09_195633.jpg	1015	19:56:35	09/11/2021	53.673671	6.412536	725407.200	5952752.730
ENV_42	MARDUT1021_ENV_42_2021_11_09_195659.jpg	1016	19:57:01	09/11/2021	53.673736	6.412553	725407.970	5952760.080
ENV_42	MARDUT1021_ENV_42_2021_11_09_195802.jpg	1017	19:58:04	09/11/2021	53.673863	6.412541	725406.520	5952774.080
ENV_42	MARDUT1021_ENV_42_2021_11_09_195827.jpg	1018	19:58:29	09/11/2021	53.673926	6.412526	725405.170	5952781.080
ENV_42	MARDUT1021_ENV_42_2021_11_09_195833.jpg	1019	19:58:36	09/11/2021	53.673936	6.412532	725405.520	5952782.180
ENV_42	MARDUT1021_ENV_42_2021_11_09_195901.jpg	1020	19:59:03	09/11/2021	53.674008	6.412533	725405.260	5952790.200
ENV_42	MARDUT1021_ENV_42_2021_11_09_195935.jpg	1021	19:59:38	09/11/2021	53.674079	6.412530	725404.680	5952798.120
ENV_42	MARDUT1021_ENV_42_2021_11_09_200017.jpg	1022	20:00:19	09/11/2021	53.674182	6.412525	725403.790	5952809.510
ENV_42	MARDUT1021_ENV_42_2021_11_09_200055.jpg	1023	20:00:57	09/11/2021	53.674249	6.412499	725401.670	5952816.930
ENV_42	MARDUT1021_ENV_42_2021_11_09_200119.jpg	1024	20:01:22	09/11/2021	53.674307	6.412513	725402.330	5952823.360
ENV_42	MARDUT1021_ENV_42_2021_11_09_200214.jpg	1025	20:02:16	09/11/2021	53.674406	6.412494	725400.550	5952834.360
ENV_42	MARDUT1021_ENV_42_2021_11_09_200234.jpg	1026	20:02:36	09/11/2021	53.674476	6.412513	725401.390	5952842.180
ENV_43	MARDUT1021_ENV_43_2021_11_09_220130.jpg	1080	22:01:33	09/11/2021	53.674682	6.418982	725827.460	5952885.640
ENV_43	MARDUT1021_ENV_43_2021_11_09_220156.jpg	1081	22:01:59	09/11/2021	53.674637	6.418949	725825.520	5952880.490
ENV_43	MARDUT1021_ENV_43_2021_11_09_220209.jpg	1082	22:02:13	09/11/2021	53.674605	6.418941	725825.170	5952876.940
ENV_43	MARDUT1021_ENV_43_2021_11_09_220232.jpg	1083	22:02:35	09/11/2021	53.674565	6.418915	725823.630	5952872.390
ENV_43	MARDUT1021_ENV_43_2021_11_09_220240.jpg	1084	22:02:43	09/11/2021	53.674548	6.418906	725823.120	5952870.470
ENV_43	MARDUT1021_ENV_43_2021_11_09_220308.jpg	1085	22:03:11	09/11/2021	53.674493	6.418891	725822.450	5952864.341
ENV_43	MARDUT1021_ENV_43_2021_11_09_220317.jpg	1086	22:03:20	09/11/2021	53.674478	6.418879	725821.710	5952862.670
ENV_43	MARDUT1021_ENV_43_2021_11_09_220343.jpg	1087	22:03:46	09/11/2021	53.674427	6.418834	725819.050	5952856.779
ENV_43	MARDUT1021_ENV_43_2021_11_09_220414.jpg	1088	22:04:17	09/11/2021	53.674364	6.418778	725815.690	5952849.630
ENV_43	MARDUT1021_ENV_43_2021_11_09_220437.jpg	1089	22:04:40	09/11/2021	53.674329	6.418737	725813.130	5952845.660
ENV_43	MARDUT1021_ENV_43_2021_11_09_220504.jpg	1090	22:05:07	09/11/2021	53.674265	6.418708	725811.570	5952838.420
ENV_43	MARDUT1021_ENV_43_2021_11_09_220515.jpg	1091	22:05:18	09/11/2021	53.674247	6.418696	725810.910	5952836.320
ENV_43	MARDUT1021_ENV_43_2021_11_09_220544.jpg	1092	22:05:48	09/11/2021	53.674185	6.418660	725808.810	5952829.410
ENV_43	MARDUT1021_ENV_43_2021_11_09_220618.jpg	1093	22:06:21	09/11/2021	53.674119	6.418622	725806.690	5952821.870
ENV_43	MARDUT1021_ENV_43_2021_11_09_220704.jpg	1094	22:07:07	09/11/2021	53.674011	6.418560	725803.135	5952809.675
ENV_43	MARDUT1021_ENV_43_2021_11_09_220740.jpg	1095	22:07:43	09/11/2021	53.673931	6.418494	725799.210	5952800.570

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_43	MARDUT1021_ENV_43_2021_11_09_220757.jpg	1096	22:08:01	09/11/2021	53.673893	6.418474	725798.130	5952796.290
ENV_43	MARDUT1021_ENV_43_2021_11_09_220839.jpg	1097	22:08:43	09/11/2021	53.673799	6.418429	725795.650	5952785.750
ENV_43	MARDUT1021_ENV_43_2021_11_09_220856.jpg	1098	22:08:58	09/11/2021	53.673768	6.418411	725794.620	5952782.160
ENV_43	MARDUT1021_ENV_43_2021_11_09_220916.jpg	1099	22:09:19	09/11/2021	53.673725	6.418377	725792.590	5952777.270
ENV_43	MARDUT1021_ENV_43_2021_11_09_220949.jpg	1100	22:09:53	09/11/2021	53.673652	6.418322	725789.390	5952769.070
ENV_43	MARDUT1021_ENV_43_2021_11_09_221048.jpg	1101	22:10:51	09/11/2021	53.673534	6.418261	725785.950	5952755.740
ENV_43	MARDUT1021_ENV_43_2021_11_09_221107.jpg	1102	22:11:11	09/11/2021	53.673491	6.418230	725784.190	5952750.830
ENV_43	MARDUT1021_ENV_43_2021_11_09_221128.jpg	1103	22:11:31	09/11/2021	53.673455	6.418204	725782.620	5952746.720
ENV_43	MARDUT1021_ENV_43_2021_11_09_221145.jpg	1104	22:11:48	09/11/2021	53.673408	6.418178	725781.140	5952741.470
ENV_43	MARDUT1021_ENV_43_2021_11_09_221225.jpg	1105	22:12:29	09/11/2021	53.673326	6.418157	725780.240	5952732.230
ENV_43	MARDUT1021_ENV_43_2021_11_09_221250.jpg	1106	22:12:54	09/11/2021	53.673267	6.418116	725777.830	5952725.560
ENV_43	MARDUT1021_ENV_43_2021_11_09_221338.jpg	1107	22:13:42	09/11/2021	53.673166	6.418040	725773.360	5952714.040
ENV_43	MARDUT1021_ENV_43_2021_11_09_221410.jpg	1108	22:14:14	09/11/2021	53.673099	6.418014	725772.000	5952706.550
ENV_43	MARDUT1021_ENV_43_2021_11_09_221441.jpg	1109	22:14:44	09/11/2021	53.673034	6.417980	725770.100	5952699.260
ENV_43	MARDUT1021_ENV_43_2021_11_09_221530.jpg	1110	22:15:33	09/11/2021	53.672931	6.417902	725765.490	5952687.490
ENV_44	MARDUT1021_ENV_44_2021_11_09_233438.jpg	1133	23:34:40	09/11/2021	53.675629	6.424334	726175.740	5953007.970
ENV_44	MARDUT1021_ENV_44_2021_11_09_233451.jpg	1134	23:34:52	09/11/2021	53.675604	6.424334	726175.900	5953005.200
ENV_44	MARDUT1021_ENV_44_2021_11_09_233531.jpg	1135	23:35:32	09/11/2021	53.675529	6.424270	726172.050	5952996.680
ENV_44	MARDUT1021_ENV_44_2021_11_09_233544.jpg	1136	23:35:45	09/11/2021	53.675513	6.424260	726171.510	5952994.850
ENV_44	MARDUT1021_ENV_44_2021_11_09_233606.jpg	1137	23:36:07	09/11/2021	53.675465	6.424223	726169.280	5952989.400
ENV_44	MARDUT1021_ENV_44_2021_11_09_233630.jpg	1138	23:36:31	09/11/2021	53.675417	6.424187	726167.185	5952983.955
ENV_44	MARDUT1021_ENV_44_2021_11_09_233723.jpg	1139	23:37:25	09/11/2021	53.675295	6.424104	726162.320	5952970.130
ENV_44	MARDUT1021_ENV_44_2021_11_09_233740.jpg	1140	23:37:41	09/11/2021	53.675272	6.424084	726161.130	5952967.510
ENV_44	MARDUT1021_ENV_44_2021_11_09_233742.jpg	1141	23:37:43	09/11/2021	53.675272	6.424082	726161.050	5952967.430
ENV_44	MARDUT1021_ENV_44_2021_11_09_233759.jpg	1142	23:38:01	09/11/2021	53.675240	6.424071	726160.490	5952963.900
ENV_44	MARDUT1021_ENV_44_2021_11_09_233816.jpg	1143	23:38:17	09/11/2021	53.675194	6.424043	726158.850	5952958.680
ENV_44	MARDUT1021_ENV_44_2021_11_09_233853.jpg	1144	23:38:54	09/11/2021	53.675117	6.423984	726155.370	5952949.901
ENV_44	MARDUT1021_ENV_44_2021_11_09_233912.jpg	1145	23:39:13	09/11/2021	53.675075	6.423951	726153.440	5952945.140

Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
ENV_44	MARDUT1021_ENV_44_2021_11_09_233952.jpg	1146	23:39:53	09/11/2021	53.675000	6.423893	726150.010	5952936.600
ENV_44	MARDUT1021_ENV_44_2021_11_09_234047.jpg	1147	23:40:48	09/11/2021	53.674870	6.423808	726145.050	5952921.920
ENV_44	MARDUT1021_ENV_44_2021_11_09_234105.jpg	1148	23:41:06	09/11/2021	53.674830	6.423785	726143.760	5952917.390
ENV_44	MARDUT1021_ENV_44_2021_11_09_234127.jpg	1149	23:41:29	09/11/2021	53.674793	6.423756	726142.090	5952913.160
ENV_44	MARDUT1021_ENV_44_2021_11_09_234156.jpg	1150	23:41:57	09/11/2021	53.674736	6.423727	726140.420	5952906.730
ENV_44	MARDUT1021_ENV_44_2021_11_09_234238.jpg	1151	23:42:40	09/11/2021	53.674637	6.423655	726136.250	5952895.530
ENV_44	MARDUT1021_ENV_44_2021_11_09_234306.jpg	1152	23:43:07	09/11/2021	53.674573	6.423610	726133.600	5952888.240
ENV_44	MARDUT1021_ENV_44_2021_11_09_234355.jpg	1153	23:43:56	09/11/2021	53.674473	6.423533	726129.050	5952876.880
ENV_44	MARDUT1021_ENV_44_2021_11_09_234441.jpg	1154	23:44:42	09/11/2021	53.674360	6.423484	726126.400	5952864.210
ENV_44	MARDUT1021_ENV_44_2021_11_09_234501.jpg	1155	23:45:02	09/11/2021	53.674325	6.423442	726123.850	5952860.190
ENV_44	MARDUT1021_ENV_44_2021_11_09_234504.jpg	1156	23:45:05	09/11/2021	53.674323	6.423438	726123.590	5952859.850
ENV_44	MARDUT1021_ENV_44_2021_11_09_234527.jpg	1157	23:45:28	09/11/2021	53.674279	6.423416	726122.340	5952854.950
ENV_44	MARDUT1021_ENV_44_2021_11_09_234541.jpg	1158	23:45:42	09/11/2021	53.674253	6.423402	726121.610	5952851.980

Appendix A2: Drop-down video positional Logs

Station	Date	Video Start Time (UTC)	Video Length	Video End Time (UTC)	No. of Videos	No. of Images	Video File Name	Depth (m)	Camera System	Freshwater Housing Height Setting	Distance Between Laser Points (cm)	FOCI/OSPAR present (excluding reef)	Potential Annex I reef?	Camera Time Offset	Notes
ENV_20	11/11/2021	16:07:50	00:10:37	16:18:27	2	31	MARDUT1021_ENV_20_2021_11_11_160727, MARDUT1021_ENV_20_2021_11_11_161729	23.4	SubC Imaging PLE System	High	10	N	N	00:00:23	Rippled sand with shells. Occasional boulders with plumose anemones. Occasional gravel. Poor visibility.
ENV_28	05/11/2021	15:07:40	00:06:28	15:14:08	1	11	MARDUT1021_ENV_28_2021_11_05_150659	24.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Technical issue with USBL. Aborted transect and restarted. Rippled Sand with shells occasional cobbles and pebbles, sand mason worms, burrowing anemones.
ENV_28(2)	05/11/2021	15:22:50	00:08:47	15:31:37	1	26	MARDUT1021_ENV_28(2)_2021_11_05_152209	24.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled Sand with shells occasional cobbles and pebbles, sand mason worms, burrowing anemones.
ENV_29	09/11/2021	14:51:31	00:14:20	15:05:51	2	40	MARDUT1021_ENV_29_2021_11_09_145128, MARDUT1021_ENV_29_2021_11_09_150129	24.3	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with gravel and shells. Occasional boulders and cobbles with plumose anemones.
ENV_30	09/11/2021	15:42:30	00:15:04	15:57:34	2	31	MARDUT1021_ENV_30_2021_11_09_154227, MARDUT1021_ENV_30_2021_11_09_155229	23.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Muddy gravelly sand with ripples. Occasional boulders and cobbles with plumose anemones.
ENV_31	09/11/2021	14:17:05	00:10:48	14:27:53	2	26	MARDUT1021_ENV_31_2021_11_09_141702, MARDUT1021_ENV_31_2021_11_09_142704	23.4	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy shelly sand with burrowing anemones and sand mason worms.
ENV_32	09/11/2021	16:51:16	00:10:13	17:01:29	2	24	MARDUT1021_ENV_32_2021_11_09_165113, MARDUT1021_ENV_32_2021_11_09_170114	23.7	SubC Imaging PLE System	High	10	N		00:00:03	Rippled muddy sand. Burrowing anemones.
ENV_33	09/11/2021	18:58:51	00:11:34	19:10:25	2	35	MARDUT1021_ENV_33_2021_11_09_185848, MARDUT1021_ENV_33_2021_11_09_190850	25.0	SubC Imaging PLE System	High	10	N	Y	00:00:03	Rippled sand with shells. Burrowing anemones and sand mason worms. Occasional cobbles and boulders plus an area of higher density cobbles with plumose and sponges.

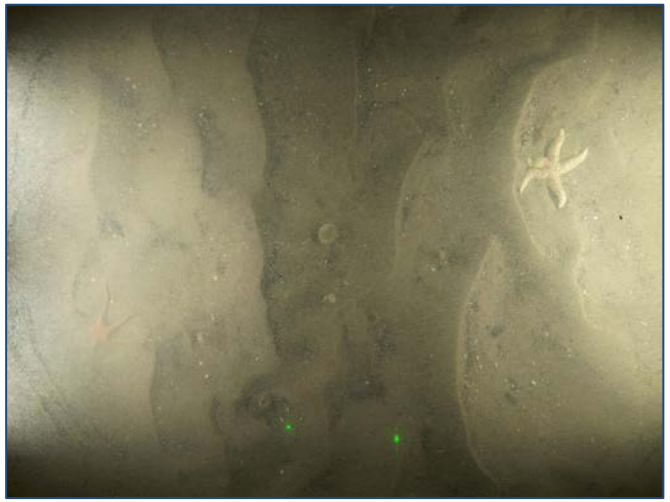
Station	Date	Video Start Time (UTC)	Video Length	Video End Time (UTC)	No. of Videos	No. of Images	Video File Name	Depth (m)	Camera System	Freshwater Housing Height Setting	Distance Between Laser Points (cm)	FOCI/OSPAR present (excluding reef)	Potential Annex I reef?	Camera Time Offset	Notes
ENV_34	09/11/2021	20:31:41	00:11:34	20:43:15	2	28	MARDUT1021_ENV_34_2021_11_09_203138, MARDUT1021_ENV_34_2021_11_09_204139	23.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy sand with shells. Occasional boulder. Sand mason worms and brittlestars.
ENV_35	09/11/2021	21:33:46	00:10:18	21:44:04	2	25	MARDUT1021_ENV_35_2021_11_09_213343, MARDUT1021_ENV_35_2021_11_09_214345	23.5	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy sand with shells. Sand mason worms, burrowing anemones and brittlestars
ENV_36	09/11/2021	22:46:21	00:10:16	22:56:37	2	22	MARDUT1021_ENV_36_2021_11_09_224618, MARDUT1021_ENV_36_2021_11_09_225620	21.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Ripply muddy sand with shells. Sand mason worms.
ENV_37	10/11/2021	00:18:16	00:12:25	00:30:41	2	30	MARDUT1021_ENV_37_2021_11_10_001813, MARDUT1021_ENV_37_2021_11_10_002815	21.9	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy sand. Burrowing anemones.
ENV_38	09/11/2021	13:37:25	00:10:55	13:48:20	2	39	MARDUT1021_ENV_38_2021_11_09_133722, MARDUT1021_ENV_38_2021_11_09_134723	23.5	SubC Imaging PLE System	High	10	N	N	00:00:03	Muddy sand with ripples.
ENV_39	09/11/2021	13:10:36	00:12:06	13:22:42	2	38	MARDUT1021_ENV_39_2021_11_09_131033, MARDUT1021_ENV_39_2021_11_09_132034	24.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled silty sand with shells, occasional cobble and gravel. Sand mason worms.
ENV_40	09/11/2021	17:29:31	00:11:09	17:40:40	2	26	MARDUT1021_ENV_40_2021_11_09_172928, MARDUT1021_ENV_40_2021_11_09_173930	22.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy sand. Burrowing anemones.
ENV_41	09/11/2021	18:20:01	00:13:03	18:33:04	2	28	MARDUT1021_ENV_41_2021_11_09_181958, MARDUT1021_ENV_41_2021_11_09_183000	22.1	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with burrowing anemones and sand mason worms.
ENV_42	09/11/2021	19:50:37	00:11:58	20:02:35	2	24	MARDUT1021_ENV_42_2021_11_09_195034, MARDUT1021_ENV_42_2021_11_09_200035	22.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy sand with shells. Burrowing anemones and sand mason worms.
ENV_43	09/11/2021	22:01:26	00:14:04	22:15:30	2	31	MARDUT1021_ENV_43_2021_11_09_220123, MARDUT1021_ENV_43_2021_11_09_221125	21.5	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy sand with shells. Occasional cobbles and gravel at the start. Sand mason worms and burrowing anemones.
ENV_44	09/11/2021	23:33:16	00:11:29	23:44:45	2	26	MARDUT1021_ENV_44_2021_11_09_233413, MARDUT1021_ENV_44_2021_11_09_234415	22.4	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled muddy sand. Burrowing anemones.

Appendix A3: Grab sampling positional logs

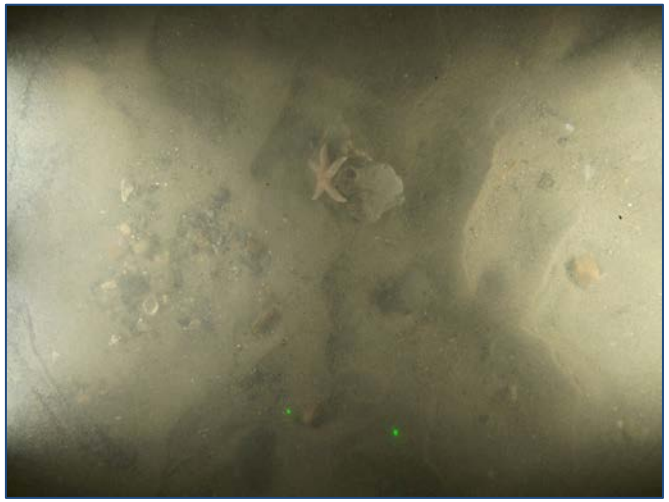
Station Details			Sampling Details					Positional Data						Sample Description			Photos			
Station I.D.	Attempt No.	Sampled Type (Post-Survey)	Method	Vessel	Personnel (Initials)	Water Depth (m)	Fix Number	Date	Time (UTC)	Target Easting	Target Northing	Sampled Easting	Sampled Northing	Coordinate System	Distance from Target (m)	Sample Volume (L)	Sediment Description (Folk)	Unreleased Sample	Released Sample	Sieved Sample	Notes
ENV_28	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23.9	14	2021-11-09	11:45:35	722694	5953622	722698	5953623	ED50	4	8	Muddy Gravelly Sand (mgS)	Y	Y	N	-
ENV_28	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23.9	15	2021-11-09	12:01:57	722694	5953622	722695	5953622	ED50	2	8	Muddy Gravelly Sand (mgS)	Y	Y	Y	Polychaeta
ENV_37	4	PC/MACA	Dual Van Veen	Geo Ocean III	MM	21.9	19	2021-11-10	01:31:35	726717	5953412	726718	5953463	ED50	51	10	Sand (S)	Y	Y	Y	1st attempt failed due to mason worms in jaws, 2nd attempt failed due to shells in jaws, 3rd attempt failed due to shells in jaws ...move station 50m north- good sample. *Lanice conchilega*.
ENV_37	3	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	21.9	23	2021-11-10	02:12:31	726717	5953412	726712	5953463	ED50	51	5	Gravelly Sand (gS)	Y	Y	Y	1st attempt failed due to stone in jaws, 2nd attempt failed due to mason worms in jaws. *Lanice conchilega*, Polychaeta.
ENV_36	1	PC/MACA	Dual Van Veen	Geo Ocean III	MM	22.9	24	2021-11-10	02:45:43	726362	5953211	726360	5953212	ED50	2	7	Sand (S)	Y	Y	Y	sand fine sediment, *Lanice conchilega*
ENV_36	1	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	22.9	25	2021-11-10	03:12:07	726362	5953211	726359	5953213	ED50	3	7	Sand (S)	Y	Y	Y	fine sand sediment shells, *Lanice conchilega*, Crustacea
ENV_44	3	PC/MACA	Dual Van Veen	Geo Ocean III	MM	22.2	28	2021-11-10	03:54:17	726134	5952885	726132	5952885	ED50	2	5	Sand (S)	Y	Y	Y	1st attempt <2 l. *Lanice conchilega*, Spatangoida
ENV_44	1	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	22.2	29	2021-11-10	05:02:19	726134	5952885	726122	5952885	ED50	12	5	Sandy Mud (sM)	Y	Y	Y	fine sand, muddy. *Ophiura ophiura*, Polychaeta
ENV_43	2	PC/MACA	Dual Van Veen	Geo Ocean III	MM	22.0	31	2021-11-10	05:48:59	725775	5952715	725770	5952714	ED50	5	5	Sandy Mud (sM)	Y	Y	Y	1st attempt <2l, 2nd attempt good, fine sand & mud, *Lanice conchilega*, Spatangoida
ENV_43	1	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	22.1	32	2021-11-10	06:15:17	725775	5952715	725772	5952715	ED50	4	5	Sandy Mud (sM)	Y	Y	Y	fine sand, mud, *Lanice conchilega*, *Ophiura ophiura*, Pectinariidae
ENV_35	1	PC/MACA	Dual Van Veen	Geo Ocean III	MM	23.4	33	2021-11-10	06:55:39	725808	5953207	725803	5953206	ED50	4	7	Sand (S)	Y	Y	Y	fine sediment fragment shell, *Lanice conchilega*
ENV_35	1	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	23.4	34	2021-11-10	07:19:25	725808	5953207	725806	5953206	ED50	2	6	Sandy Gravel (sG)	Y	Y	Y	gravelly sand with sand mason worms, *Lanice conchilega*, Ophiuroidea
ENV_34	1	PC/MACA	Dual Van Veen	Geo Ocean III	MM	23.7	36	2021-11-10	07:58:27	725298	5953207	725297	5953208	ED50	1	5	Muddy Sand (mS)	Y	Y	Y	fine muddy sand
ENV_34	1	MACB	Dual Van Veen	Geo Ocean III	MM	23.7	35	2021-11-10	07:51:49	725298	5953207	725298	5953206	ED50	2	5	Muddy Sand (mS)	N	Y	Y	fine muddy sand
ENV_34	1	MACC	Dual Van Veen	Geo Ocean III	MM	23.7	37	2021-11-10	08:24:02	725298	5953207	725304	5953207	ED50	6	7	Muddy Sand (mS)	N	Y	Y	fine muddy sand, *Lanice conchilega*, Polychaeta
ENV_42	2	PC	Dual Van Veen	Geo Ocean III	MM	21.8	39	2021-11-10	09:07:36	725410	5952700	725413	5952699	ED50	3	5	Sandy Mud (sM)	Y	Y	Y	1st attempt <5l, muddy sand, dark sediment, smelly
ENV_42	3	MACA	Dual Van Veen	Geo Ocean III	MM	21.9	40	2021-11-10	09:22:00	725410	5952700	725411	5952701	ED50	1	6	Sandy Mud (sM)	N	Y	Y	1st and 2nd attempt < 5l, muddy sand, dark sediment, smelly. *Cylista sp.*, *Lanice conchilega.*
ENV_42	1	MACB	Dual Van Veen	Geo Ocean III	MM	21.9	41	2021-11-10	09:26:40	725410	5952700	725411	5952701	ED50	1	6	Sandy Mud (sM)	Y	Y	Y	Muddy sand, dark sediment, smelly. Bivalvia, *Lanice conchilega*, *Ophiura ophiura,* Polychaeta
ENV_42	1	MACC	Dual Van Veen	Geo Ocean III	MM	21.9	42	2021-11-10	09:39:28	725410	5952700	725414	5952650	ED50	50	8	Sandy Mud (sM)	Y	Y	Y	Station moved 50 m to the south. *Lanice conchilega*, Polychaeta
ENV_41	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24.0	43	2021-11-10	11:24:04	724865	5952851	724867	5952850	ED50	3	8	Muddy Sand (mS)	Y	Y	Y	*Lanice conchilega*
ENV_41	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24.0	44	2021-11-10	11:32:02	724865	5952851	724867	5952850	ED50	3	8	Muddy Sand (mS)	Y	Y	Y	Black layering in sediment.
ENV_33	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	21.0	45	2021-11-10	12:02:36	724757	5953171	724760	5953173	ED50	3	8	Muddy Sand (mS)	Y	Y	Y	Shelly. *Lanice conchilega*, Ophiuroidea
ENV_33	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	21.0	46	2021-11-10	12:13:38	724757	5953171	724758	5953172	ED50	1	8	Muddy Sand (mS)	Y	Y	Y	High density sand mason worms. Shelly. *Lanice conchilega*, Ophiuroidea, Polychaeta.
ENV_32	3	PC/MACA	Dual Van Veen	Geo Ocean III	KB	22.4	49	2021-11-10	12:47:54	724234	5953077	724233	5953080	ED50	4	8	Sandy Mud (sM)	Y	Y	Y	Black colour to sediment and annoxic smell. *Lanice conchilega*.
ENV_32	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	22.4	50	2021-11-10	13:06:54	724234	5953077	724234	5953079	ED50	2	8	Sandy Mud (sM)	Y	Y	Y	Black colour to sediment and annoxic smell. *Cylista sp.*, Polychaeta.
ENV_40	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23.2	51	2021-11-10	13:35:08	724291	5952706	724292	5952706	ED50	1	8	Sandy Mud (sM)	Y	Y	Y	*Lanice conchilega,* Polychaeta
ENV_40	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23.2	52	2021-11-10	13:48:48	724291	5952706	724289	5952705	ED50	1	8	Sandy Mud (sM)	Y	Y	Y	Clumps of clay/mud, *Lanice conchilega*, Polychaeta
ENV_30	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24.0	53	2021-11-10	14:22:11	724151	5953716	724151	5953716	ED50	0	8	Muddy Sandy Gravel (msG)	Y	Y	Y	Shelly
ENV_30	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24.0	54	2021-11-10	14:34:41	724151	5953716	724150	5953716	ED50	1	8	Muddy Gravelly Sand (mgS)	Y	Y	Y	Shelly
ENV_29	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	21.5	55	2021-11-10	15:10:39	723749	5953719	723747	5953720	ED50	3	8	Muddy Gravelly Sand (mgS)	Y	Y	Y	*Lanice conchilega*, Polychaeta
ENV_29	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	21.5	56	2021-11-10	15:21:11	723749	5953719	723749	5953721	ED50	2	8	Sandy Gravelly Mud (sgM)	Y	N	Y	-
ENV_31	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	22.6	57	2021-11-10	16:05:49	723784	5953009	723783	5953011	ED50	2	6	Sandy Mud (sM)	Y	Y	Y	Polychaeta
ENV_31	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	22.6	58	2021-11-10	17:03:31	723784	5953009	723783	5953010	ED50	2	7	Sandy Mud (sM)	Y	Y	Y	Polychaeta

Station Details			Sampling Details						Positional Data						Sample Description			Photos			
Station I.D.	Attempt No.	Sampled Type (Post-Survey)	Method	Vessel	Personnel (Initials)	Water Depth (m)	Fix Number	Date	Time (UTC)	Target Easting	Target Northing	Sampled Easting	Sampled Northing	Coordinate System	Distance from Target (m)	Sample Volume (L)	Sediment Description (Folk)	Unreleased Sample	Released Sample	Sieved Sample	Notes
ENV_38	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23.4	59	2021-11-10	17:23:47	723270	5952703	723270	5952702	ED50	1	7	Sand (S)	Y	Y	Y	-
ENV_38	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23.4	60	2021-11-10	17:40:01	723270	5952703	723269	5952702	ED50	2	7	Sand (S)	Y	Y	Y	-
ENV_39	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24.0	61	2021-11-10	18:09:59	722979	5953224	722977	5953224	ED50	2	8	Muddy Sand (mS)	Y	Y	Y	*Lanice conchilega*
ENV_39	1	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24.0	62	2021-11-10	18:21:55	722979	5953224	722978	5953224	ED50	0	5	Muddy Sand (mS)	Y	Y	Y	*Cylista sp.*, *Lanice conchilega*, Spatangoida
ENV_20	1	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23.6	96	2021-11-11	17:08:55	725295	5953419	725293	5953419	ED50	2	8	Gravelly Muddy Sand (gmS)	Y	Y	Y	-
ENV_20	4	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23.8	100	2021-11-11	17:41:23	725295	5953419	725334	5953450	ED50	50	8	Gravelly Muddy Sand (gmS)	Y	Y	Y	All 3 attempts gravel caught in jaws. Moved station 50 m.

Appendix B. Selection of Sample and Seabed Photographs



Fix: 1191 E: 725357.0 N: 5953464.5 Depth: 23.7 m



Fix: 1200 E: 725317.5 N: 5953439.7 Depth: 23.8 m

Station: ENV 20

Image 1: MARDUT1021_ENV_20_2021_11_11_160845

Sediment Description: Rippled coarse sand with shell fragments and pebbles

Faunal Description: *Asterias rubens*; *Cylista* sp.; *Ophiura ophiura*; Ophiuroidea.

Image 2: MARDUT1021_ENV_20_2021_11_11_161151

Sediment Description: Rippled coarse sand with shell fragments, few pebbles and cobbles

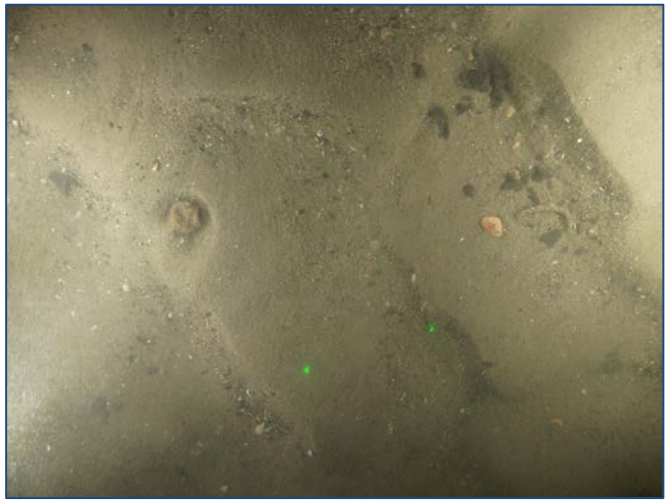
Faunal Description: *Asterias rubens*; *Lanice conchilega*; Ophiuroidea

Fix: 96 E: 725293.1 N: 5953418.8 Depth: 23.6 m

Fix: 96 E: 725293.1 N: 5953418.8 Depth: 23.6 m

Station: ENV 20
Sample: MACA

Sediment Description: Gravelly Muddy Sand (gmS)
Faunal Description: No visible fauna



Fix: 17 E: 722673.6 N: 5953595.2 Depth: 24.0 m

Fix: 11 E: 722684.8 N: 5953609.5 Depth: 24.1 m

Station: ENV 28

Image 1: MARDUT1021_ENV_28(2)_2021_11_05_152427

Sediment Description: Rippled coarse sand with shell fragments and few pebbles

Faunal Description: *Cylista* sp.; *Lanice conchilega*

Image 2: MARDUT1021_ENV_28_2021_11_05_151231

Sediment Description: Rippled coarse sand with shell fragments and few pebbles

Faunal Description: Actinopterygii; *Lanice conchilega*

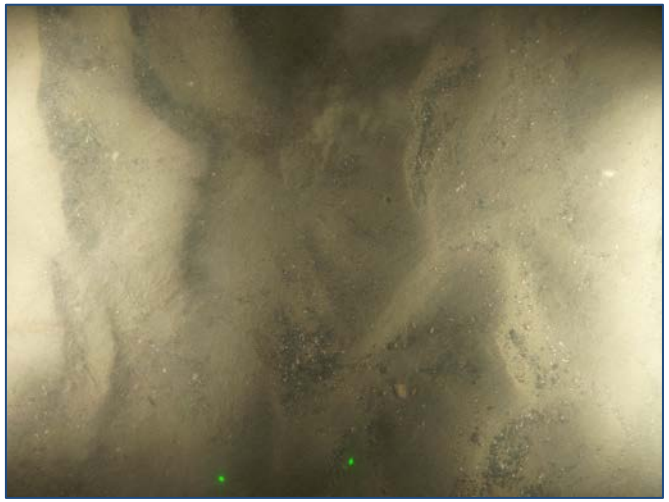
Fix: 14 E: 722697.9 N: 5953622.6 Depth: 23.9 m

Fix: 14 E: 722697.9 N: 5953622.6 Depth: 23.9 m

Station: ENV 28
Sample: MACB

Sediment Description: Muddy Gravelly Sand (mgS)
Faunal Description: No visible fauna

Fix: 281 E: 723776.1 N: 5953792.7 Depth: 24.3 m



Fix: 835 E: 723748.2 N: 5953719.2 Depth: 24.2 m

Station: ENV 29

Image 1: MARDUT1021_ENV_29_2021_11_09_145252

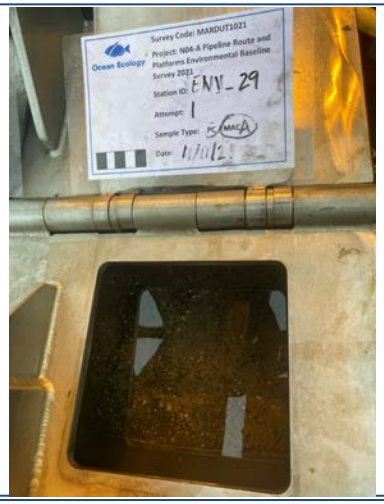
Sediment Description: Coarse sand with boulder

Faunal Description: *Cancer pagurus*; *Metridium dianthus*

Image 2: MARDUT1021_ENV_29_2021_11_09_145816

Sediment Description: Rippled coarse sand with shell fragments and pebbles

Faunal Description: Hydrozoa

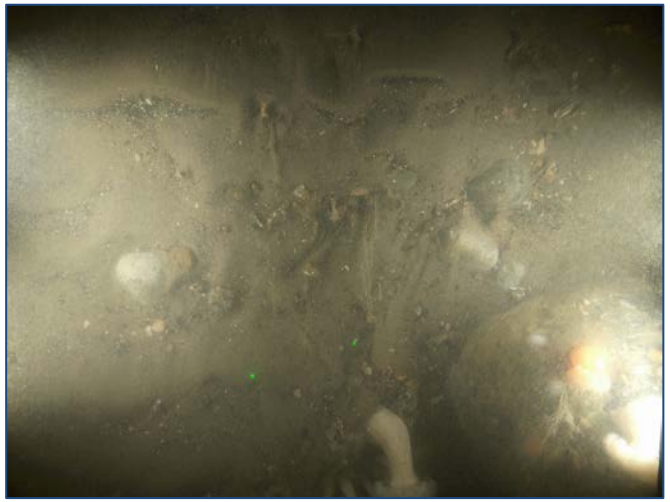


Fix: 55 E: 723746.6 N: 5953720.2 Depth: 21.5 m

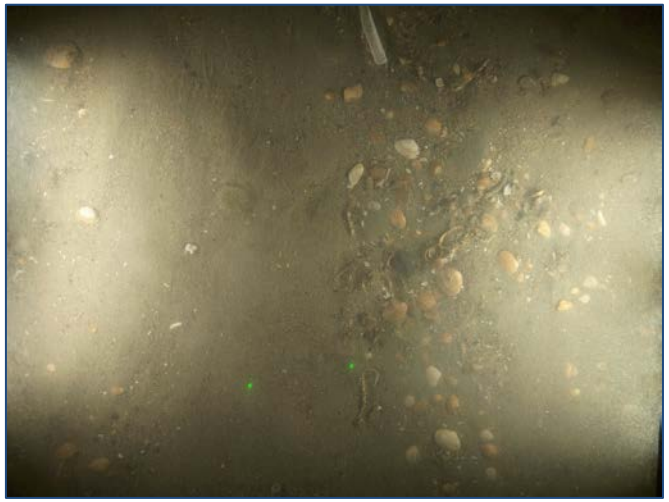
Fix: 55 E: 723746.6 N: 5953720.2 Depth: 21.5 m

Station: ENV 29
Sample: MACA

Sediment Description: Muddy Gravelly Sand (mgS)
Faunal Description: *Lanice conchilega*, Polychaeta



Fix: 861 E: 724044.3 N: 5953643.3 Depth: 24.1 m



Fix: 885 E: 724195.3 N: 5953746.3 Depth: 24.9 m

Station: ENV 30

Image 1: MARDUT1021_ENV_30_2021_11_09_154321

Sediment Description: Rippled coarse sand with shell fragments, few pebbles and scattered cobbles

Faunal Description: *Cylista* sp.; *Lanice conchilega*; *Metridium dianthus*; Plumulariidae

Image 2: MARDUT1021_ENV_30_2021_11_09_155536

Sediment Description: Rippled coarse sand with scattered shell fragments and few pebbles

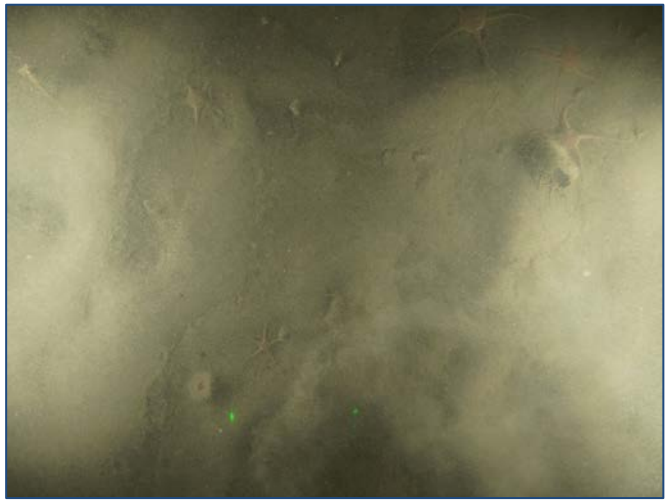
Faunal Description: *Cylista* sp.; Hydrozoa; *Lanice conchilega*

Fix: 53 E: 724151.3 N: 5953715.5 Depth: 26.2 m

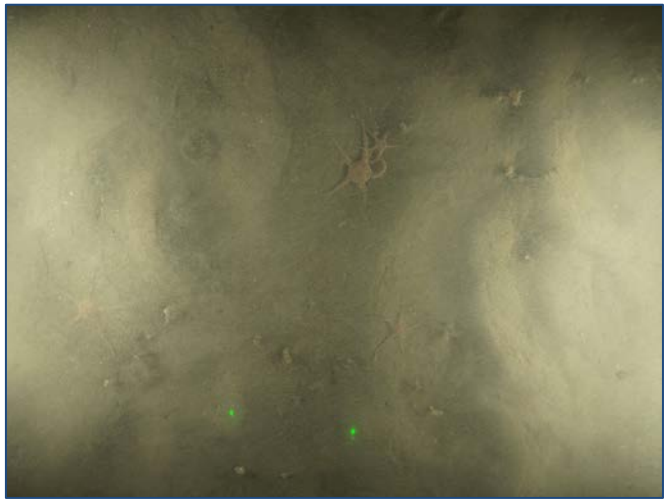
Fix: 53 E: 724151.3 N: 5953715.5 Depth: 26.2 m

Station: ENV 30
Sample: MACA

Sediment Description: Muddy Sandy Gravel (msG)
Faunal Description: No visible fauna



Fix: 809 E: 723786.9 N: 5953017.2 Depth: 23.4 m



Fix: 812 E: 723781.9 N: 5953003.3 Depth: 24.3 m

Station: ENV 31

Image 1: MARDUT1021_ENV_31_2021_11_09_142353

Sediment Description: Rippled sand with few shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*

Image 2: MARDUT1021_ENV_31_2021_11_09_142451

Sediment Description: Rippled sand with few shell fragments

Faunal Description: Cylista sp.; *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*

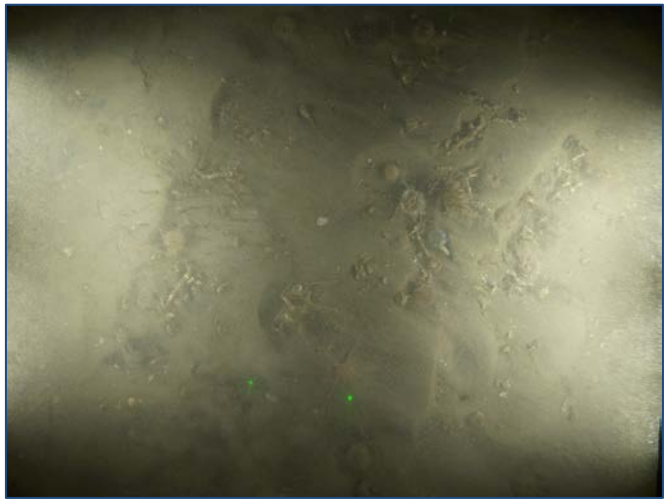
Fix: 57 E: 723783.0 N: 5953010.6 Depth: 26.0 m

Fix: 57 E: 723783 N: 5953010.6 Depth: 26.0 m

Station: ENV 31
Sample: MACA

Sediment Description: Sandy Mud (sM)
Faunal Description: Polychaeta

Fix: 901 E: 724227.5 N: 5953062 Depth: 24.1 m



Fix: 907 E: 724213.3 N: 5953021.2 Depth: 22 m

Station: ENV 32

Image 1: MARDUT1021_ENV_32_2021_11_09_165609

Sediment Description: Rippled sand with shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; Ophiuroidea

Image 2: MARDUT1021_ENV_32_2021_11_09_165850

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*

Fix: 49 E: 724232.9 N: 5953080.4 Depth: 24.0 m

Fix: 49 E: 724232.9 N: 5953080.4 Depth: 24.0 m

Station: ENV 32
Sample: MACA

Sediment Description: Sandy Mud (sM)
Faunal Description: *Lanice conchilega*

Fix: 971 E: 724765.5 N: 5953185.6 Depth: 24.2 m

Fix: 984 E: 724737.1 N: 5953118.9 Depth: 23.9 m

Station: ENV 33

Image 1: MARDUT1021_ENV_33_2021_11_09_190110

Sediment Description: Rippled coarse sand with scattered shell fragments

Faunal Description: *Lanice conchilega*; *Liocarcinus* sp.; *Ophiura ophiura*; Ophiuroidea

Image 2: MARDUT1021_ENV_33_2021_11_09_190554

Sediment Description: Coarse sand with scattered shell fragments and cobbles

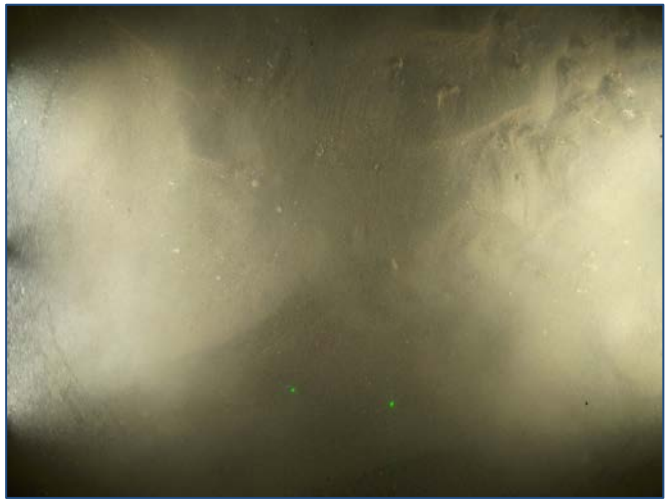
Faunal Description: Asteroidea; Caridea; *Cylista* sp.; Hydrozoa; *Lanice conchilega*; *Metridium dianthus*; Paguroidea; Plumulariidae

Fix: 45 E: 724760.2 N: 5953172.7 Depth: 23.6 m

Fix: 45 E: 724760.2 N: 5953172.7 Depth: 23.6 m

Station: ENV 33
Sample: MACA

Sediment Description: Muddy Sand (mS)
Faunal Description: *Lanice conchilega*, Ophiuroidea



Fix: 1036 E: 725305.3 N: 5953196.1 Depth: 23.9 m

Fix: 1046 E: 725276.7 N: 5953258.2 Depth: 23.6 m

Station: ENV 34

Image 1: MARDUT1021_ENV_34_2021_11_09_203614

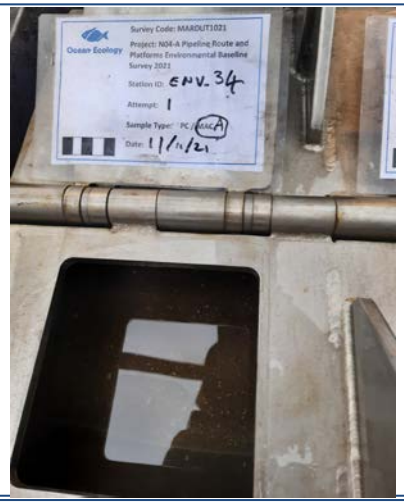
Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_34_2021_11_09_204109

Sediment Description: Rippled coarse sand with shell fragments and few pebbles

Faunal Description: *Lanice conchilega*

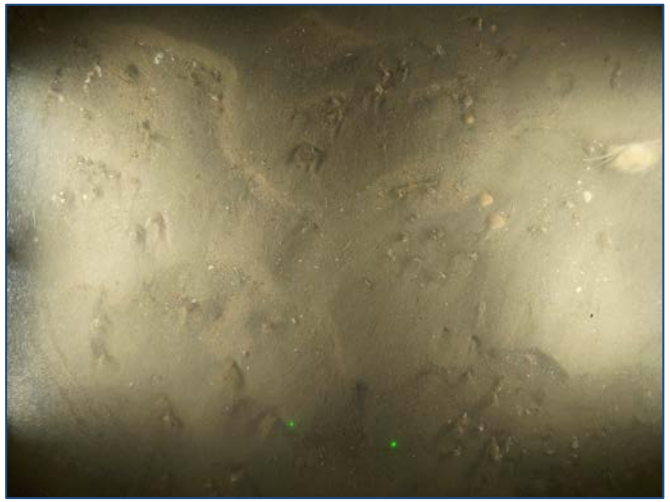


Fix: 36 E: 725296.8 N: 5953208.2 Depth: 24.2 m

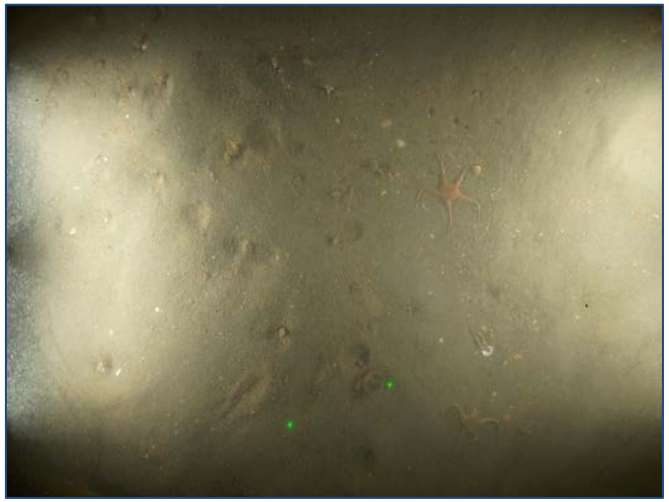
Fix: 36 E: 725296.8 N: 5953208.2 Depth: 24.2 m

Station: ENV 34
Sample: MACA

Sediment Description: Muddy Sand (mS)
Faunal Description: No visible fauna



Fix: 1064 E: 725808.3 N: 5953249.6 Depth: 23.3 m



Fix: 1075 E: 725810.2 N: 5953174.7 Depth: 22.7 m

Station: ENV 35

Image 1: MARDUT1021_ENV_35_2021_11_09_213732

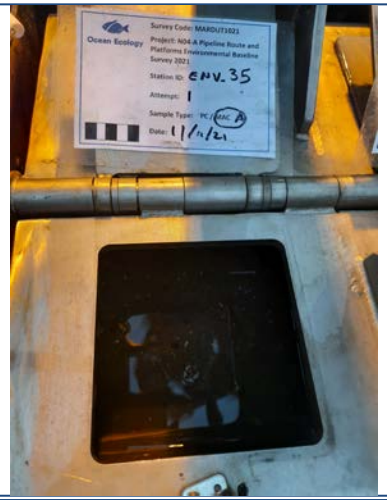
Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; Ophiuroidea; Portunidae

Image 2: MARDUT1021_ENV_35_2021_11_09_214225

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; *Ophiura ophiura*; Ophiuroidea; Portunidae



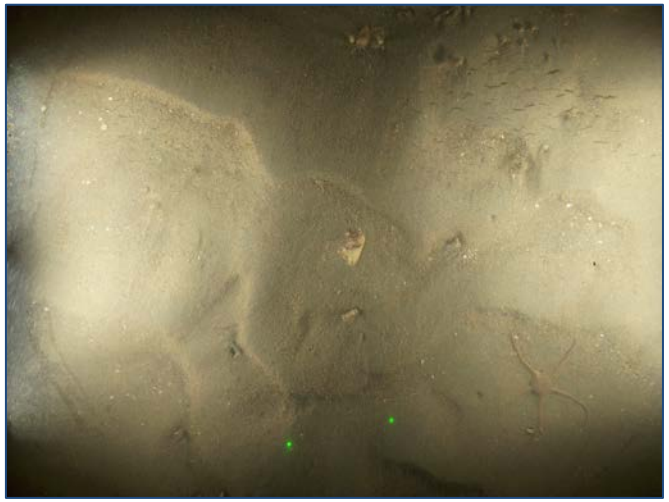
Fix: 33 E: 725803.4 N: 5953205.6 Depth: 23.9 m

Fix: 33 E: 725803.4 N: 5953205.6 Depth: 23.9 m

Station: ENV 35
Sample: MACA

Sediment Description: Sand (S)
Faunal Description: *Lanice conchilega*

Fix: 1121 E: 726361.9 N: 5953220.4 Depth: 22.6 m



Fix: 1130 E: 726362.8 N: 5953152.4 Depth: 23 m

Station: ENV 36

Image 1: MARDUT1021_ENV_36_2021_11_09_225124

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*; Ophiuroidea

Image 2: MARDUT1021_ENV_36_2021_11_09_225545

Sediment Description: Rippled coarse sand with shell fragments

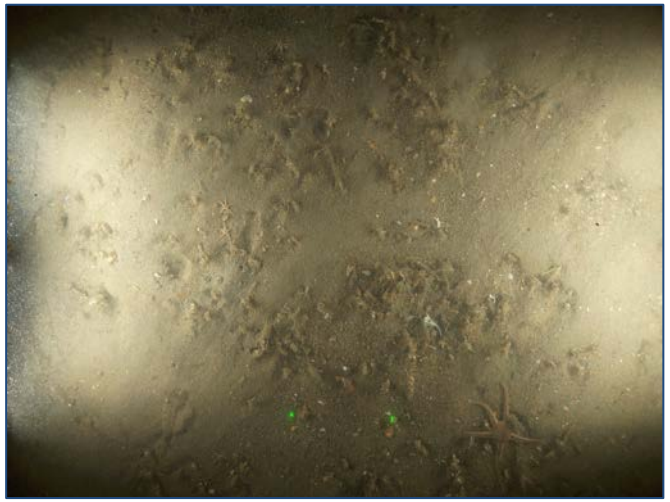
Faunal Description: Actinopterygii; *Lanice conchilega*; *Ophiura ophiura*; Portunidae

Fix: 24 E: 726360.2 N: 5953211.9 Depth: 22.8 m

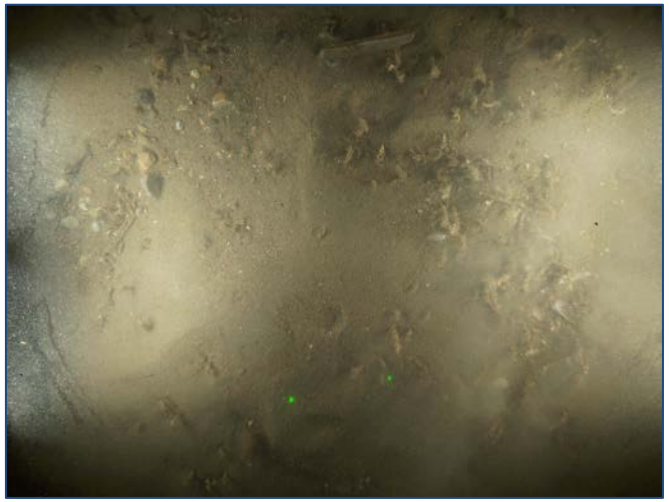
Fix: 24 E: 726360.2 N: 5953211.9 Depth: 22.8 m

Station: ENV 36
Sample: MACA

Sediment Description: Sand (S)
Faunal Description: *Lanice conchilega*



Fix: 1168 E: 726699.5 N: 5953449.1 Depth: 22.2 m



Fix: 1178 E: 726721.2 N: 5953396.6 Depth: 22.2 m

Station: ENV 37

Image 1: MARDUT1021_ENV_37_2021_11_10_002258

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*; Ophiuroidea

Image 2: MARDUT1021_ENV_37_2021_11_10_002634

Sediment Description: Rippled coarse sand with shell fragments and few pebbles

Faunal Description: *Cylista* sp.; *Lanice conchilega*

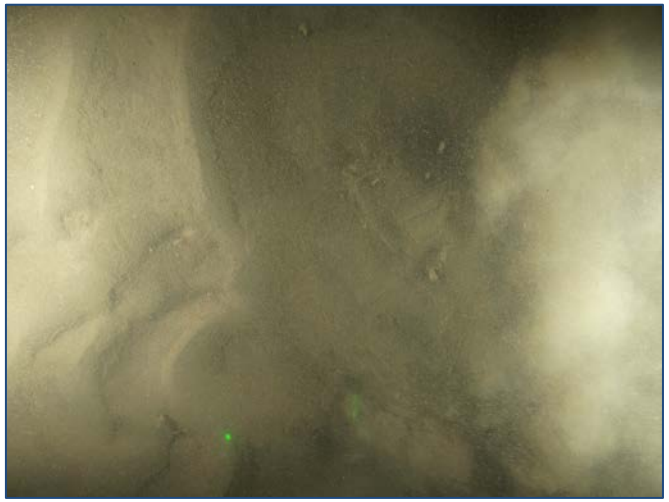
Fix: 19 E: 726717.6 N: 5953462.7 Depth: 24.9 m

Fix: 19 E: 726717.6 N: 5953462.7 Depth: 24.9 m

Station: ENV 37
Sample: MACA

Sediment Description: Sand (S)
Faunal Description: *Lanice conchilega*

Fix: 765 E: 723270.2 N: 5952720.8 Depth: 20.3 m



Fix: 774 E: 723271.3 N: 5952690.8 Depth: 20 m

Station: ENV 38

Image 1: MARDUT1021_ENV_38_2021_11_09_134114

Sediment Description: Rippled sand with rare shell fragments

Faunal Description: *Lanice conchilega*; *Ophiura ophiura*

Image 2: MARDUT1021_ENV_38_2021_11_09_134309

Sediment Description: Rippled sand with rare shell fragments

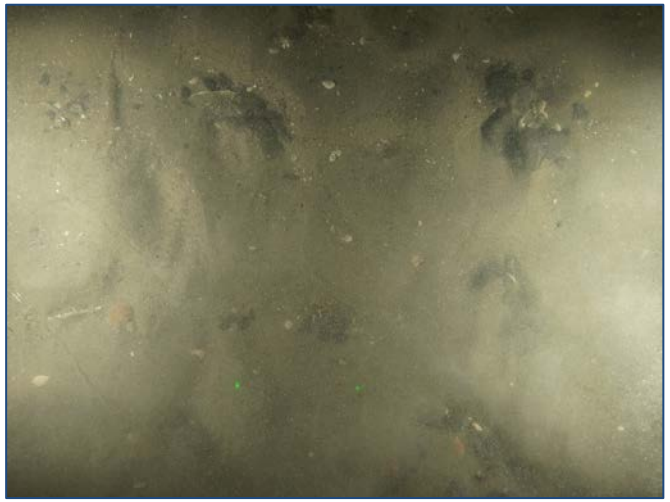
Faunal Description: *Lanice conchilega*

Fix: 59 E: 723269.5 N: 5952702.0 Depth: 23.9 m

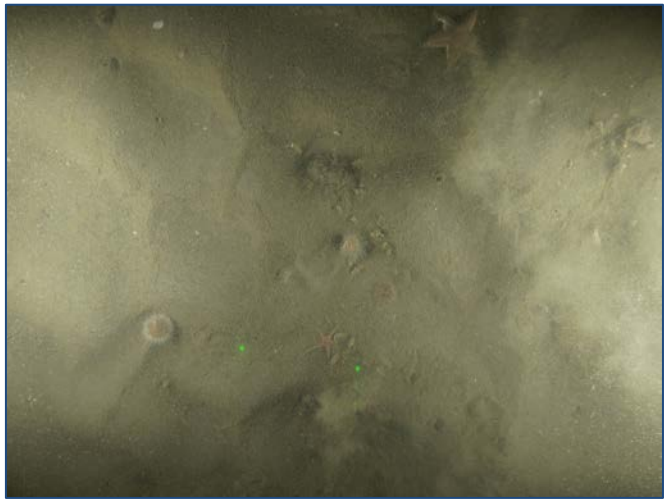
Fix: 59 E: 723269.5 N: 5952702.0 Depth: 23.9 m

Station: ENV 38
Sample: MACA

Sediment Description: Sand (S)
Faunal Description: No visible fauna



Fix: 717 E: 723028.9 N: 5953295.9 Depth: 24.4 m



Fix: 736 E: 722982.1 N: 5953231.4 Depth: 24.4 m

Station: ENV 39

Image 1: MARDUT1021_ENV_39_2021_11_09_131110

Sediment Description: Rippled coarse sand with shell fragments and few pebbles

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_39_2021_11_09_131652

Sediment Description: Rippled coarse sand with shell fragments

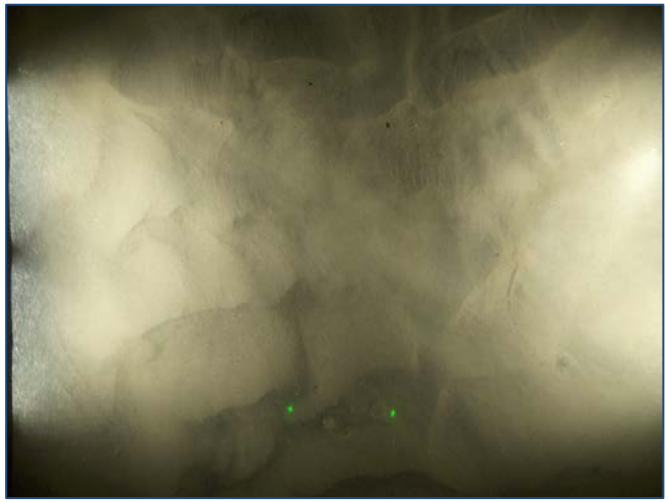
Faunal Description: *Astropecten irregularis*; *Cylista* sp.; *Lanice conchilega*; *Ophiura albida*

Fix: 61 E: 722977.2 N: 5953224.4 Depth: 23.6 m

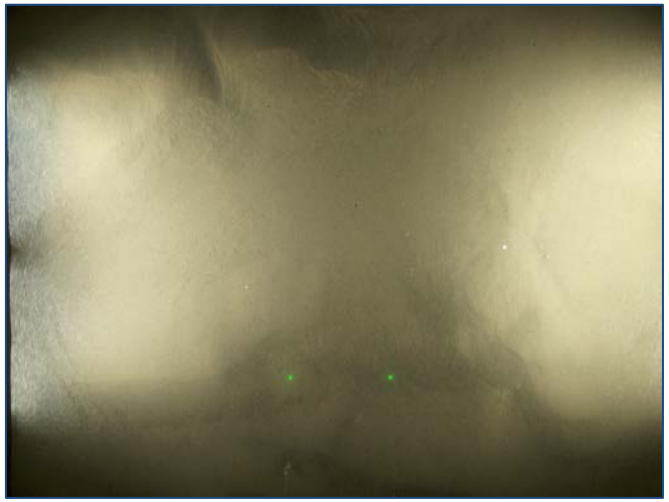
Fix: 61 E: 722977.2 N: 5953224.4 Depth: 23.6 m

Station: ENV 39
Sample: MACA

Sediment Description: Muddy Sand (mS)
Faunal Description: *Lanice conchilega*



Fix: 924 E: 724274.1 N: 5952734.6 Depth: 20.8 m



Fix: 934 E: 724309.4 N: 5952672.9 Depth: 23.3 m

Station: ENV 40

Image 1: MARDUT1021_ENV_40_2021_11_09_173349

Sediment Description: Rippled sand with rare shell fragments

Faunal Description: *Cylista* sp.; *Ophiura ophiura*

Image 2: MARDUT1021_ENV_40_2021_11_09_173839

Sediment Description: Rippled sand with rare shell fragments

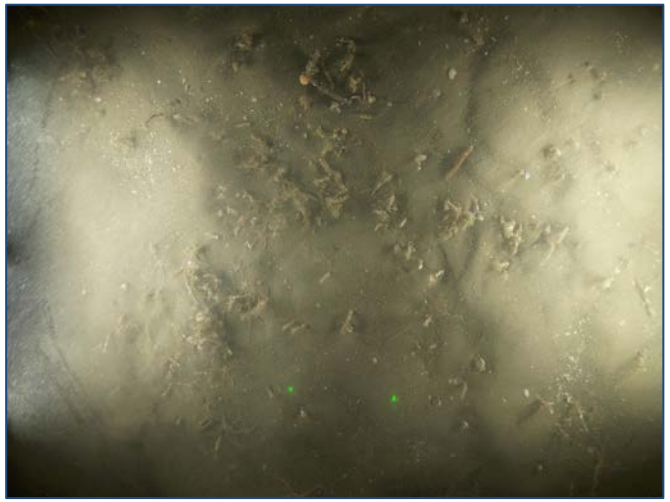
Faunal Description: *Lanice conchilega*

Fix: 51 E: 724292.0 N: 5952706.2 Depth: 21.0 m

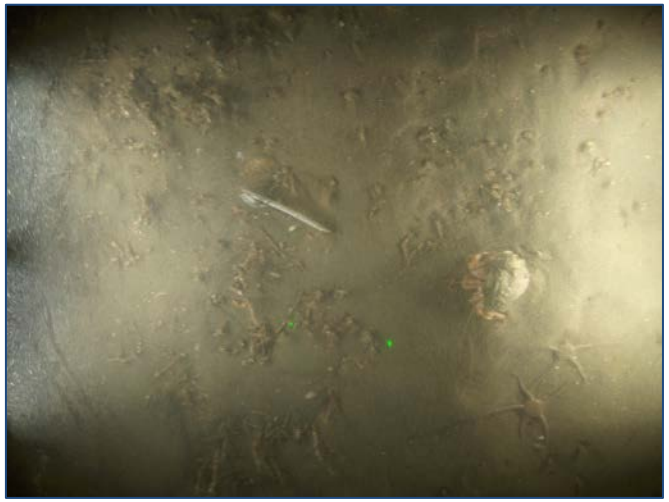
Fix: 51 E: 724292.0 N: 5952706.2 Depth: 21.0 m

Station: ENV 40
Sample: MACA

Sediment Description: Sandy Mud (sM)
Faunal Description: *Lanice conchilega*, Polychaeta



Fix: 942 E: 724873.8 N: 5952961.5 Depth: 23.2 m



Fix: 950 E: 724869.9 N: 5952892.6 Depth: 22.5 m

Station: ENV 41

Image 1: MARDUT1021_ENV_41_2021_11_09_182016

Sediment Description: Rippled sand with shell fragments

Faunal Description: *Asterias rubens*; *Cylista* sp.; *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*; Ophiuroidea

Image 2: MARDUT1021_ENV_41_2021_11_09_182445

Sediment Description: Rippled sand with shell fragments

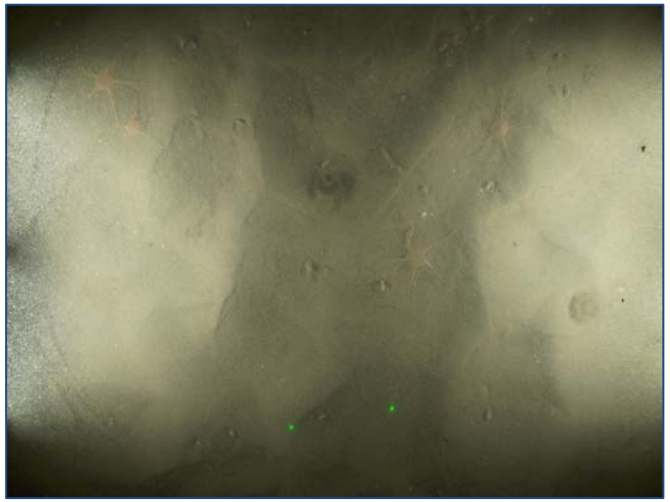
Faunal Description: *Lanice conchilega*; Ophiuroidea; Paguroidea

Fix: 43 E: 724867.4 N: 5952849.9 Depth: 21.5 m

Fix: 43 E: 724867.4 N: 5952849.9 Depth: 21.5 m

Station: ENV 41
Sample: MACA

Sediment Description: Muddy Sand (mS)
Faunal Description: *Lanice conchilega*



Fix: 1013 E: 725406.7 N: 5952743.8 Depth: 22.7 m

Fix: 1023 E: 725401.7 N: 5952816.9 Depth: 23.8 m

Station: ENV 42

Image 1: MARDUT1021_ENV_42_2021_11_09_195552

Sediment Description: Rippled sand with rare shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; *Ophiura ophiura*

Image 2: MARDUT1021_ENV_42_2021_11_09_200055

Sediment Description: Rippled sand with shell fragments

Faunal Description: *Lanice conchilega*

Fix: 39 E: 725412.7 N: 5952699.1 Depth: 23.5 m

Fix: 39 E: 725412.7 N: 5952699.1 Depth: 23.5 m

Station: ENV 42
Sample: MACA

Sediment description: Sandy Mud (sM)
Faunal Description: *Cylista* sp., *Lanice conchilega*

Fix: 1090 E: 725811.6 N: 5952838.4 Depth: 22.6 m

Fix: 1099 E: 725792.6 N: 5952777.3 Depth: 22.0 m

Station: ENV 43

Image 1: MARDUT1021_ENV_43_2021_11_09_220504

Sediment Description: Rippled sand and clay with shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*; Paguroidea

Image 2: MARDUT1021_ENV_43_2021_11_09_220916

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Cylista* sp.; *Lanice conchilega*; Lotidae; *Ophiura albida*; *Ophiura ophiura*

Fix: 31 E: 725770.1 N: 5952714.4 Depth: 21.9 m

Fix: 31 E: 725770.1 N: 5952714.4 Depth: 21.9 m

Station: ENV 43
Sample: MACA

Sediment Description: Sandy Mud (sM)
Faunal Description: *Lanice conchilega*, Spatangoida

Fix: 1142 E: 726160.5 N: 5952963.9 Depth: 22.4 m

Fix: 1152 E: 726133.6 N: 5952888.2 Depth: 21.9 m

Station: ENV 44

Image 1: MARDUT1021_ENV_44_2021_11_09_233759

Sediment Description: Rippled sand with shell fragments and few pebbles

Faunal Description: *Astropecten irregularis*; Caridea; *Cylista* sp.; *Lanice conchilega*; *Liocarcinus* sp.

Image 2: MARDUT1021_ENV_44_2021_11_09_234306

Sediment Description: Rippled sand with shell fragments

Faunal Description: Actinopterygii; Cylista sp.; *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*; Ophiuroidea

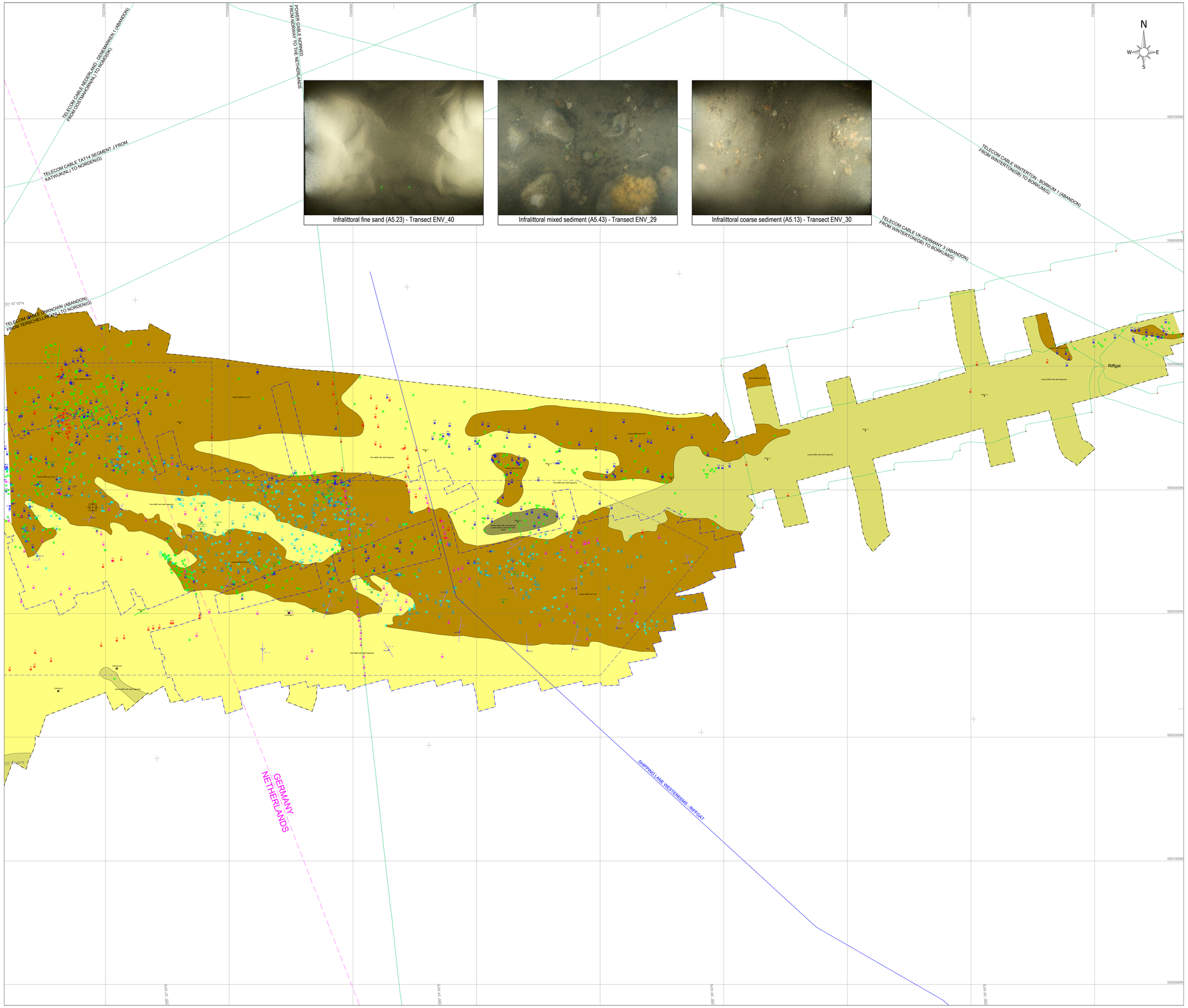
Fix: 28 E: 726131.8 N: 5952885.0 Depth: 22.6 m

Fix: 28 E: 726131.8 N: 5952885.0 Depth: 22.6 m

Station: ENV 44
Sample: MACA

Sediment Description: Sand (S)
Faunal Description: No visible fauna

Appendix C. Seabed Features Chart



LEGEND

- Proposed new location for N05-A Platform
- U.T.M. grid
- Geographical grid
- SCALE 1:10000
- 0 100 200 300 400 500 1000 meters
- 0 400 800 1600 3200 feet
- Survey Boundary
- Existing Infrastructure
- EEZ Boundary
- Shipping Lane
- Monopole location Riffgat

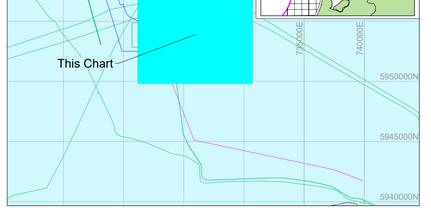
SEABED FEATERS:

- Side scan sonnar contact from 2019 survey. >0.3m (Height removed for clarity)
- 0.3 Side scan sonnar contact from 2019 survey with height in metres. >0.5m
- Side scan sonnar contact from 2021 survey. >0.3m (Height removed for clarity)
- 0.3 Side scan sonnar contact from 2021 survey with height in metres. >0.5m
- Magnetic anomaly from 2019 survey with anomaly size in nanoTeslas
- Magnetic anomaly from 2021 survey with anomaly size in nanoTeslas
- 1.4 x 0.8 x 0.3 Debris item from 2019 survey with dimensions (length x width x height) in meters
- 2.4x0.7x0.6 Debris item from 2021 survey with dimensions (length x width x height) in meters
- Linear debris from 2019 survey with length in metres
- Linear debris from 2021 survey with length in metres
- Camera transects from 2019 survey
- Camera transects from 2021 survey
- GRAB_F_12 Grab sample from 2019 survey with identification
- ENV_36 Grab sample from 2021 survey with identification
- Infralittoral fine sand (A5.23)
- Infralittoral coarse sediment (A5.13)
- Infralittoral coarse sediment (A5.13) with scattered areas of Infralittoral mixed sediment (A5.43)
- Infralittoral mixed sediment (A5.43)

ONE INFORMATION PANEL

1.	N05-A Proposed platform Location	721 896.00 mE 5 953 858.00 mN	53° 41' 06.322" N 06° 21' 36.970" E

LOCATION MAP



SURVEY EQUIPMENT

Positioning:	Fugro seastar 9205
Multibeam:	R2Sonic 2024
Motion sensor:	POS-MV OceanMaster
Sound velocity probe:	Valeport - Swift
Side scan sonar:	Edgetech - 4200
USBL:	Sonardyne Ranger 2
Magnetometer:	Geometrics - G882
Sub Bottom Profiler	Massa TR10750
Seismic source:	GSO 180 Sparker

SURVEY DATES

Geophysical acquisition (MBES, MAG, SSS, SBP):

Geo Ocean III: 20/10/2021 until 16/11/2021

GEODETIC INFORMATION

Horizontal datum:	European datum 1950 (ED 50)
Spheroid:	International 1924
Semi-major axis:	a = 6378388.00m
Semi-minor axis:	b = 6356911.95m
First eccentricity squared:	e2 = 0.006723
Inverse flattening:	1/f = 297.000
EPSG code:	23031
Projection:	UTM
Central meridian:	3° East
Latitude of origin:	0°
False easting:	500000.00m
False northing:	0.00m
Scale factor at central meridian:	0.9996
Units:	Metres
Vertical datum:	Lowest Astronomical Tide (LAT).

HYDROGRAPHIC SURVEY

N04-A Pipeline Route And Platform Surveys

N05a to Riffgat OWF

Cable Route Survey

ENVIRONMENTAL SEABED FEATURES CHART

Chart: 002/004	Scale: 1/10000	LAT

Drawing made by:

GEOXYZ
2 Route D'Arlon
Windhof Business center block A
L-8388 WINDHOF
Luxembourg

Client:

Oranje-Nassau Energie B.V.
UNStudio, 7th floor
Parnassusweg 815
1082 LZ Amsterdam (The Netherlands)

Tel: +31 20 535 41 00
Fax: +31 20 535 41 22

Issue no:	Date:	Description:	Drawn:	Checked:
00	16-11-2021	Preliminary Chart	CA	SC
01	30-11-2021	Draft Issue	CA	SC
02	08-12-2021	SSS contact interpretation updated / environmental sediment descriptions added	CA	SC
03	16-12-2021	Issued with Report	KMc	CA

ONE Dyas Drawing No.	N05A-7-50-0-72039-01	**GEOxyz Drawing No.**	NL4658H-553-DR-014

Appendix D. Summary of Faunal Observations

Stations	Animalia indeterminate 01	Animalia tube	Annelida - *Lanice conchilega*	Arthropoda – Atelecyclidae	Arthropoda - *Cancer pagurus*	Arthropoda - Caridea	Arthropoda - Decapoda	Arthropoda - *Homarus gammarus*	Arthropoda - *Liocarcinus* sp.	Arthropoda - Majidae	Arthropoda - Portunidae	Arthropoda - Paguroidea	Chordata - Actinopterygii	Chordata - *Agonus cataphractus*	Chordata - *Limanda limanda*	Chordata – Lotidae	Chordata - *Pholis gunnellus*	Chordata - Pleuronectiformes	Cnidaria - Anthozoa	Cnidaria - Actiniaria	Cnidaria - *Alcyonium digitatum*	Cnidaria - Certianthidae	Cnidaria – *Cylista* sp.	Cnidaria - Hydrozoa	Cnidaria - Plumulariidae	Cnidaria - *Metridium dianthus*	Cnidaria - Pennatulacea	Echinodermata - Asteroidea	Echinodermata - *Asterias rubens*	Echinodermata - *Astropecten irregularis*	Echinodermata - Ophiuroidea	Echinodermata - *Ophiura albida*	Echinodermata – *cf. Ophiura ophiura*	Faunal Turf	Mollusca - *Ensis* sp.	Mollusca - bivalve siphon	Porifera - *cf. Halichondria (Halichondria) panicea*	Porifera 01	Porifera 02
ENV_20			2					1											1				17		1	7		5	4		5	2	8	3			1	3	
ENV_28			2										1										1															
ENV_28(2)		5	13								1												11						1		1			4		1			
ENV_29			7		2															1			10	2		10		3	1	1	1			2			1		1
ENV_30			21				1				1		1										16	1	2	3			6		8	4		3			1	2	1
ENV_31			19						1	1	1							1					10						1		7	3	13	1					
ENV_32		2	16																				17							1	13	4	8	10					
ENV_33			25			2	1		2		2	4	1								2		27	5	4	11		8	7		17	3	14	5	1		3	6	3
ENV_34		1	25				1						1	1									9		1	2			1	1	11	7	20	7	1	1	1	1	1
ENV_35		3	24			1			2		2	1	4					1				1	12					1	1		19	14	20	4		1	1		2
ENV_36		2	22								1	1	4					2					13						3		17	12	18	4	1				
ENV_37	1	1	26			2					1	1	4		1							1	15						2	1	16	11	18	2					1
ENV_38			8																				2								4		11	1					
ENV_39			32							2	1		1	1				1	1				24						1	2	13	8	10	6	1			1	
ENV_40	1	1	17										1										5								4		12	1					
ENV_41		1	27								1	4	3				1						16						2		8	3	24	7		1			
ENV_42			19										2										11						1		6	2	16						
ENV_43		5	27								2	2	5			1							24						4		15	12	24	7				3	
ENV_44		1	26	2		5			1			1	5									1	22			2			4	1	14	7	18	2					1

Appendix E. Faunal Catalogue

Animalia indeterminate 01

Worm like

Animalia tube

Annelida – *Lanice conchilega*

Polychaete worm which makes a tube out of sand grains and shell fragments, which has a characteristic frayed end that protrudes above the sand.

Arthropoda – Atelecyclidae

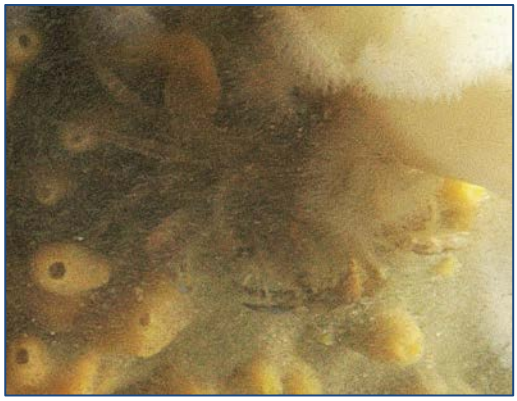
These crabs have smooth, rounded carapaces, typically with numerous sharp teeth around its edges. The chelipeds are rather short and robust.

Arthropoda – *Cancer pagurus*

Heavy, oval carapace, with piecrust edge. Massive black-tipped chelae.

Arthropoda - Caridea

Shrimp



Arthropoda – Decapoda

Small and crab like.

Arthropoda – *Homarus gammarus*

Large distinctive chelae of a common lobster.

Arthropoda – *Liocarcinus* sp.

Swimming crab with paddle shaped dactyls on the fifth pereopods. Curved rows of white spots on carapace.

Arthropoda – Majidae

Characterized by slender log pereopods. Carapace oval or pear shaped.

Arthropoda - Paguroidea

Hermit crab.

Arthropoda - Portunidae

Swimming crab with paddle shaped dactyls on the fifth pereopods

Chordata - Lotidae

Elongated fish with barbels.

Chordata – Actinopterygii

Indeterminate ray-finned fish.

Chordata – *Agonus cataphractus*

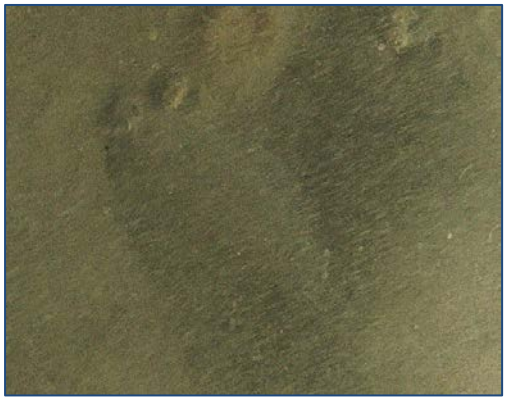
Wide, flattened, triangular head with an elongated, tapering body. This fish is completely covered in hard bony plates, that form lateral rows of sharp spines.

Chordata – *Limanda limanda*

Both eyes are on the right side of the body. The most characteristic feature is the lateral line, which is strongly arched. The pectoral fin is sometimes orange.

Chordata – cf. *Pholis gunnellus*

Elongate, laterally compressed body. A series of black spots, outlines in white are present along the base of the long dorsal fin.



Chordata - Pleuronectiformes

Indeterminate flatfish.

Chordata – cf. *Callionymus lyra*

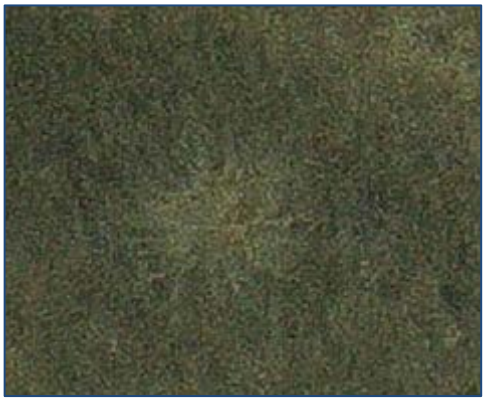
Broad and triangular head, with a longer snout and jutting lower jaw. Females and immature males are brown and lighter ventrally with a series of 6 brown blotches along the sides.

Cnidaria – Actiniaria

Indeterminate anemone

Cnidaria – *Alcyonium digitatum*

Mature colonies form thick, fleshy masses of irregular shape, typically of stout, finger-like lobe.



Cnidaria – Anthozoa

Indeterminate Anthozoa.

Cnidaria – Cerianthidae

Tube-dwelling anemone with two rings of tentacles.

Cnidaria – *Cylista* sp.

Burrowing anemone.

Cnidaria – Hydrozoa

Erect hydrozoa.

Cnidaria – *Metridium dianthus*

The base is wider than the column and often irregular. When expanded, the numerous tentacles form a 'plume' above a conspicuous parapet at the top of the smooth column.

Cnidaria - Pennatulacea

Sea pen

Cnidaria – Plumulariidae

Erect colonies, usually pinnate (feather shaped).

Echinodermata – *Asterias rubens*

Variable in colour, though usually orange, pale brown or violet. Deep-water specimens are pale. It has five tapering arms, broad at the base that are often slightly turned up at the tip when active.

Echinodermata – Asteroidea

Indeterminate starfish

Echinodermata – *Astropecten irregularis*

Stiff flattened body. At the edge of each arm there is a double series of large marginal plates. It often has purple spots at the end of each arm.

Echinodermata – *Ophiura albida*

A small brittle star with short, tapered, straight arms. The body and arms are red-brown in colour and there are two white marks at the base of each arm.

Echinodermata – *cf. Ophiura ophiura*

Arms stiff. Dorsally, the base of each arms is bordered by two rows of short spines.

Echinodermata – Ophiuroidea

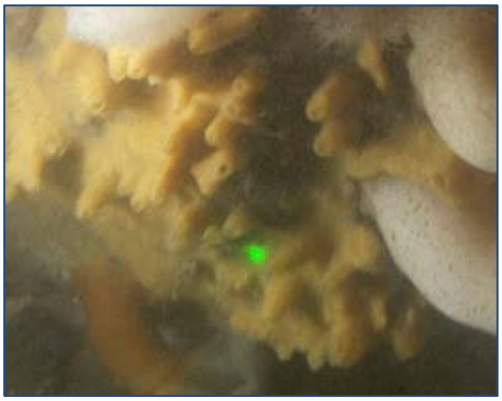
Fauna description

Mollusca – Bivalvia siphon

Bivalve siphons

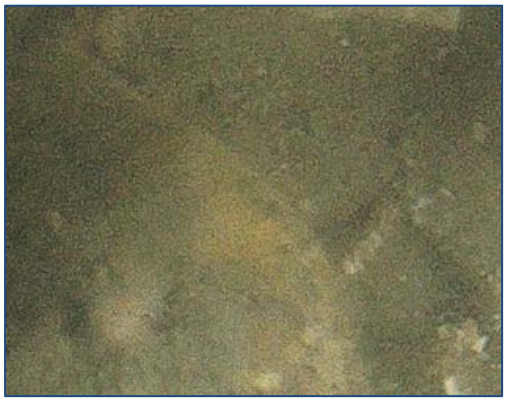
Mollusca – *Ensis* sp.

Razor shells have an elongate and fragile shell with valves gaping at both ends



Porifera - *cf. Halichondria (Halichondria) panicea*

Very polymorphic, varying from thin sheets, massive forms and cushions to branching-repent forms. Prone to giving off stout branching processes which develop into oscular chimneys.



Porifera 02

Orange encrusting sponge.

Porifera 01

White/cream encrusting sponge.

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