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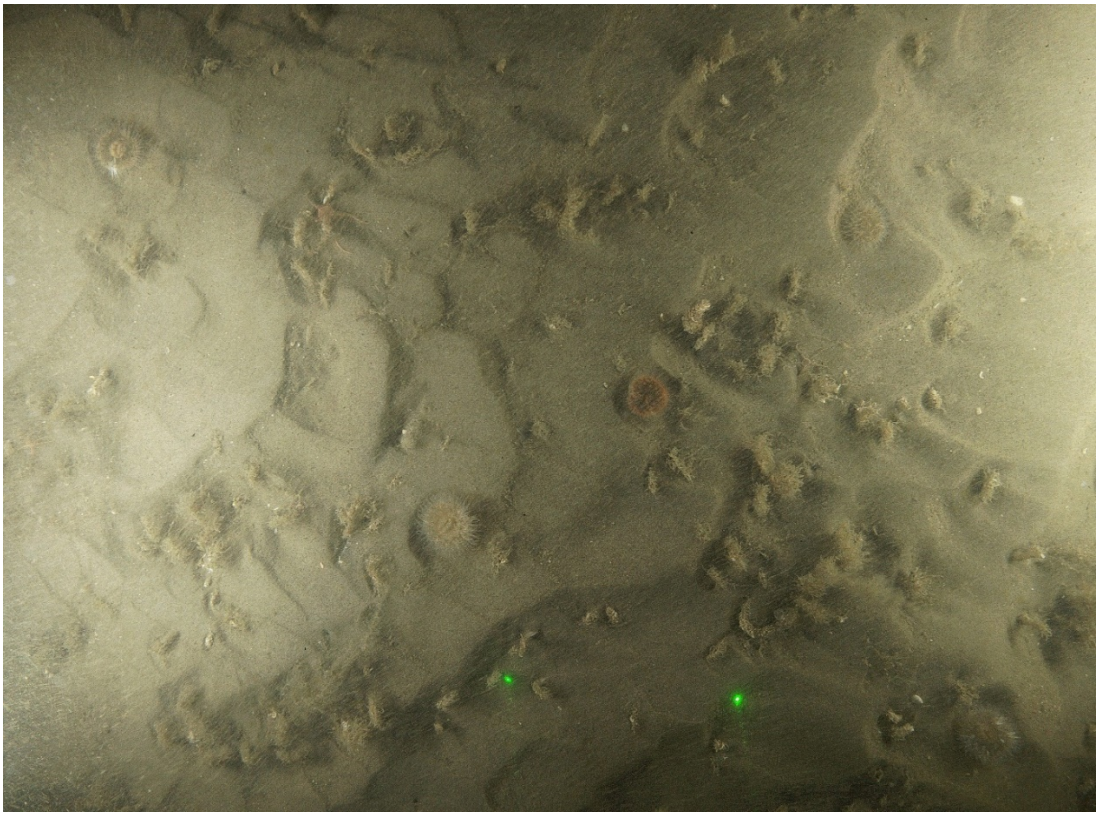
N04A-7-10-0-70015-01-01 Environmental Baseline Survey Report - All Areas



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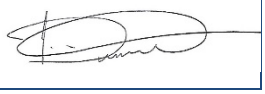
20/04/2022	Phil Durrant	v1.0	Director Sign-off / External Document	

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Data Licences

Charts NOT TO BE USED FOR NAVIGATION.

Glossary

Abbreviation	Definition
AET	Apparent Effect Thresholds
BAC	Background Assessment Concentrations
BC	Background Concentration
BSB	Below Seabed
CEMP	Coordinate Environmental Monitoring Programme
CM	Central Meridian
CPI	Carbon Preference Index
DCM	Dichloromethane
DDV	Drop-Down Video
DVV	Dual van Veen Grab
EBS	Environmental Baseline Survey
EC	European Commission
EMODnet	European Marine Observation and Data Network
EOL	End of Line
ERL	Effects Range Low
ERM	Effects Range Median
EU	European Union
EUNIS	European University Information Systems organisation
Fines	Sediment particles <63µm in diameter
GC	Gas Chromatography
GC-FID	Gas Chromatography Flame Ionisation Detection

GC-MS	Gas Chromatography Mass Spectrometry
GIS	Geographical Information System
Gravel	Sediment particles >2mm in diameter
HAB	Habitats Assessment
HF	Hydrofluoric acid
HMW	High Molecular Weight
ICP-MS	Inductively couple mass spectrometry
IUCN	International Union for Conservation of Nature
LAT	Lowest Astronomical Tide
LMW	Low Molecular Weight
LOD	Limit of Detection
LOI	Loss on Ignition
MANFQ	Dutch Ministry of Agriculture, Nature and Food Quality
MBES	Multibeam Echo Sounder
MDS	Multidimensional Scaling
NLOG	Dutch Oil and Gas Portal
NPD	Napthalenes, Phenanthrenes and Dibenzothiophenes
OSPAR	Oslo and Paris Convention
OWF	Offshore Wind Farm
PAH	Polycyclic Aromatic Hydrocarbon
Petrogenic	Unburned petroleum products
Ph	Phytane

Pr	Pristane
PRIMER	Plymouth Routines in Multivariate Ecological Research
PSA	Particle Size Analysis
Pyrogenic	Produced under intense heat
Sand	Sediment particles ≥63 µm and <2000 µm in diameter
SBP	Sub-bottom Profiler
SD	Standard Deviation
SEI	Significant Environmental Impact
SNS	Southern North Sea
SOL	Start of Line
SOW	Scope of Work
SSS	Side scan sonar
THC	Total hydrocarbon
TOC	Total Organic Carbon
TOM	Total Organic Matter
UCM	Unresolved Complex Mixture
UHR	Ultra High Resolution
UKCS	United Kingdom Continental Shelf
UKOOA	United Kingdom Offshore Operators Association
UTM	Universal Mercator Projection
VC	Vibrocore

Executive Summary

MarineSpace Ltd was commissioned by GEOxyz on behalf of ONE-Dyas BV, to produce an Environmental Baseline Report to provide site specific characterisation across the N04a and N05a platforms as well as the N04a-N05a Pipe Route and N05a-Riffgat Offshore Wind Farm Cable route (referred together as the 'Project'). During October and November 2021, the environmental and geophysical surveys were conducted onboard the GEOxyz survey vessel Geo-Ocean III. A total of 44 stations were successfully investigated with drop-down video and sampled with a dual 0.1 m^2 van Veen grab.

Water depths across the Project ranged from 18.7 m to 26.8 m (LAT). Seabed sediments were interpreted within the charted area as fine sand with shell fragments, coarse sand with shell fragments, coarse sand with clay and coarse sand with a high density of sand mason worms and razor clams (*Ensis* sp.).

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 'coarse sand' revealed rippled 'coarse sand with shell fragments'. Fauna within this sediment boundary was generally scarce except for *L. conchilega*, which was the most frequently observed species. Imagery across the area of 'fine sand with shell fragments' revealed fine sand with sparse fauna.

In accordance with Dutch guidance, the areas of cobbles and boulders identified 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 typical depth and sediment type were noted, and some associated fauna was found present, there were no defined sandbank features identified within the Project area. Consequently, this area is unlikely to represent European Commission (EC) Habitats Directive Annex I habitat subtype H1110_C. *Sabellaria* sp. was observed in 1 drop-down video still, where it formed a thin layer on an isolated cobble. Due to the minimal extent and lack of elevation of the observed *Sabellaria* sp., this 1 occurrence did not represent Annex I biogenic reef. 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 2 individuals of Pennatulacea were observed within the Project 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).

Particle size analysis confirmed the initial interpretation of the geophysical data and seabed imagery, returning a Folk classification that ranged from fine sand to very coarse sand. The sand proportion ranged from 70% to 100%, while the proportion of fines ranged from 0.0% to 16% and gravel from 0.0% and 28%. Total Organic Matter (TOM) exceeded background levels and was higher than the 2019 comparison survey. However, Total Organic Carbon (TOC) was generally lower than the comparison survey and since TOC is considered a more accurate measure of carbon, high values of TOM are likely a poor representation of carbon in the Project area.

Total hydrocarbon concentrations were within the UKOOA (2001) 95th percentile for the Southern North Sea, except for 1 station (ENV39). However, concentrations were similar to those recorded in

the previous 2019 survey. Comparatively higher concentrations were recorded at stations in areas of finer sediment diameter.

Gas Chromatography (GC) chromatogram traces at most stations presented a consistent pattern of very low-level, high molecular weight (HMW) resolved n-alkanes and Unresolved Complex Mixture (UCM) ranging from nC_{20} to nC_{26}. Hydrocarbons in the molecular weight range nC_{24} to nC_{36} commonly originate from terrestrial plant sources or may represent the residue of highly weathered and biodegraded petrogenic material including natural seeps, shipping discharge, oil and gas exploration and extraction. UCM accounted for 44% and 90% of total hydrocarbons across all stations, indicating that the majority of hydrocarbons were well weathered.

High Molecular Weight (HMW) n-alkanes accounted for 80% to 100% on the calculated total n-alkanes. Peaking generally occurred at odd-number and their distribution within the HMW range indicated the presence of biogenic n-alkanes most likely derived from diffuse higher terrestrial plant waxes. Carbon Preference Index (CPI) values for the Project, suggests a predominance of biogenic aliphatic hydrocarbons within the HMW range such as higher plant waxes, with a minor petrogenic signal. Phytane (Ph) was below limit of detection (LOD) at all stations which confirmed a predominance of primarily biogenic Pristane (Pr) throughout the surveyed stations.

Polycyclic Aromatic Hydrocarbon (PAH) bar charts showed a clear lack of parental dominance in the (Low Molecular Weight) LMW and HMW PAHs at most stations. The exception was Station ENV39 where parent compounds dominated in the LMW and HMW PAHs, suggesting a predominance of pyrogenic sediment hydrocarbons at this station, which likely originated from inputs such as atmospheric fallout and river discharges (Neff, 1979; McDougall, 2000). Background Concentration (BC) values were exceeded at Station ENV18, as well as Background Assessment Concentrations (BAC) values at Stations ENV12, ENV31, ENV38, ENV39 and ENV43, indicating the possibility of anthropogenic impact on the PAH composition of the sediments at these stations. Concentrations fell below the Effects Range Low (ERL) at all stations except for ENV39 but fell below the Effects Range Median (ERM) and Apparent Effect Thresholds (AET), suggesting toxic effects would occasionally occur but adverse biological impacts would be extremely unlikely.

Metal concentrations did not exceed any biological thresholds, with the exception of Arsenic (As) which exceeded the ERL at 1 station (ENV05), however, concentrations were similar to those recorded in the 2019 comparison survey.

As expected for soft bottom benthos, the faunal community was dominated by polychaetes (40% in the adult data set) (Gage, 2001). With the exclusion of juveniles, the community presented a high degree of evenness, with no species presenting a particular dominance. Diversity indices were similar to those of the previous survey but generally presented a wider range. Higher abundance of characteristic polychaete species *Aonides paucibranchia* and *Grania* spp. was found to be positively correlated with mean sediment diameter (µm) ($r = 0.89$, $p < 0.001$, and thus generally found with greatest abundance in the ‘coarse sand’ and ‘coarse sand and clay’ sediment boundaries. In contrast, the characteristic polychaete *Mangelona johnstoni* was found to be negatively correlated with mean sediment diameter(µm) ($r = -0.41$, $p < 0.01$), and was generally found present at higher abundance within the ‘fine sand’ sediment boundary. Multivariate analyses revealed differences in community composition across the Project area. Multivariate analysis also supported that this dichotomy was partially driven by sediment particle diameter.

EUNIS habitat and biotope classification at each station supported the presence of 2 main habitats based on sediment granulometry of coarse sand and fine sand. Stations with coarse sand were generally found to resemble A5.13 - Infralittoral coarse sediment, whereas stations with finer sediments generally resembled A5.24 - Infralittoral muddy sand. Areas where sediment were more variable, 'coarse sand and clay' also tended to resemble the biotope A5.44 - Circalittoral mixed sediments.

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 Project area.

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1. Introduction

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. The well is planned to be developed by installing a minimum facilities platform and gas export pipeline with a connection to the future N05a processing platform (here 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 developments at N04a and export pipeline connection works. This report details the results of the EBS and includes a summary of relevant results from the geophysical and HAB reports. 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;
- N05A-7-10-0-70041-01-xx - Habitat Assessment Report - N05a-Riffgat OWF Cable Route 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.

Environmental and geophysical data were collected along the pipeline route, platform areas (N04a and N05a) and power cable area. 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:

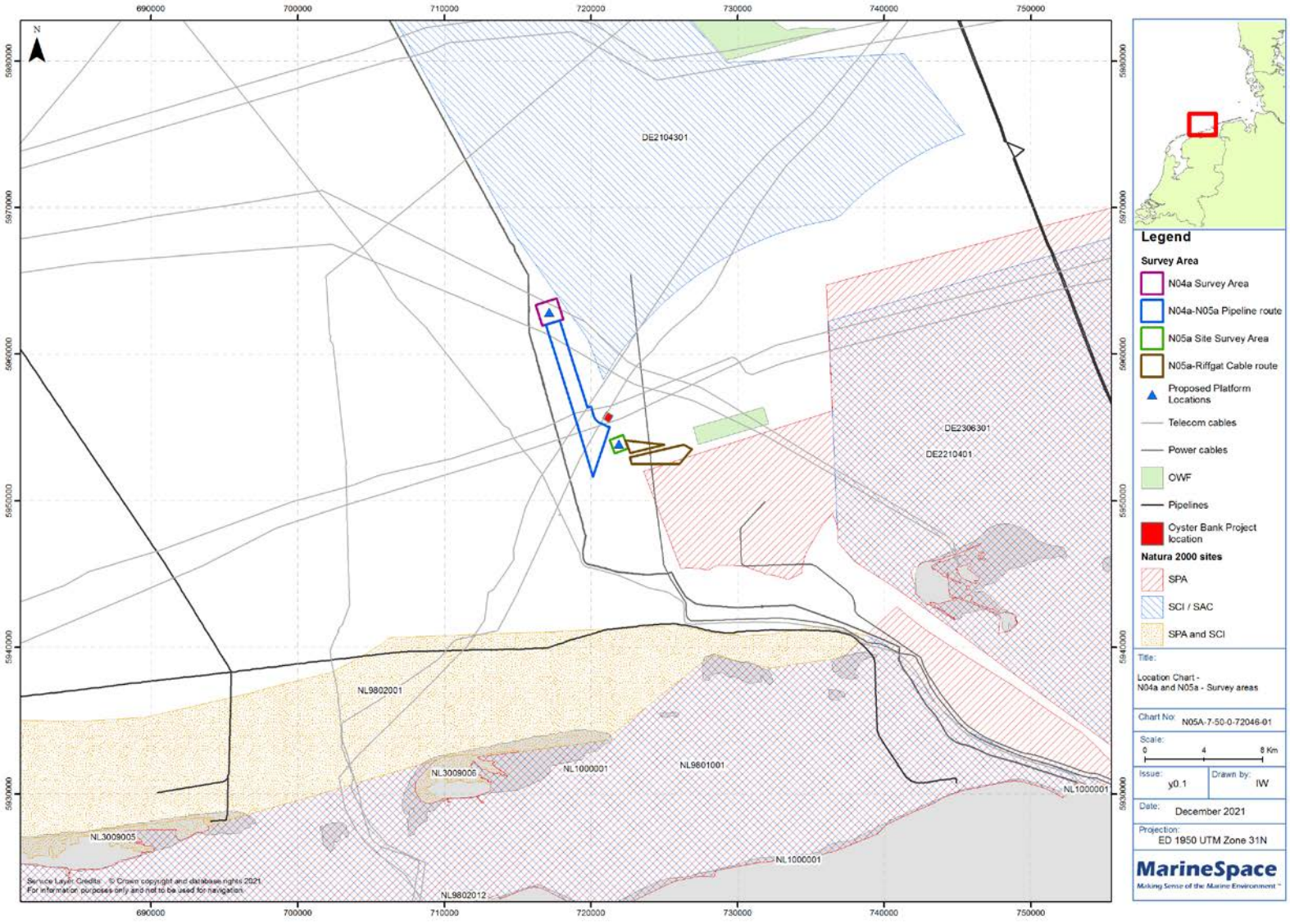
- Annex I habitats of the European Union (EU) habitats Directive (1992) particularly EU habitat 1170 stony reef and habitat 1110 Sandbanks which are slightly covered by sea water all the time;
- Threatened and/or declining species habitats listed by OSPAR (OSPAR, 2008);
- Species on the International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

All coordinates within this report are referenced to International 1924 Ellipsoid, European Datum 1950. Grid coordinates are projected using the Universal Transverse 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: Locations of the Project



1.2. Environmental Survey Strategy

From 21 October to 16 November 2021, the environmental and geophysical surveys were conducted onboard the GEOxyz survey vessel Geo-Ocean III. All environmental work was conducted by MarineSpace, supported by Associates from Ocean Ecology Ltd, between 05 and 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 locations 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 44 transects and co-located sampling stations were selected across the N05a platform area, N05a-N04a Offshore Wind Farm (OWF) cable route, N04a-N05a pipe route and N04a platform location in areas that were previously not investigated by the 2019 N5a Development Survey (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 to Figure 1.8. The sampling methodology is presented in Appendix B.

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)
N04a Platform Area							
ENV01	SOL	717267	5962969	100	Along an area of rippled sands NE of the dome.	Y	286
	EOL	717271	5962869				
ENV02	SOL	717236	5962356	100	Along an area of homogenous lower reflectivity.	Y	244
N04a-N05a Pipe Route							
ENV03	SOL	717480	5961894	100	Along an area of homogenous higher reflectivity.	Y	191
	EOL	717573	5961930				
ENV04	SOL	717475	5961575	100	Along an area of homogenous higher reflectivity.	Y	141
	EOL	717531	5961659				
ENV05	SOL	717552	5961292	100	Along an area of homogenous lower reflectivity.	Y	206
	EOL	717608	5961209				
ENV06	SOL	717772	5960486	100	Along an area of homogenous lower reflectivity.	Y	203
	EOL	717837	5960409				
ENV07	SOL	717911	5960000	100	Along an area of homogenous lower reflectivity.	Y	145
	EOL	717976	5959924				
ENV08	SOL	718038	5959345	100	Along an area of homogenous lower reflectivity.	Y	227
	EOL	718134	5959372				
ENV09	SOL	718122	5958911	100	Along an area of homogenous lower reflectivity capturing a potential sandbank feature.	Y	220
	EOL	718220	5958890				
ENV10	SOL	718312	5958334	100	Along an area of homogenous lower reflectivity capturing a potential area of mega ripples.	Y	139
	EOL	718393	5958393				
ENV11	SOL	718405	5957997	100	Along an area of homogenous lower reflectivity capturing a potential crest of a mega ripple.	Y	235
	EOL	718500	5958028				
ENV12	SOL	718528	5957530	100	Along an area of homogenous lower reflectivity capturing a potential crest of a mega ripple.	Y	286
	EOL	718624	5957558				
ENV13	SOL	718681	5957082	100	Along an area of homogenous lower reflectivity capturing a potential crest of a mega ripple.	Y	238
	EOL	718778	5957059				
ENV14	SOL	718766	5956603	100	Along an area of homogenous lower reflectivity capturing a trough of a potential sand bank.	Y	262
	EOL	718863	5956629				
ENV15	SOL	718928	5956134	100	Along and area of homogenous sand ripples.	Y	243
	EOL	719007	5956073				
ENV16	SOL	719085	5955629	100	Along and area of homogenous sand ripples.	Y	194
	EOL	719164	5955568				
ENV17	SOL	719271	5955155	100	Along an area of larger sand ripples and potential sand banks.	Y	169
	EOL	719203	5955082				
ENV18	SOL	719387	5954676	100	Along an area of homogenous lower reflectivity capturing a transition between sand ripples and bordering higher reflectivity indicative of a change in sediment	Y	142
	EOL	719349	5954584				
ENV19	SOL	719530	5954136	100	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	210
	EOL	719431	5954144				
ENV21	SOL	719935	5953863	100	Along and area of homogenous sand ripples.	Y	241
	EOL	719866	5953791				
ENV22	SOL	720138	5953436	100	Along and area of homogenous sand ripples.	Y	236
	EOL	720088	5953350				
ENV23	SOL	720609	5953300	100	Along and area of homogenous sand ripples.	Y	273
	EOL	720591	5953202				
ENV24	SOL	721047	5953338	100	Along an area of homogenous lower reflectivity.	Y	295
	EOL	721076	5953242				
ENV25	SOL	721420	5953518	100	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	114
	EOL	721470.5	5953432				
N05a Platform Area							
ENV26	SOL	721903	5953824	100	Along an area of mixed reflectivity indicative of heterogenous sediments.	Y	232
	EOL	721860	5953734				
ENV27	SOL	722143	5953888	100	Along an area of homogenous lower reflectivity.	Y	402
N05a-Riffgat OWF Cable Route Area							
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				

Transect	SOL/EOL[1]	Proposed Easting[2]	Proposed Northing[2]	Proposed Length (m)	Rationale	Transect Completed (Y/N)	Length Achieved (m)
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
N04a Platform Area								
ENV01	717270	5962912	23.4	Moved 130 m from the dome in an area of rippled sands.	1	1	1	1
ENV02	717279	5962381	24.4	On an area of homogenous, lower reflectivity.	1	1	1	1
N04a-N05a Pipe Route								
ENV03	717495	5961899	25.0	Moved 86 m East of the original location in an area of homogenous higher reflectivity.	1	1	1	1
ENV04	717489	5961596	24.1	Moved 200 m along the RPL in an area of homogenous higher reflectivity.	1	1	1	1
ENV05	717582	5961248	22.4	Moved 300 m North along the RPL on an area of homogenous lower reflectivity.	1	1	1	1
ENV06	717804	5960447	21.7	Area of homogenous lower reflectivity.	1	1	1	1
ENV07	717938	5959968	21.4	Moved 14 m NE of a proposed vibrocore station in an area of homogenous lower reflectivity.	1	1	1	1
ENV08	718086	5959358	21.3	Area of homogenous lower reflectivity.	1	1	1	1
ENV09	718171	5958900	21.4	Moved 60 m West of a proposed vibrocore station in an area of homogenous low reflectivity at the base of a potential sandbank.	1	1	1	1
ENV10	718350	5958362	22.2	Moved 150 m South along the RPL due to a magnetometer anomaly in an area of homogenous lower reflectivity and potential mega-ripples.	1	1	1	1
ENV11	718455	5958013	22.8	Moved 22 m SE of a proposed vibrocore station near the crest of a potential mega ripple.	1	1	1	1

Station	Proposed Easting (m)[1]	Proposed Northing (m)[1]	Depth (m LAT)[2]	Rationale	Grab Samples Acquired[3]			
					PC	MACA	MACB	MACC
ENV12	718572	5957543	24.2	Potential crest area of a mega ripple in an area of generally homogenous higher reflectivity.	1	1	1	1
ENV13	718725	5957072	24.2	Moved 25 m NE of a proposed vibrocore station along the crest of a potential mega ripple. In an area of generally homogenous higher reflectivity.	1	1	1	1
ENV14	718816	5956615	23.8	Trough of a sandbank. In an area of generally homogenous higher reflectivity.	1	1	1	1
ENV15	718971	5956101	23.6	Moved 18 m NE of a proposed vibrocore station in an area of homogenous lower reflectivity and sand ripples.	1	1	1	1
ENV16	719122	5955600	25.5	Moved 100 m away from a magnetometer anomaly in an area of homogenous lower reflectivity and sand ripples.	1	1	1	1
ENV17	719234	5955116	26.0	Moved 25 m SE of a proposed vibrocore station in an area of larger rippled and sandbanks. In an area of generally homogenous higher reflectivity sandbanks and lower reflectivity sand ripples.	1	1	1	1
ENV18	719372	5954641	26.6	Moved 11 m South along the RPL due to a magnetometer anomaly in an area of homogenous lower reflectivity and sand ripples	1	1	1	1
ENV19	719479	5954140	25.1	Moved 16 m SE along the RPL of a proposed vibrocore station in an area of mixed reflectivity indicative of heterogenous sediments.	1	1	1	1
ENV21	719901	5953827	24.5	Moved 225 m NE of a magnetometer anomaly in an area of homogenous higher reflectivity sand ripples.	1	1	1	1
ENV22	720111	5953389	23.1	Moved 18 m SE of a proposed vibrocore station in an area of higher reflectivity homogenous sand ripples.	1	1	1	1
ENV23	720599	5953247	23.0	Along the RPL route on an area of homogenous higher reflectivity sand ripples.	1	1	1	1
ENV24	721062	5953288	23.5	Moved 18 m East of a proposed vibrocore station on an area of homogenous lower reflectivity.	1	1	1	1
ENV25	721450	5953467	24.6	Moved 87 m SW along the RPL route due to a magnetometer anomaly in an area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
N05a Platform Area								
ENV26	721881	5953778	25.2	Moved 40 m SW of a proposed vibrocore station in an area of mixed reflectivity indicative of heterogeneous sediments.	1	1	1	1
ENV27	722123	5953846	24.6	Moved 55 m SW of a proposed vibrocore station in an area of homogenous lower reflectivity.	1	1	1	1
N05a-Riffgat OWF Cable Route Area								
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

Station	Proposed Easting (m)[1]	Proposed Northing (m)[1]	Depth (m LAT)[2]	Rationale	Grab Samples Acquired[3]			
					PC	MACA	MACB	MACC
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 area detailed in

2 Depth at target location recorded from processed MBES data

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

Figure 1.2: N04a-platform survey area including targets and actuals

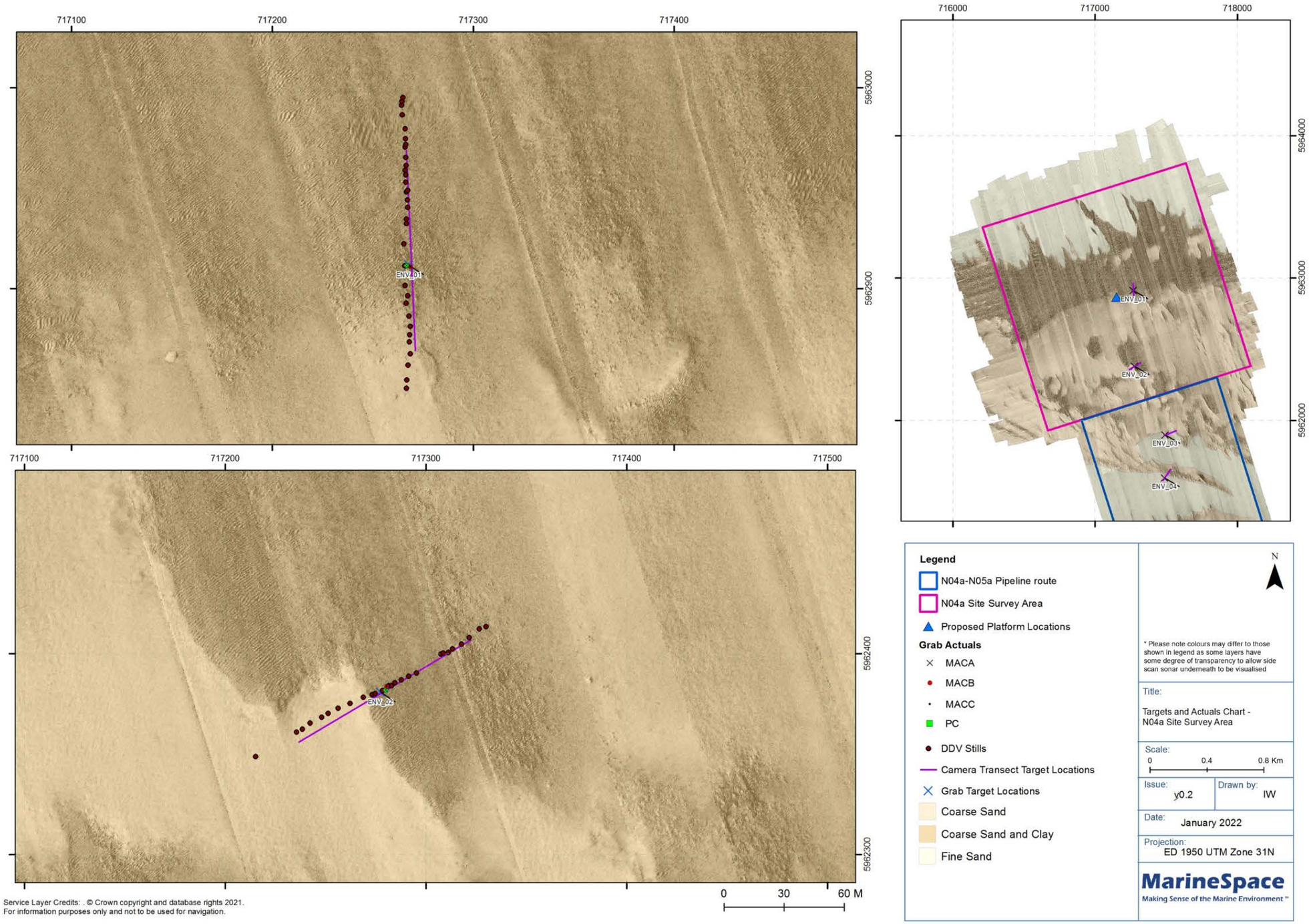


Figure 1.3: N04a-N05a pipe route survey including targets and actuals, Stations ENV03-11

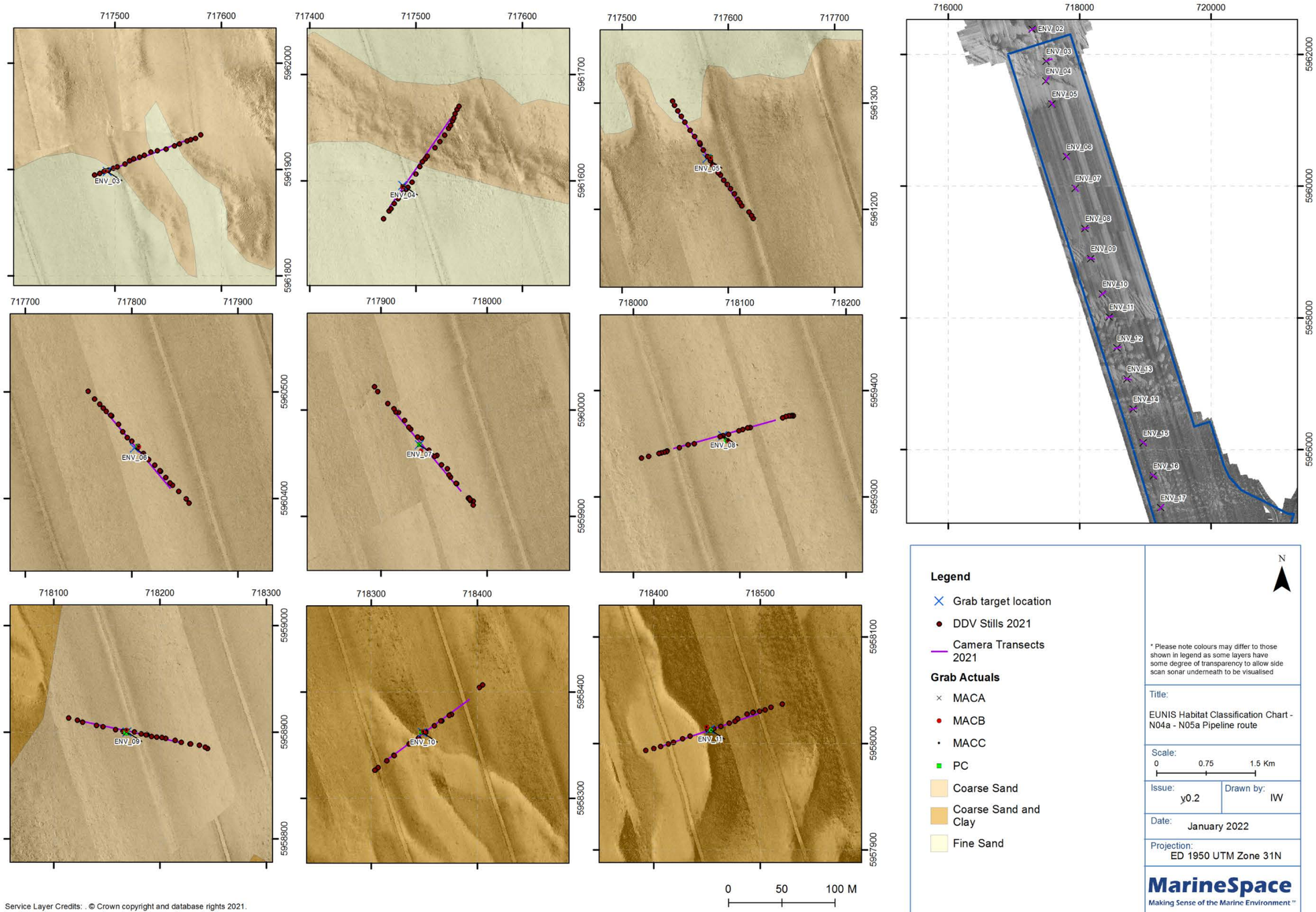


Figure 1.4: N04a-N05a pipe route survey including targets and actuals, Stations ENV12-19, ENV21

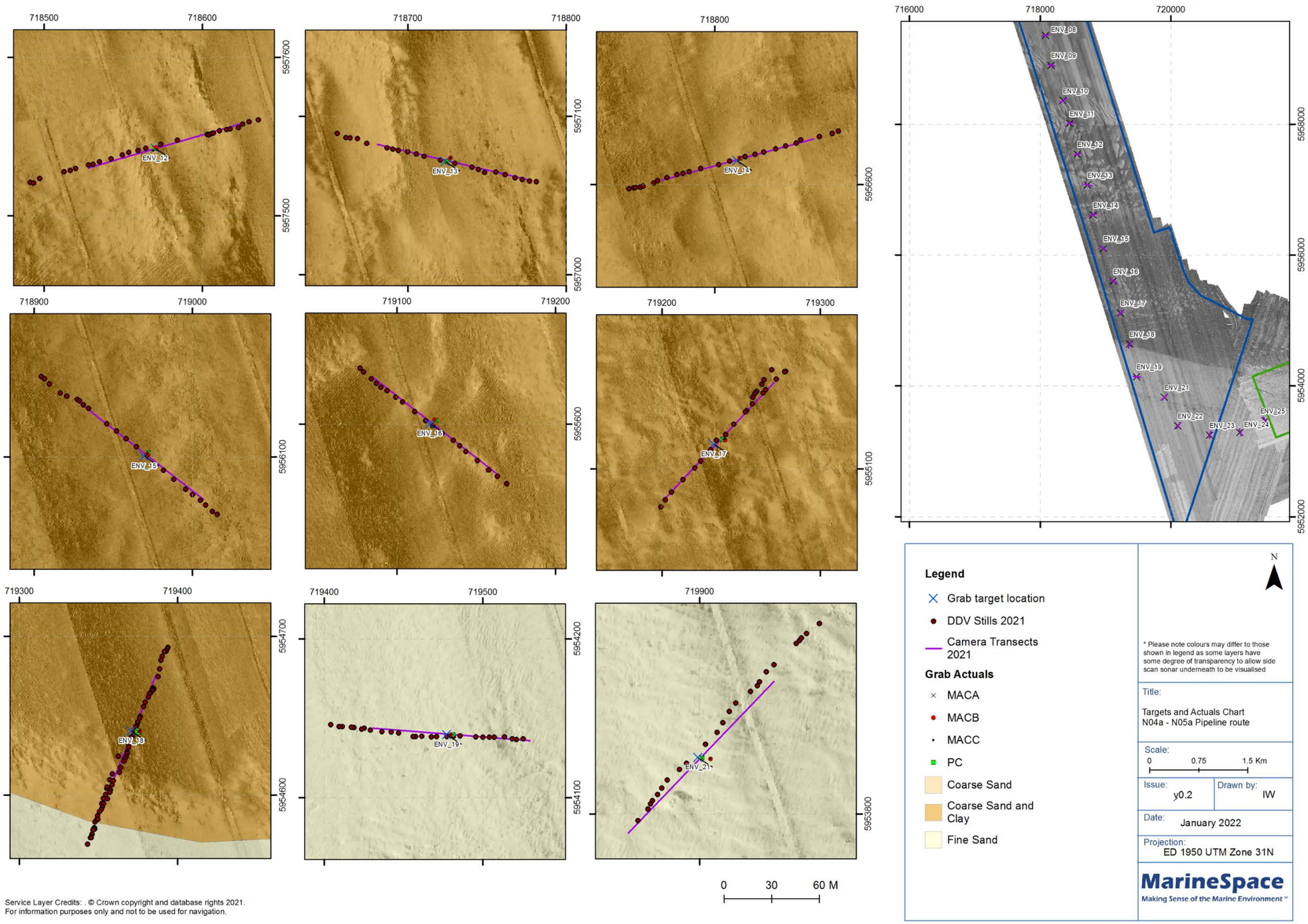


Figure 1.5: N04a-N05a pipe route survey including targets and actuals, Stations ENV22-25

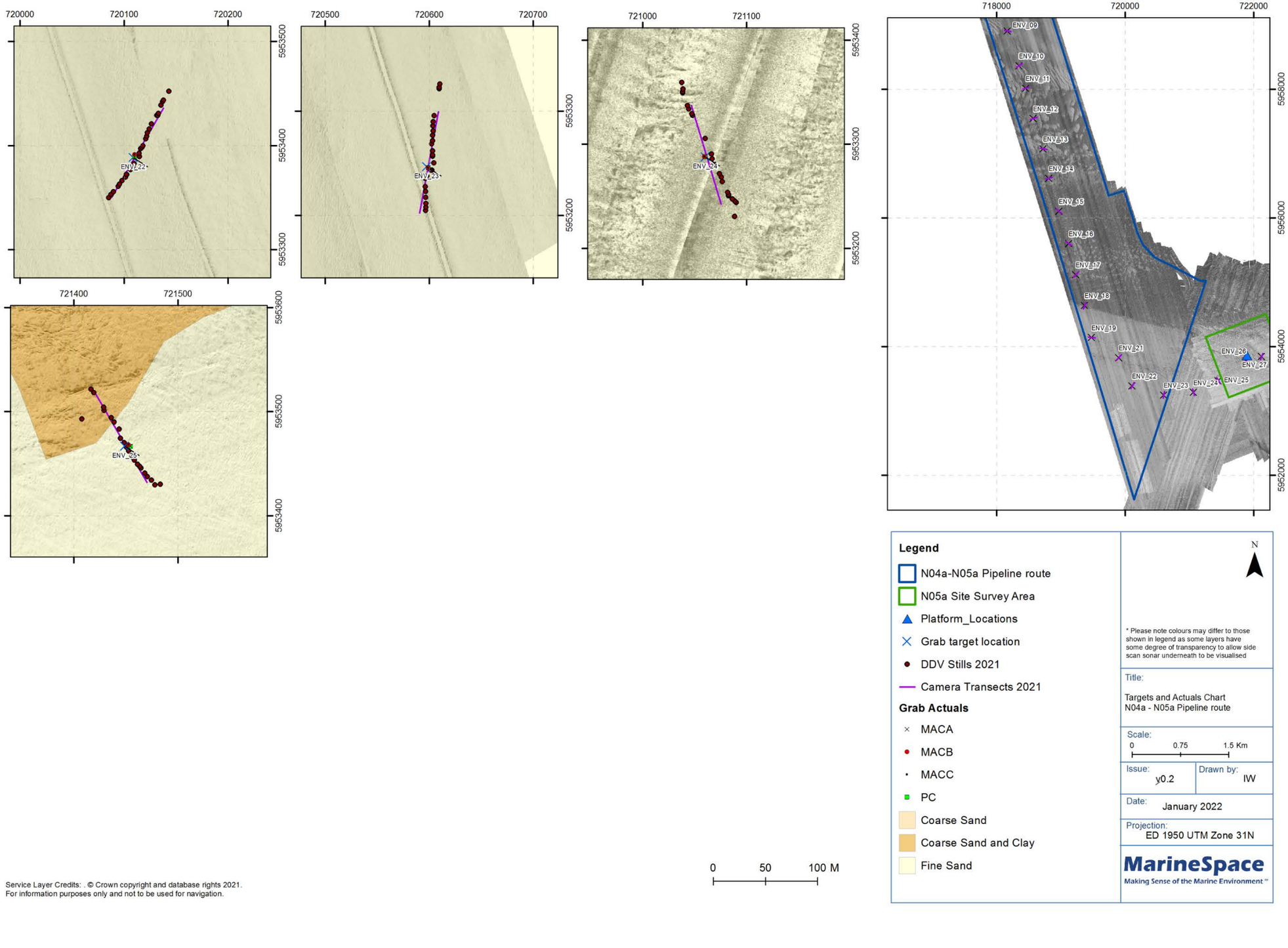


Figure 1.6: N05a-platform survey area including targets and actuals, Stations ENV26-27

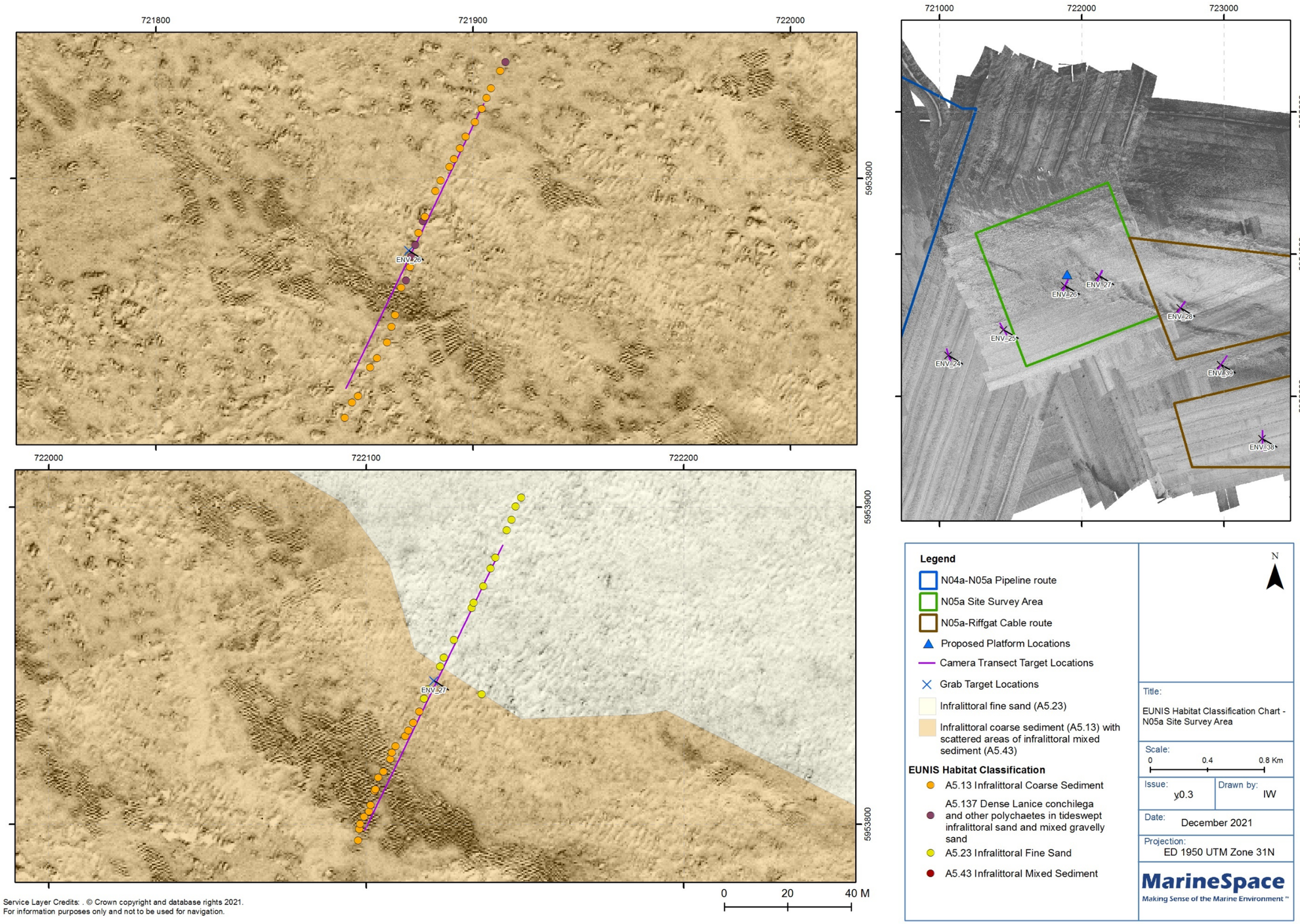


Figure 1.7: N05a-Riffgat OWF cable route survey area including targets and actuals, Stations ENV20, ENV28-32, ENV38-40

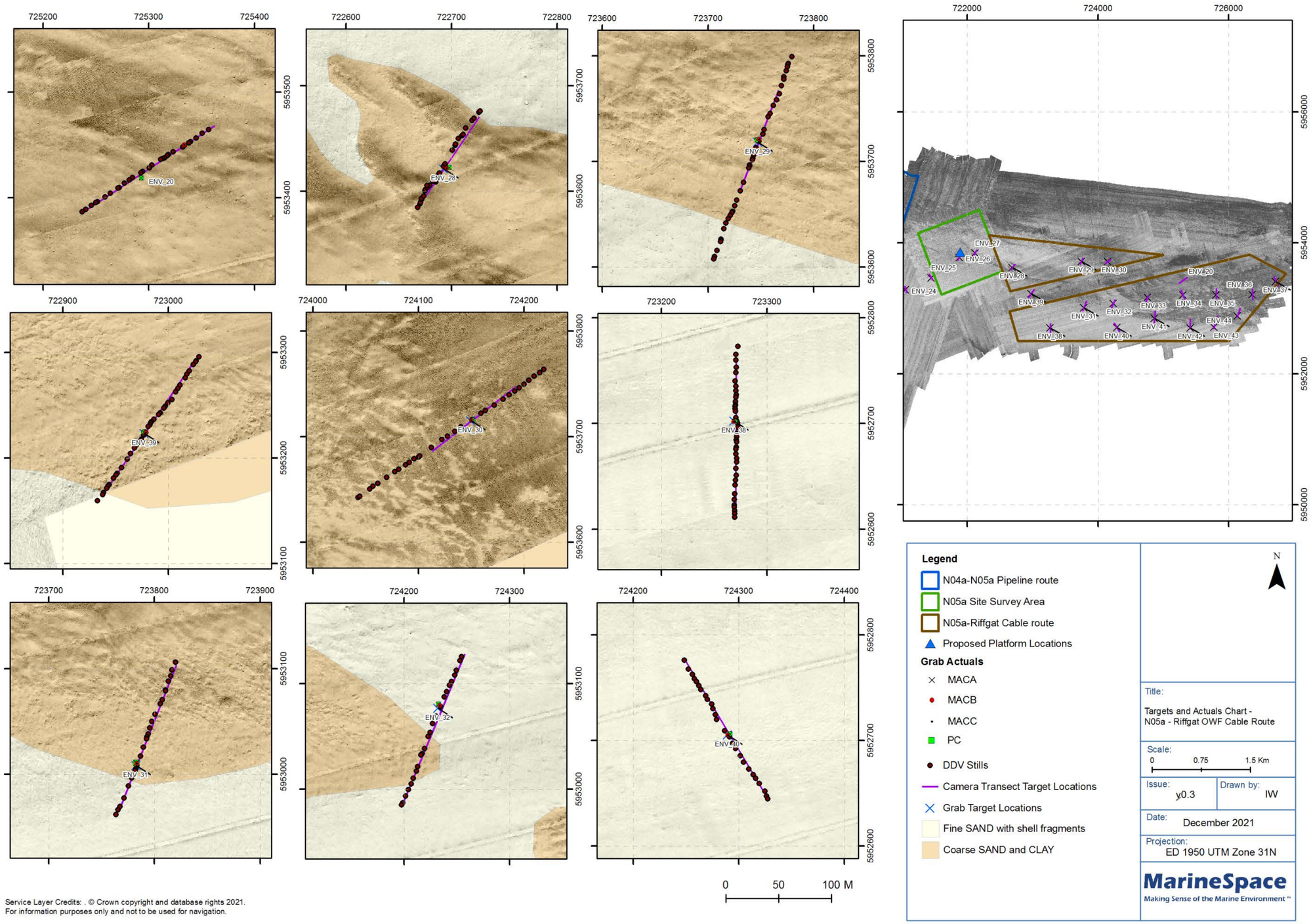
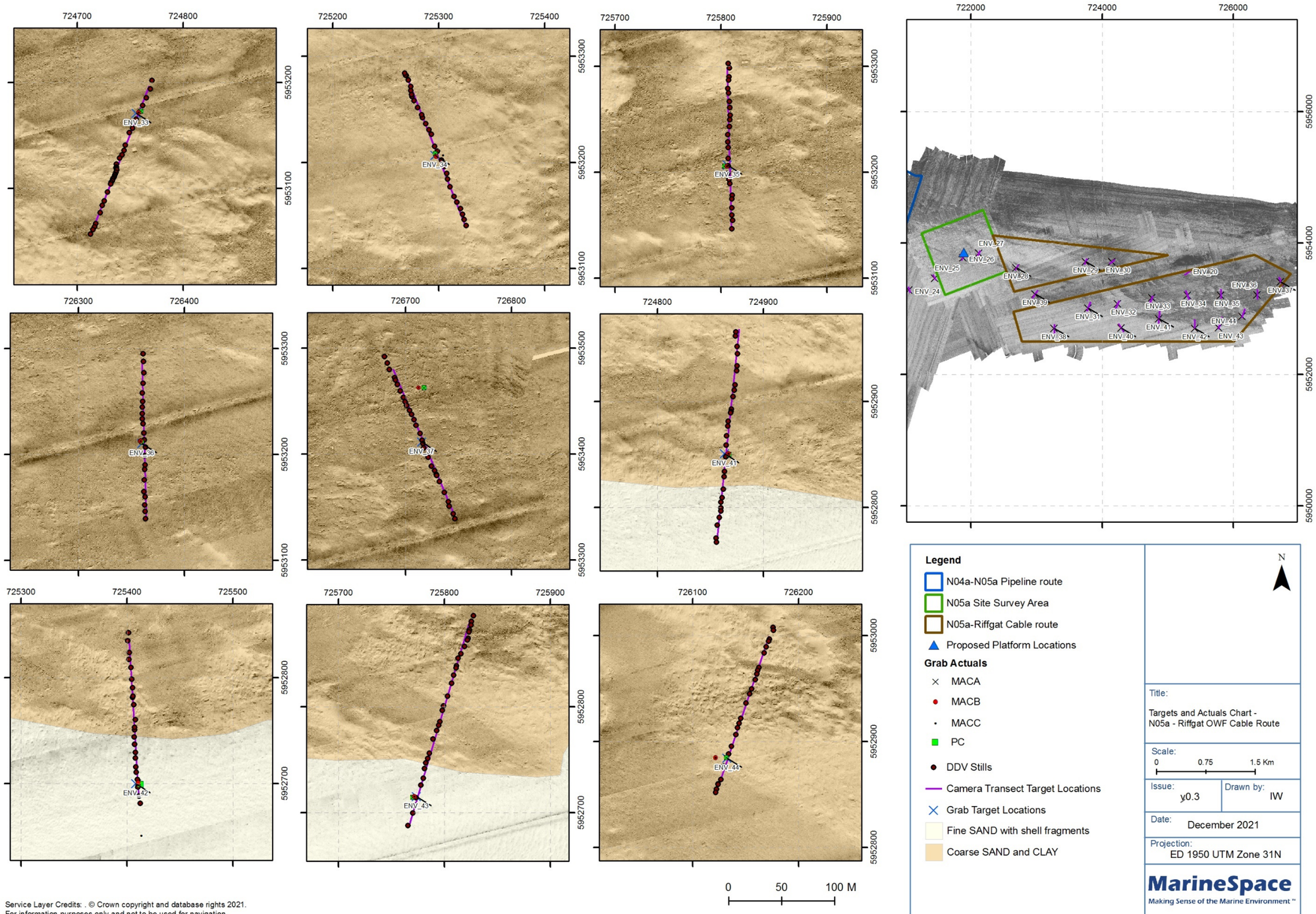


Figure 1.8: N05a-Riffgat OWF cable route survey area including targets and actuals, Stations ENV33-37, ENV41-44



1.3. Comparison Data

The results from this environmental survey, where possible, have been compared to the findings of the previous survey undertaken by Benthic Solutions Limited in 2019 on behalf of GEOxyz in the vicinity of the N05a platform location.

The current survey used a dual 0.1 m^2 van Veen grab (DVV) while the previous 2019 survey used a 0.1 m^2 Day grab. Both items of sampling equipment operate in the same manner and the change therefore does not alter the subsequent results. For both surveys, particle size analysis (PSA) ≥1 mm was undertaken using a combination of wet and dry sieving, with sediments <1 mm analysed using a laser diffraction particle sizer. In both surveys, inorganic carbon was removed prior to Total Organic Carbon (TOC) analysis. Unlike the 2019 survey, inorganic carbon was removed prior to Total Organic Matter (TOM) analysis using sulphurous acid.

Hydrocarbon analysis involved a dichloromethane (DCM) wet vortex extraction followed by analysis with gas chromatography flame ionisation detection (GC-FID) for analysis of total hydrocarbon (THC) concentration, while the aliphatic (n-alkanes) fraction was analysed by gas chromatography (GC) and mass spectrometry (GC-MS) was used for the polycyclic aromatic hydrocarbon (PAH) fraction.

The metals suite varied between surveys. However, all metals analysed in the current survey were analysed in the previous survey. In current survey, metals were digested by boric and hydrofluoric acid (HF) prior to analysis using inductively coupled mass spectrometry (ICP-MS), while in the 2019 survey metals were digested with HF and nitric acid, while Mercury (Hg) was digested using hydrogen peroxide and nitric acid.

Faunal samples for all surveys were screened through a 0.5 mm sieve prior to analysis.

Table 1.4: Details of comparability between surveys

	Current Survey	GeoXYZ (2019)
Survey Date	November 2020	May 2019
Number of Stations	44	28
Predominant Seabed Type	Slightly Gravelly Sand	Sand and Slightly Gravelly Sand
Water Depths (m LAT) sampled	21 - 26	13 - 29
Comparison Data	PSA (Folk and Eard Sorting) TOM by LOI (carbonate removal) TOC by induction furnace following carbonate removal	As per current survey except: TOM which was not treated for carbonate removal. Metals by HF/nitric acid extraction.

	Current Survey	GeoXYZ (2019)
	THC/PAH by wet vortex extraction and GC (THC prior to fractionation) Metals - As, Cd, Cr, Cu, Pb, Ni, Zn by ICPS-MS following HF/Boric extraction. Macrofauna 0.5 mm mesh sieve	Hg by hydrogen peroxide and nitric acid

1.4. Published Background Data

Reference, where possible, has been made to suitable published background data for marine sediment from the North-East Atlantic and North Sea such as United Kingdom Offshore Operators Association (UKOOA, 2001) and OSPAR (2005), along with toxicity information including Effects Range Low (ERL) and Effects Range Median (ERM; Long *et al.*, 1995) and the Apparent Effect Thresholds (AETs) as detailed by Buchman (2008).

United Kingdom Offshore Operators Association (UKOOA) commissioned a project to provide a comprehensive review of sea bed environmental surveys. The aim of the project was to locate and catalogue all reports of UKCS environmental surveys carried out by offshore oil and gas operators; to construct a relational database of all chemical and biological data from those reports and to undertake a comprehensive analysis of the data. The resulting threshold levels are based on surveys taken place between 1975 and 1998 recorded in 3 different regions (sectors) of the North Sea; northern (>60°N), central (55 N-60 N) and southern (<55°N). Background contaminant levels were calculated for each sector using a dataset composed of survey stations situated over 5 km from the nearest oil platform. For each contaminant parameter they calculated the mean background concentration, the 50th percentile (median) and the 95th percentile. Comparisons are made throughout this report to the findings from the published report (UKOOA, 2001) with reference to the UKOOA defined southern North Sea (SNS) sector.

In order to assess progress towards near background or zero concentrations, OSPAR has developed Background Concentrations (BCs), the definition for which is “the concentration of a contaminant at a ‘pristine’ or ‘remote’ site based on contemporary or historical data” (OSPAR agreement 2005-6). For naturally occurring substances, such as polycyclic aromatic hydrocarbons (PAHs) and trace metals, BCs are the typical concentrations found in uncontaminated locations in the OSPAR maritime area (North-East Atlantic). In order to facilitate precautionary assessments of data collected under the OSPAR Coordinated Environmental Monitoring Programme (CEMP) against BCs, OSPAR has developed Background Assessment Concentrations (BACs). It is recognised that natural conditions or processes such as geological variability or upwelling of oceanic waters near the coast may lead to significant variations in background concentrations of contaminants, for example trace metals. The

natural variability of background concentrations should be taken into account in the interpretation of the BCs and BACs. Comparison to OSPAR (2005) data required normalisation of the hydrocarbon concentrations to 2.5% TOC.

Based upon an evaluation of existing data, Long *et al.* (1995) defined 3 ranges in chemical concentrations for 28 chemicals, with these ranges defined by two guidelines. The lower 10th percentile of the effects data for each chemical was identified and referred to as the Effects Range Low (ERL). The median, or 50th percentile, of the effects data was identified and referred to as the Effects Range Median (ERM). Concentrations below the ERL value represent a "Minimal effects" range; a range intended to estimate conditions in which effects would be rarely observed. Concentrations equal to and above the ERL and below the ERM represent a "Possible-effects" range within which effects would occasionally occur. Finally, the concentrations equivalent to and above the ERM value represent a "Probable-effects" range within which effects would frequently occur.

Apparent Effects Thresholds (AET) are another benchmark based upon empirical relationships between sediment concentrations and observed toxicity bioassay results or observed benthic community impacts (Buchman, 2008). For each analyte, paired observations are ranked in increasing concentrations. The highest concentration associated with a nontoxic sample then sets the AET value, such that only toxic samples are observed at higher concentrations

1.5. Existing Infrastructure

A total of 6 wells are known to occur within 5 km of the Project. The position and status of the wells in Dutch waters were obtained from the Dutch Oil and Gas Portal (NLOG), while information for wells in German waters was obtained from European Marine Observation and Data Network (EMODnet). Wells within 5 km of the project are listed in Table 1.5, as well as distance and direction from the nearest station.

Pipeline locations were obtained from EMODnet, which revealed an absence of pipelines within 5 km of the Project.

Table 1.5: Existing infrastructure within 5 km of the Project

Wells	Country	Easting	Northing	Status	Intent	End Date	Distance and Direction from Nearest Station
N04-02	Netherlands	717682	5954973	Abandoned	Exploration	14-03-1993	1.6 km W of ENV17
N04-03	Netherlands	717149	5962867	Unknown	Exploration	17-05-2021	129 m SW of ENV01
N05-01-S1	Netherlands	721677	5954561	Unknown	Exploration	04-07-2017	809 m NW of ENV26
N05-01-S3	Netherlands	721677	5954561	Unknown	Evaluation	25-08-2017	809 m NW of ENV26
N07-04A-S1	Netherlands	717698	5951574	Unknown	Exploration	Unknown	3.0 km SW of ENV22
Nordsee (D) P 1	Germany	728253	5950670	Abandoned	Exploration	Unknown	3.1 km SE of ENV44

2. Results

2.1. Geophysical Survey

The 2021 geophysical survey was completed across 4 survey areas: N05a platform area, N05a-Riffgat OWF cable route area, N04a-N05a pipe route and N05a platform area. Data acquired were supplemented with previous survey data acquired in 2019. The following bathymetry and seabed features information is summarised from the geophysical reports (GEOxyz, 2021b; 2021c; 2022a; 2022b).

Lines were surveyed with MBES, SSS and SBP across all survey areas as well as 2D ultra high resolution (2D UHR) at the N04a and N05a platform areas.

The N05a geophysical survey comprised a 1 km x 1 km survey area centred on the N05a platform location, while the N04a geophysical survey comprised 1.5 km x 1.5 km survey area centred on the proposed N04a platform location. The N05a-Riffgat OWF cable route area 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. The N04a-N05a pipe route survey comprised 33 main lines, orientated 163°/343° with a 50 m spacing and lengths varying between 745 m and 10.9 km and 11 cross lines, orientated 73°/253° with a 1 km spacing and lengths varying between 776 m and 1.7 km. These survey lines connected to the northwest corner of the 2019 survey area.

2.1.1. Bathymetry

2.1.1.1. N05a Platform Area Bathymetric Summary

Bathymetry within the N05a platform area is shown in Figure 2.1. Water depths ranged from a minimum of 23.7 m Lowest Astronomical Tide (LAT) in the south to a maximum of 26.2 m LAT in the north.

The seabed dipped gently to the north at a negligible gradient of less than 1°. Small areas with relief of up to 0.5 m were observed on the bathymetry data with measured gradients of up to 6° on their flanks. Surface relief within the survey area was interpreted to be largely due to outcropping clay.

2.1.1.2. N05a-Riffgat OWF Cable Area Bathymetric Summary

Bathymetry within the charted N05a-Riffgat OWF cable route is shown in Figure 2.2. Water depths generally shoaled towards the south and east of the charted area, 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 evident 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.

2.1.1.3. N04a-N05a Pipe Route Bathymetric Summary

Bathymetry within the charted N04a-N05a pipe route is shown in Figure 2.3. Water depths within the route corridor varied from 20.6 m LAT and 26.8 m LAT. The water depth at the proposed N04a platform location was 23.0 m. The proposed location sat on the existing dome and the natural water depth around the dome was 23.9 m. The water depth at the proposed N05a platform location was 25.4 m.

Natural gradients within the charted area were generally less than 1°. An area of dredging scars presented a miss tie of approximately 0.5 m between the 2019 data (prior to dredging) and the 2021 data. Gradients up to 15° could be seen on the flanks of the dredging scars.

2.1.1.4. N04a Platform Area Bathymetric Summary

Bathymetry within the N04a platform area is shown in Figure 2.4. Water depths ranged from a minimum of 20.6 m LAT, 717 m north-east of the proposed N04a platform location, to a maximum of 26.3 m, 925 m south-west of the proposed N04a platform location.

Ridges with relief of up to 0.5 m were eveident on the bathymetry data with measured gradients of up to 4° on their flanks. These ridges were generally orientated north-west/south-east to north-north-west/south-south-east and were interpreted as sand waves formed due to seabed currents shifting the surficial sand.

Figure 2.1: Bathymetry across the N05a platform area

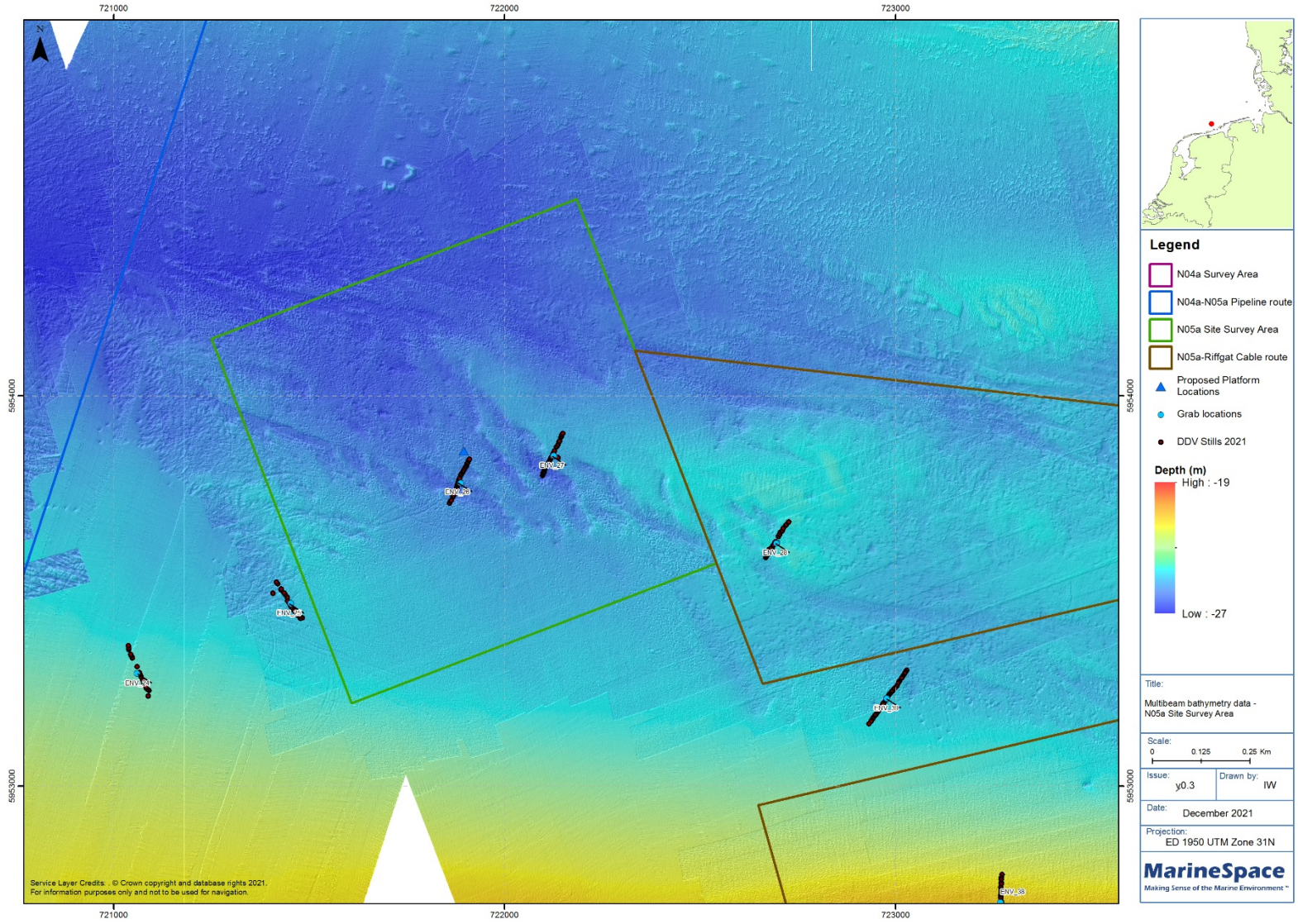


Figure 2.2: Bathymetry across N05a-Riffgat OWF cable route

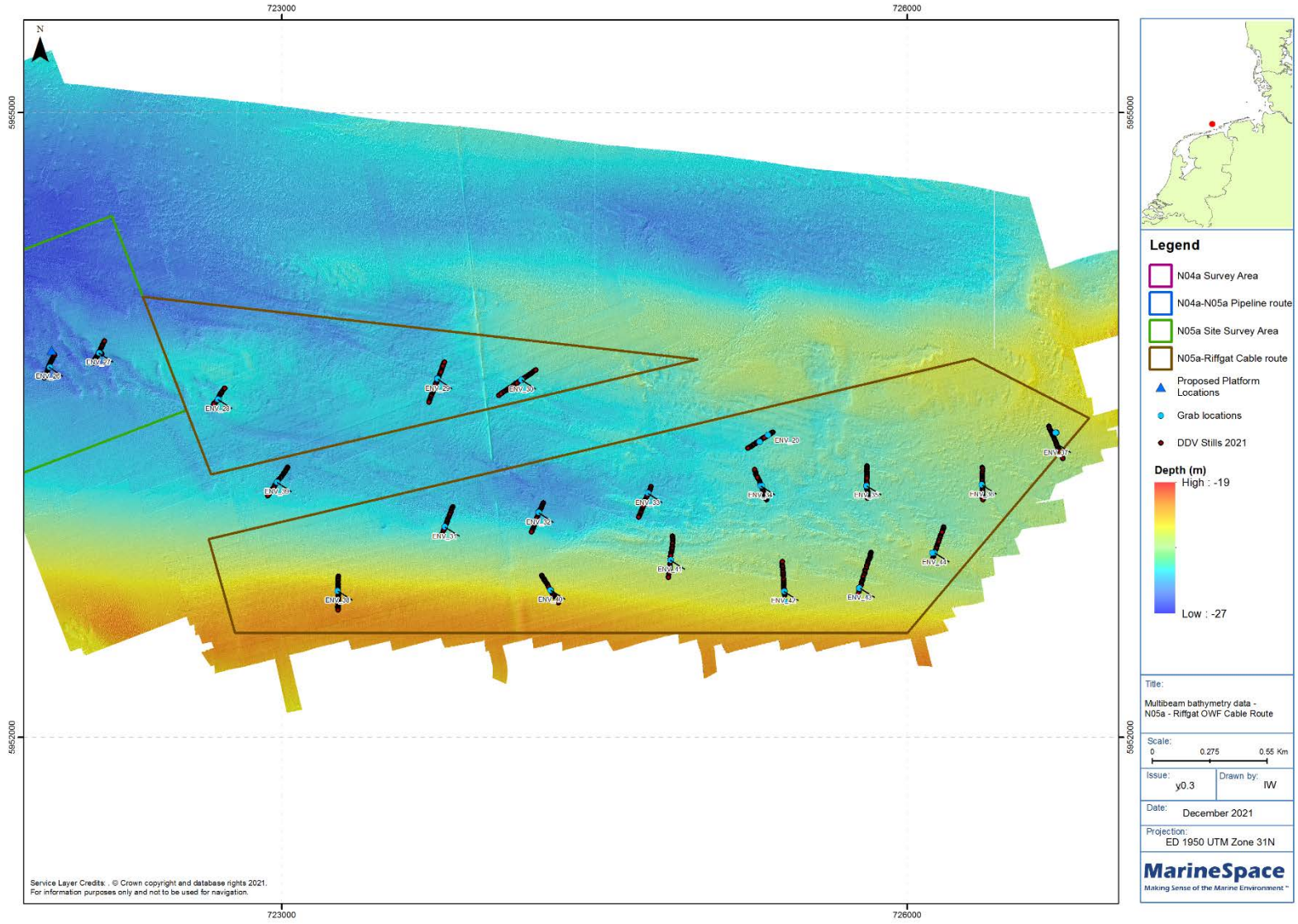


Figure 2.3: Bathymetry across N04a-N05a Pipe Route

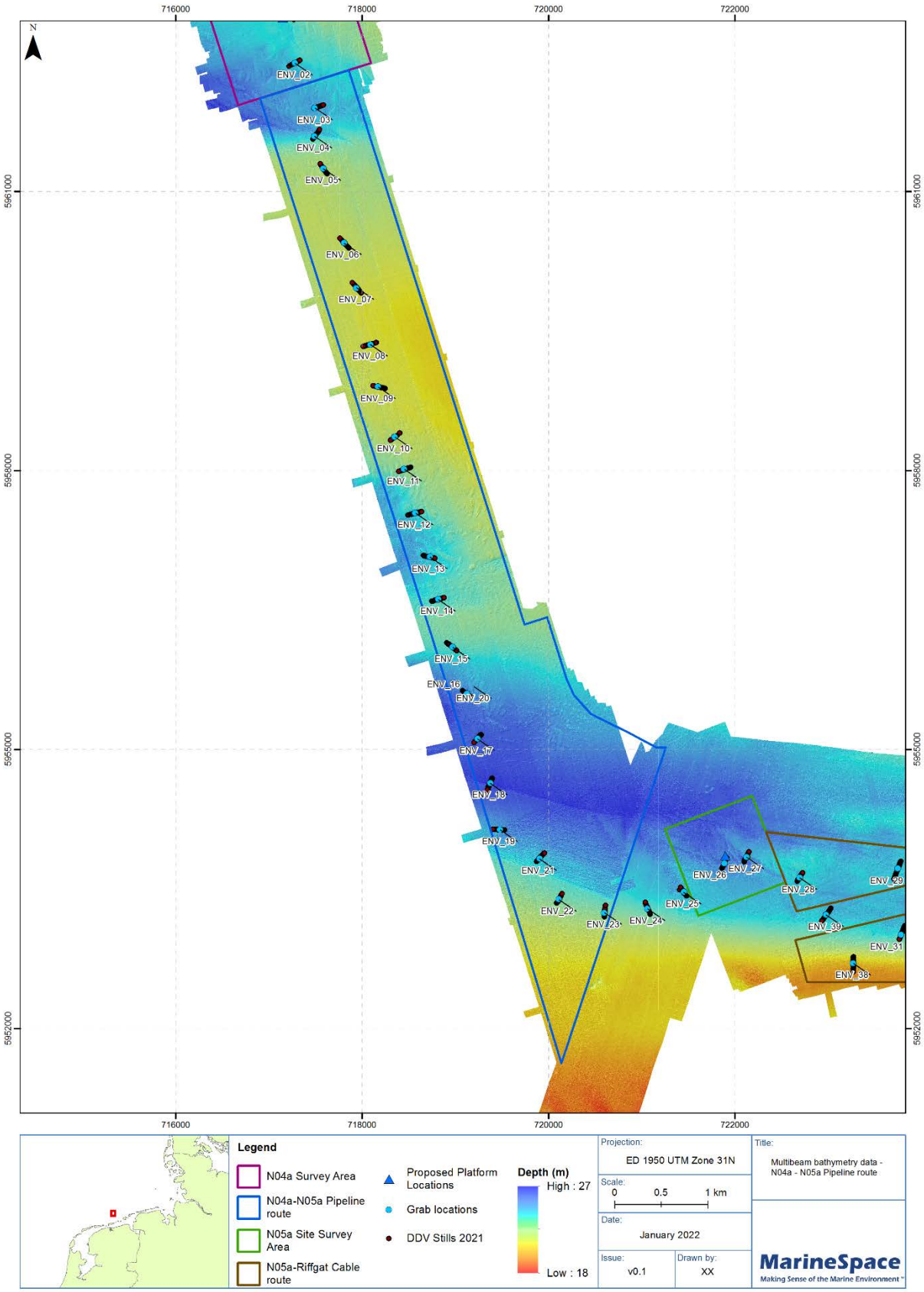
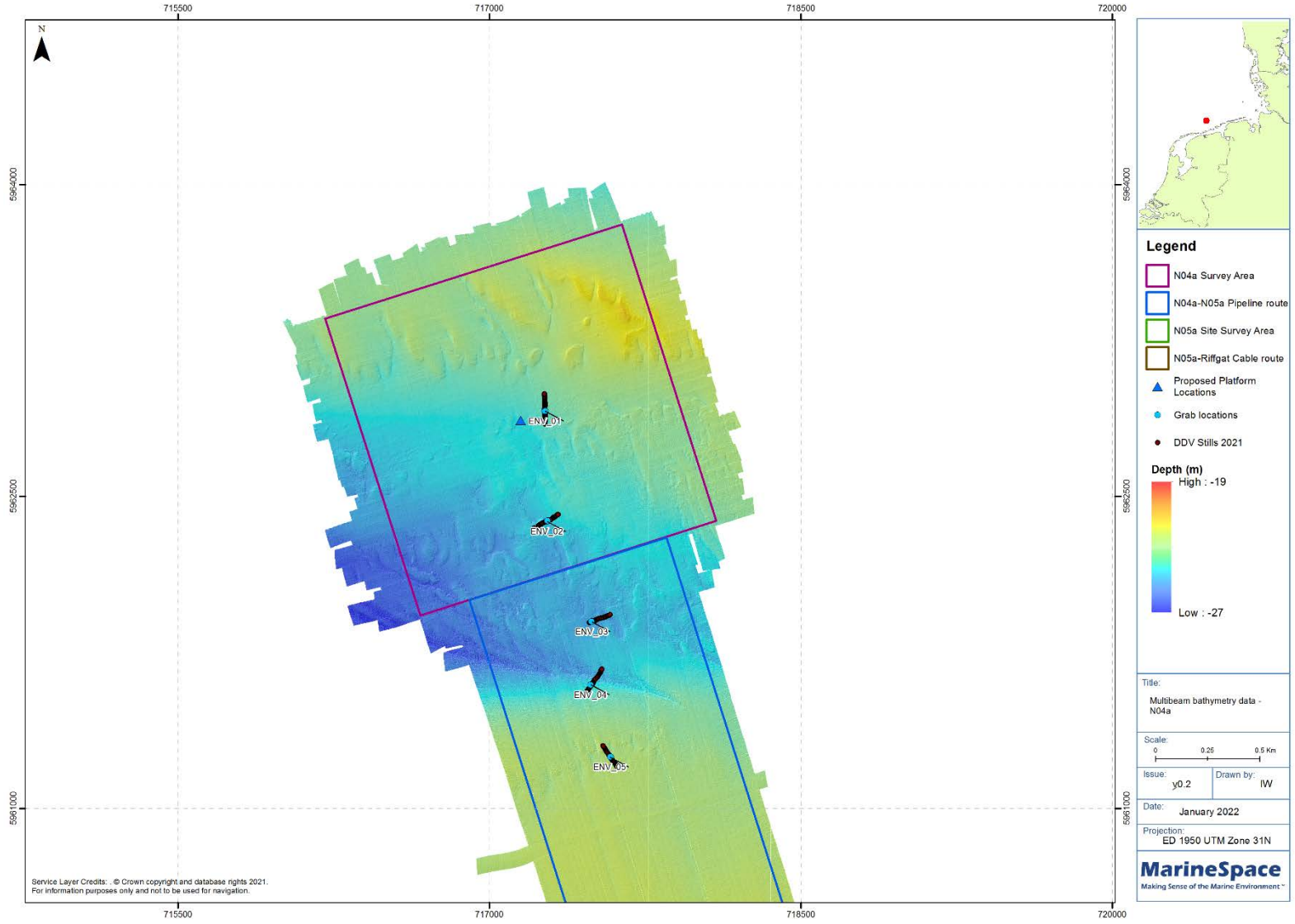


Figure 2.4: Bathymetry across N04a platform area



2.1.2. Seabed Features

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

2.1.2.1. N05a Platform Area Seabed Features Summary

Seabed sediments were interpreted within the northern half of the 1 km x 1 km survey area as comprising sand and clay. In the south of the survey area sediments were interpreted as comprising fine sand with shell fragments.

Outcrops of clay were interpreted within the survey area. These had a positive relief of up to 0.5 m above background seabed levels with measured gradients of up 6° on their flanks. 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. The closest contact to N05a platform location occurred 52 m north-north-east and was interpreted as boulder with height of less than 0.5 m.

Several contacts were interpreted as potential debris based on their shape/appearance on SSS records. The closest potential debris to the proposed N05a platform location occurred 191 m south and measured 1.1 m x 0.9 m x 0.1 m. A magnetic anomaly of 35 nT corresponded with the position of this potential item of debris. One item of linear debris was noted 217 m north-west, measuring 22 m in length, and has been interpreted as an abandoned wire/cable.

Several magnetic contacts were detected within the charted area. The closest to the proposed N05a platform location occurred 135 m east-south-east and measured 13 nT.

2.1.2.2. N05a-Riffgat OWF Cable Route Area Seabed Features Summary

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.). Coarse sand with shell fragment sediment was generally seen in the east of the narrow corridor of data, around the Riffgat OWF, while the main body of the survey area was split between fine 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 fine sand in the north.

Numerous SSS contacts were identified within the charted area, with the majority interpreted as boulders. Most of these contacts were identified within 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, but 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.

2.1.2.3. N04a-N05a Pipe Route Seabed Features Summary

Seabed sediments were interpreted within the charted area as fine sand with shell fragments, coarse sand with shell fragments, coarse sand and clay. Coarse sand with shell fragments was expected across most of the northern half of the route corridor with occasional areas of fine sand with shell fragments and the southern half was a mixtures of fine sand with shell fragments and sand and clay.

Bedforms (ripples) could be seen on the SSS data and also in the drop-down video (DDV) imagery coinciding with the areas interpreted as fine/coarse sand with shell fragments.

There were numerous SSS contacts with the majority interpreted as boulders within the charted area. Most of these contacts occurred within the areas where seabed sediment were interpreted as coarse sand and clay, although, occasional contacts were seen outside these areas. The most significant objects identified on the sonar were interpreted as shipwrecks with the largest occurring at 720466.2 m E 5952451.4 m N and measured 37.2 m x 10.9 m x 1.3 m on the 2021 data (40.1 m x 12.8 m x 1.1 m in 2019). The others occurred at 720532.8 m E 5952505.7 m N with dimensions of 18.4 m x 16.3 m x 0.8 m (19.1 m x 12.9 m x 0.2 m in 2019) and at 718929.6 m E 5955577.4 m N with dimensions of 24.1 m x 6.4 m x 2.9 m.

Several magnetic contacts correlated with the position of the most significant shipwreck described above. The largest of these anomalies occurred at 720466.0 m E 5952454.0 m N and measured 7570 nT. In addition to the magnetic contacts around the shipwreck location there was also a trail of magnetic contacts trending west-southwest/east-north-east through the shipwreck location for approximately 3.0 km. No corresponding linear feature was observed on the SSS data.

Several items of linear debris were also interpreted within the chart area. The most significant occurred at 719660.3 m E 5953546.9 m N and measured 170 m in length and was interpreted as an abandoned wire/cable. Several corresponding magnetic anomalies matched the position of this item of linear debris and there were also further magnetic contacts extending to the north-east indicating the linear debris maybe larger that the section visible on the seabed having become buried under the fine sand.

Numerous magnetic contacts were detected within the charted area. There were four locations at which a linear series of magnetic contacts crossed the pipe route corridor that did not match the position of any of the Client provided database positions of cables/pipelines. Further investigation of these (search for diffractions on SBP to check burial depth) is required once a proposed route is

selected. Other recorded magnetic anomalies were not associated with any interpreted seabed feature. They were therefore interpreted as relating to other buried objects.

2.1.2.4. N04a Platform Area Seabed Features Summary

Seabed sediments were interpreted within the northern half of the 1.5 km x 1.5 km survey area as coarse sand with shell fragments. In the north of the survey area sediments were expected to be composed of fine sand with shell fragments. Megaripples could be seen on the SSS data within the areas where seabed sediments were interpreted as coarse sand with shell fragments.

There were occasional SSS contacts in the south of the survey area, interpreted as boulders. The closest contact to N04a platform location occurred 686 m south and is interpreted as a boulder with a height of less than 0.5 m. Based on the SSS data, the N04a dome was located 2 m from the proposed N04a platform location and measured 6.0 m x 5.6 m x 2.4 m.

Several magnetic contacts were detected within the charted area. The closest to the proposed N04a platform location occurred 254 m north-east and measure 18 nT. This formed part of a string of magnetic contacts that crossed the survey area in a west-north-west/east-south-east orientation. ONE-Dyas BV provided database position of the abandoned Winterton to Borkum cable, which occurred approximately 260 m to the north-north-east of the string of magnetic contacts. There was no evidence of the abandoned cable on SSS or MBES data.

2.1.3. Shallow Geology

In this report, shallow geology refers to geology that is 0 – 50 m below seabed (BSB). Geophysical results are summarised below and are presented in full separately (GEOxyz, 2021a; 2021b; 2022a; 2022b)

2.1.3.1. N05a Platform Area Shallow Geology Summary

Interpretation of shallow soils across the N05a platform survey area was based upon pinger and 2D UHR data. Additional information was gained from vibrocore logs and borehole N5-1. Borehole N5-1 was located 751 m north-north-west of the proposed N05a platform location and was acquired by Fugro in November 2016. Vibrocores VC_13 and VC_14 were located within the 1 km x 1 km survey area, with the VC_13 sample closest to the proposed N05a platform location, 56 m to the south.

The uppermost mappable unit was confirmed as fine sand with occasional shell fragments in vibrocore logs. The unit was mapped from pinger data and was only mappable when thicker than 0.5 m: it was likely to be present outside the mapped area (north-east of survey area) but at thicknesses below 0.5 m. The unit was 0.6 m thick at the proposed N05a platform location.

The 2D UHR data has been interpreted based on changes in acoustic signature within the survey area. Geophysical contrasts were subtle: a predictable consequence of the similar geological nature of the units sampled within the borehole.

Three sub units within the Quaternary sequence have been interpreted within the area based on the acoustic nature of the sparker data.

The uppermost unit, (besides surficial sand mapped from the Pinger data), present within the survey area was interpreted to infill a south-south-east/north-north-west orientated channel and comprise fine sand based on vibrocore data and seismic characteristics. The unit was absent in the south-west and north-east of the survey area. At the proposed N05a platform location the unit occurred 15.5 m BSB.

Below this exists a chaotic unit, interpreted to represent a succession of interbedded medium to high strength sandy clay and medium dense to dense sand when tied to the N5-1 borehole. At the proposed N05a platform location this unit extended to a depth of 56.5 m BSB. Within the survey area this unit undulated between 4 m and 72 m BSB.

Below this, an acoustically higher amplitude unit with intermittent reflectors, interpreted to represent internal layering within the unit, was present which also in places had a chaotic, low amplitude response. This unit was expected to comprise dense, poorly sorted gravelly sands and high strength clays with occasional cobbles or boulders. This unit extend to the limit of interpretation of 0.2 seconds (187 m BSB) at the proposed N05a platform location.

This extended to the base of the Quaternary sequence. Caution should be taken when drilling in the Quaternary sequence as boulders and cobbles may be present throughout. There were no diffractions that could be attributed to individual boulders at or close to the proposed N05a platform location. However, the presence of boulders on the seabed and the generic possibility of boulders within the Quaternary sediments mean that, despite the lack of direct seismic evidence, the presence of buried boulders at the proposed N05a platform location is possible.

2.1.3.2. N05a-Riffgat OWF Cable Route Area Seabed Features Summary

Interpretation of the shallow soils is based upon sub-bottom profiler dataset in conjunction with borehole and vibrocore data.

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.

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

2.1.3.3. N04a-N05a Pipe Route Seabed Features Summary

Interpretation of the shallow soils was based upon sub-bottom profiler dataset in conjunction with borehole and vibrocore data.

The unit of fine to medium sand with rare to occasional shell fragments was generally thicker in the north of the route corridor. It was absent (or less than 0.5 m thick) in places and at VC_07 and VC_09 under a thin surficial layer of sand and very stiff clay. At the N04a platform location the unit was

1.9 m thick and at the N05a platform location the unit was 0.6 m thick. In places the unit was of greater internal complexity, especially where the mapped unit formed a bank containing sub-units.

The mapped unit was sub-cropped by a sequence of variable composition. Preliminary vibrocore logs showed that this sub-crop predominantly comprised fine to medium sand with rare shell fragments except for some areas in the south of the route corridor where the subcrop was more clay prone and was interpreted to be the infill of a broad channel.

2.1.3.4. N04a Platform Area Shallow Geology Summary

Interpretation of shallow soils across the N04a platform survey area was based upon pinger and 2D UHR data. Additional information was gained from Vibrocore VC_01 and borehole N5-1. Borehole N5-1 was located 9.4 km south-south-east of the proposed N04a platform location and was acquired by Fugro in November 2016. Vibrocore VC_01 was located within the 1.5 km x 1.5 km survey area, 139 m to the south-south-east of the proposed N04a platform location.

The uppermost unit was expected to comprise fine to coarse sand with rare to occasional shell fragments based on VC_01. The unit was mapped from pinger data and varied in thickness across the survey area from less than 0.5 m in the south of the survey area to 4.2 m in thickness in the north of the survey area. At the N04a platform location the unit was expected to be 1.9 m in thickness.

The sparker 2D UHR data was interpreted based on changes in acoustic signature within the survey area. Two sub-units within the Quaternary sequence were interpreted within the areas based on the acoustic signature of the sparker data.

The uppermost unit was interpreted to represent a succession of interbedded medium to high strength sandy clay and medium to dense sand based on the N5-1 borehole and Vibrocore VC_01. At the proposed N04a platform location, this unit extended to a depth of 5.9 m BSB. Within the survey area this unit undulated between 3 m and 24 m BSB.

Below this level, the seismic data had a variable appearance ranging from intermittent discontinuous reflectors with relatively high amplitude response with a chaotic appearance. The unit was expected to comprise dense, poorly sorted gravelly sands and high strength clays with occasional cobbles and or boulders. This unit extended to the limit of 0.2 seconds (206 m BSB) at the proposed N04a platform location.

Caution should be taken when drilling in the Quaternary sequence as boulders and cobbles may be present throughout the Quaternary sequence. There were no diffractions that could be attributed to individual boulders at or close to the proposed N04a platform location. However, within the greater survey area numerous boulders were observed at seabed where the surficial sand unit thinned or was absent and the generic possibility of boulders within the Quaternary sediments means that, despite the lack of direct seismic evidence, the presence of buried boulders at the proposed N04a platform location is possible.

2.2. Seabed Imagery Observations

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

Sediments were confirmed to comprise rippled fine sand within areas described by the SSS data as 'fine sand with shell fragments'. Rippled coarse sand and areas of dense sand mason worms *Lanice conhilega* were generally seen within areas defined by the SSS data as 'coarse sand'. A mixture of coarse sand with scattered cobbles and boulders were observed in areas described as 'coarse sand and clay'.

A selection of seabed images, together with descriptions and positions are presented in 0.

2.2.1. N04a Platform Area Imagery Observations Summary

Visible fauna identified within the N04a platform area, identified to the lowest possible taxon included:

- Annelida (*Lanice conchilega*);
- Arthropoda (Caridea, Decapoda, (*Liocarcinus* sp., Paguroidea);
- Cnidaria (Anthozoa, *Cylista* sp.);
- Echinodermata (*Asterias rubens*, Asteroidea, Ophiuroidea);
- Indeterminate turf.

Review of the video footage revealed an additional 4 taxa within the N04a platform area. This included ray-finned fish (Actinopterygii), sand eels (*Ammodytes* sp.), flat fish (Pleuronectiformes) and the common starfish (*Astropecten irregulars*).

The epifaunal community within the N04a platform area was impoverished, which is typical of a sand and gravelly sand habitat. The most frequently observed species within the DDV stills was the sand mason worm *L. conchilega* (83%), however, there were only 4 DDV stills which were considered to have high density of *L. conchilega*.

Sediment particles larger than 64 mm (cobbles and boulders) were not observed from seabed imagery. Similarly, no typical species associated with Reefs (H1170) were seen within seabed imagery or seabed sampling observations.

As there were no hard substrate areas or typical species identified from the 2021 DDV data, the areas observed within the N04a platform areas could not be defined as Reefs (H1170) under the Dutch MANFQ criteria (MANFQ, 2014a)**.**

Sediments within the N04a platform location were described as either sand or gravelly sand, which are considered as having sufficient sand content to meet the requirements of the H1110_C habitat subtype. Depths within and around the N04a platform location ranged from 20.6 m LAT to 26.3 m LAT. Review of the macrofauna revealed the presence of 2 species considered typical of the habitat (see Section 4.2.1). *A. irregularis* and *L. conchilega* are both typical species of H1110_C permanently

flooded sandbanks and were observed along both transects ENV01 and ENV02. Both species are considered as a constant species with an indication of good abiotic status. *L. conchilega* is also considered to indicate good biotic structure.

Although depth, sediment and some typical species were characteristic of a sandbank habitat, there were no defined sandbank features identified in this area (see Section 2.1.2.4). Consequently, this area is unlikely to represent EC Habitats Directive Annex I habitat subtype H1110_C.

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 (IUCN, 2021) within the N04a platform survey area.

2.2.2. N04a-N05a Pipe Route Seabed Imagery Observations Summary

Visible fauna identified within the N04a-N05a pipe route, identified to the lowest possible taxon included:

- Annelida (*Hyalinoecia tubicola*, *Lanice conchilega*, *Sabellaria* sp.);
- Arthropoda (Atelecyclidae, Caridea, Decapoda, *Liocarcinus* sp., Majidae, Paguroidea);
- Chordata (Actinopterygii, *Ammodytes* sp.,*Callionymus lyra*, *Pomatoschistus pictus*, Syngnathidae);
- Cnidaria (Actiniaria, Anthozoa, Cerianthidae, *Cylista* sp., Hydrozoa, Plumulariidae);
- Echinodermata (*Asterias rubens*, Asteroidea, *Astropecten irregularis*, Ophiuroidea);
- Mollusca (bivalve siphons);
- Indeterminate tube and turf.

Review of the video imagery, revealed 2 additional fish taxa along the N04a-N05a pipe route: Pogge (*Agonus cataphractus*) and flatfish (Pleuronectiformes).

The most frequently observed taxa within the images was the sand mason worm *L. conchilega* (66%) followed by the burrowing anemone *Cylista* sp. (23%).

The epifaunal community along the pipe route was impoverished, which is typical of a sand and gravelly sand habitat. Areas described as coarse sand and finer sand recorded 0.07 taxa per image. However, areas of coarse sand with high density *L. conchilega* recorded a higher number of taxa, with 0.23 taxa per image. In the 4 images where scattered cobbles were observed, a total of 6 taxa were observed recording 1.50 taxa per image.

Sand eels *Ammodytes* sp. were observed in 3 DDV stills along transects ENV08 and ENV09. However, review of the video footage for the entire pipeline route revealed the presence of sand eels at 16 stations. Shoals were observed at transects ENV17 and ENV18, while at transect ENV07 individuals were seen leaving the sediment upon disturbance from the DDV frame.

Sediment particles larger than 64 mm (cobbles and boulders) were observed within 5 DDV stills at Stations ENV12, ENV14, ENV21 and ENV25. These occurrences represented small areas of a few scattered cobbles or isolated cobbles. Only the isolated cobble at Station ENV14 had attached

epifauna, which included hydroids (Plumulariidae) and *Sabellaria* sp., which is considered a typical species of Reefs (H1170).

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

Sediments within the N04a-N05a pipe route ranged from sandy mud to gravelly muddy sand, however, only 19 stations (ENV03-ENV16, ENV19, ENV21-24) were described as containing sufficient sand content to meet the requirements of the H1110_C habitat subtype, which were recorded across both 'fine sand with shell fragments' and 'coarse sand' sediment boundaries. Water depths within and around the N04a-N05a pipe route ranged from 20.6 m LAT and 26.8 m LAT.

The following species observed from the DDV are considered typical species of H1110_C permanently flooded sandbanks: *A. irregularis*, *C. lyra* and *L. conchilega*. A minimum of 1 typical species (*L. conchilega*) was observed along every transect and a maximum of 2 was recorded along transects ENV08, ENV09, ENV15, ENV17 and ENV21. All observed typical species are considered to be constant species and indicate good abiotic status. In addition, *L. conchilega* is considered a constant species indicating good biotic structure.

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 2.1.2.3). Consequently, this area is unlikely to represent EC Habitats Directive Annex I habitat subtype H1110_C.

Sabellaria sp. was observed, in 1 DDV still at transect ENV14, forming a thin layer on an isolated cobble. The observed *Sabellaria* sp. could be *Sabellaria spinulosa* and was the only potential sighting a of a typical species associated with Reefs (H1170) habitat.

Due to the minimal extent and lack of elevation of the observed *Sabellaria* sp., this 1 occurrence did not represent Annex I biogenic reef.

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 (IUCN, 2021) within the N04a-N05a pipe route.

2.2.3. N05a Platform Area Seabed Imagery Observations Summary

Visible fauna identified within the N05a platform area, identified to the lowest possible taxon included:

- Annelida (*Lanice conchilega*);
- Arthropoda (*Liocarcinus* sp.);
- Chordata (Actinopterygii, Pleuronectiformes) ;
- Cnidaria (Cylista sp., Pennatulacea) ;
- Echinodermata (Asteroidea, *Ophiura albida*, Ophiuroidea);
- Indeterminate turf.

Review of the video footage revealed an additional 3 taxa within the N05a platform area. This included shrimp (Caridea), the common dab (*Limanda limanda*) and the brittle star *Ophiura ophiura*.

The most frequently observed taxa within the DDV stills was the sand mason worm *L. conchilega* (92%) followed by burrowing anemone *Cylista* sp. (45%) and brittle stars Ophiuroidea (35%).

There were 5 DDV stills which were considered to have high density of *L. conchilega*, all of which occurred along Transect ENV26.

Sediment particles larger than 64 mm (cobbles and boulders) were not observed from seabed imagery. Similarly, no typical species associated with Reefs (H1170) were seen within seabed imagery or seabed sampling observations.

As there were no hard substrate areas or typical species identified from the 2021 DDV data, the areas observed within the N05a platform area could not be defined as Reefs (H1170) under the Dutch MANFQ criteria (MANFQ, 2014a)**.**

Sediments within the N05a platform location were described as either sandy gravelly mud or muddy gravelly sand, however, only muddy gravelly sand is considered as having sufficient sand content to meet the requirements of the H1110_C habitat subtype. Water depths within and around the N05a platform location ranged from 23.7 m to 26.2 m (LAT). Review of the macrofauna revealed the presence of species considered characteristic of the habitat, in particular *L. conchilega*.

Although depth, sediment and some associated fauna were characteristic of a sandbank habitat, there were no defined sandbank features identified in this area (see 2.1.2.1). Consequently, this area is unlikely to represent EC Habitats Directive Annex I habitat subtype H1110_C.

Only one individual of Pennatulacea was observed within the N05a platform area, at Transect ENV26. 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 (IUCN, 2021) within the N05a platform survey area.

2.2.4. N05a-Riffgat OWF Cable Roue Seabed Imagery Observations Summary

Visible fauna identified within the N05a-Riffgat OWF cable route, identified to the lowest possible taxon 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.

Sediment particles larger than 64 mm (cobbles and boulders) were 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 *M. 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 2.5 and Figure 2.6). 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.

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.

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 2.5 and Figure 2.6). 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 2.1.2.2). 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. These areas, therefore, could not be defined as Reefs (H1170).**

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.

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.

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 2.1.2.2). Consequently, this area is unlikely to represent EC Habitats Directive Annex I habitat subtype H1110_C.

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)**.**

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 (IUCN, 2021) within the N05a-Riffgat OWF cable route area.

Figure 2.5: Areas of potential stony reef within N05a-Riffgat OWF cable route, Stations ENV20, ENV28-30, ENV33-34

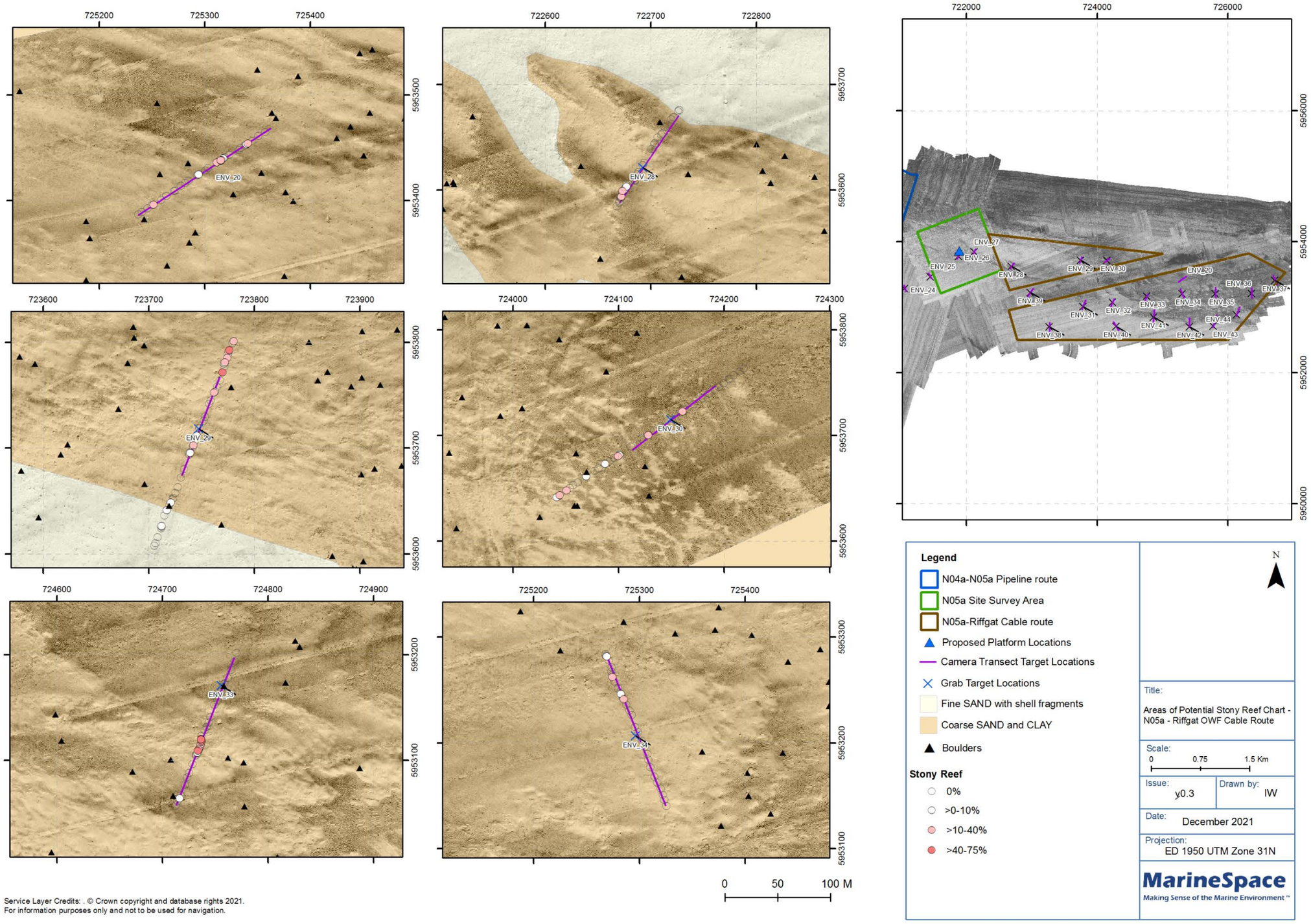
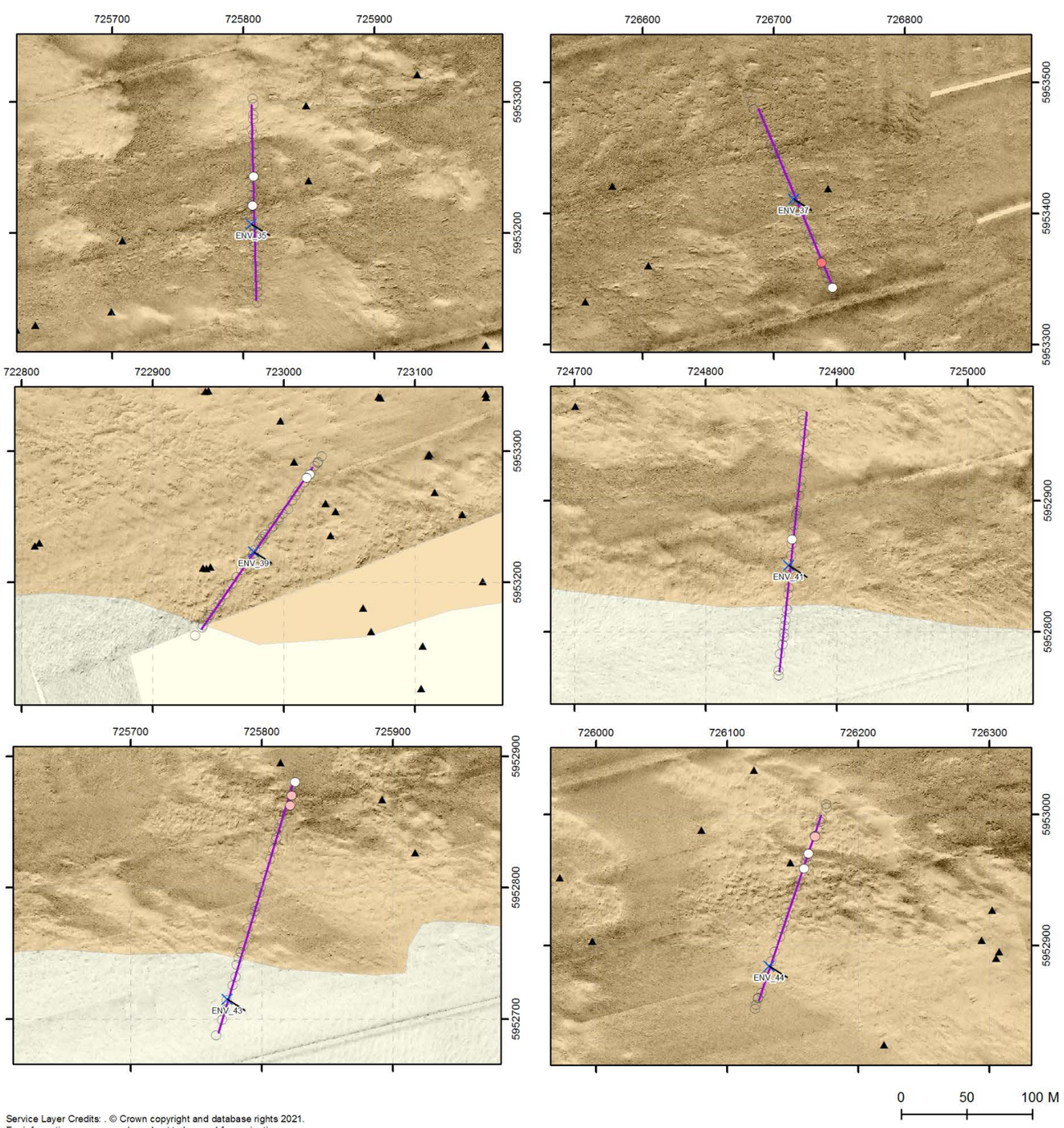
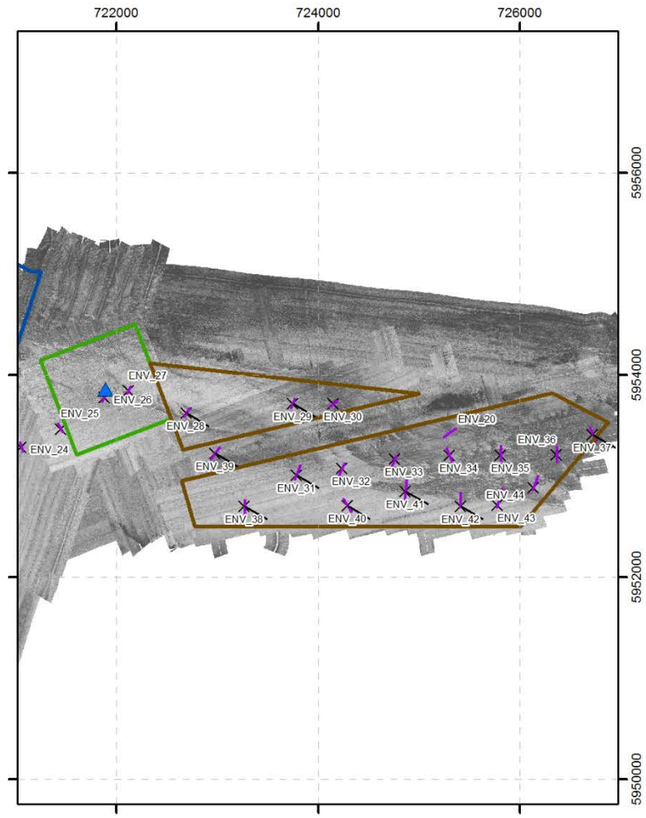


Figure 2.6: Areas of potential stony reef within N05a-Riffgat OWF cable route, Stations ENV36, ENV37, ENV39, ENV41, ENV43-44





Legend

- N04a-N05a Pipeline route
- N05a Site Survey Area
- N05a-Riffgat Cable route
- Proposed Platform Locations
- Camera Transect Target Locations
- Grab Target Locations
- Fine SAND with shell fragments
- Coarse SAND and CLAY
- Boulders

Stony Reef

- 0%
- >0-10%
- >10-40%
- >40-75%

N

Title: Areas of Potential Stony Reef Chart - N05a - Riffgat OWF Cable Route

Scale: 0 0.75 1.5 Km

Issue: y0.3

Drawn by: IW

Date: December 2021

Projection: ED 1950 UTM Zone 31N

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2.3. Sediment Characteristics

2.3.1. Particle Size Analysis

The results of the particle size analysis (PSA), determined using an in-house Beckman Coulter LS13 320 particle sizer, in addition to wet and dry sieving, are presented in Table 2.1, with spatial variation in percentage fines, sand and gravels in Figure 2.7. Full results of particle size distributions for each sampled station are presented in 0.

The PSA results generally supported the geophysical interpretation, field observations and seabed imagery. High proportions of sand (≥63 µm - <2000 µm fraction) were recorded across the Project and accounted for 70% at Station ENV02 to 99.8% at Station ENV04 of the total sediment. Gravel (>2000 µm) ranged between <0.1% at Stations ENV31 and ENV40 and 27.8% at Station ENV02. Fines (<63 µm) generally comprised less than 7% of total sediment, with the exception of Stations ENV20, ENV28, and ENV29 where fines comprised between 12.8% and 16.0% of the total sediment.

Mean particle diameter (D50) varied between 173 µm at Station ENV28 and 1,134 µm at Station ENV11 with a mean of 412 µm (±243 SD) across the Project. Generally, smaller particle diameter was found across the 'fine sand with shell fragments' and larger diameters across the 'coarse sand' and 'coarse sand with clay' sediment boundaries described from the geophysical data.

Sediments were described as ranging from very poorly sorted to moderately well sorted (Folk & Ward, 1957). Very poorly sorted to poorly sorted sediments were generally found within the 'coarse sand and clay' sediment boundary. Moderately sorted sediments were generally found across both 'coarse sand' and 'coarse sand with clay' sediment boundaries, while moderately well sorted sediments were typically found at stations located within the 'fine sand with shell fragments' sediment boundary. Based on the Wentworth classification (1922), sediments were classified as ranging from fine sand to coarse sand. Stations within the fine sand sediment boundary were classified as 'fine sand with shell fragments' and those within the 'coarse sand' sediment boundary as coarse sand. However, within the 'coarse sand and clay' sediment boundary, sediments were more variable: described as either fine sand, medium sand or coarse sand.

Under the Folk classification, sediments at the majority of stations were classified as either slightly gravelly sand or gravelly sand (Folk, 1954). The exceptions were Stations ENV31 and ENV30 described as sand, Stations ENV28 and ENV29 described as slightly gravelly muddy sand and Station ENV20 classified as gravelly muddy sand. All of sites were within the sediment boundary 'coarse sand and clay'.

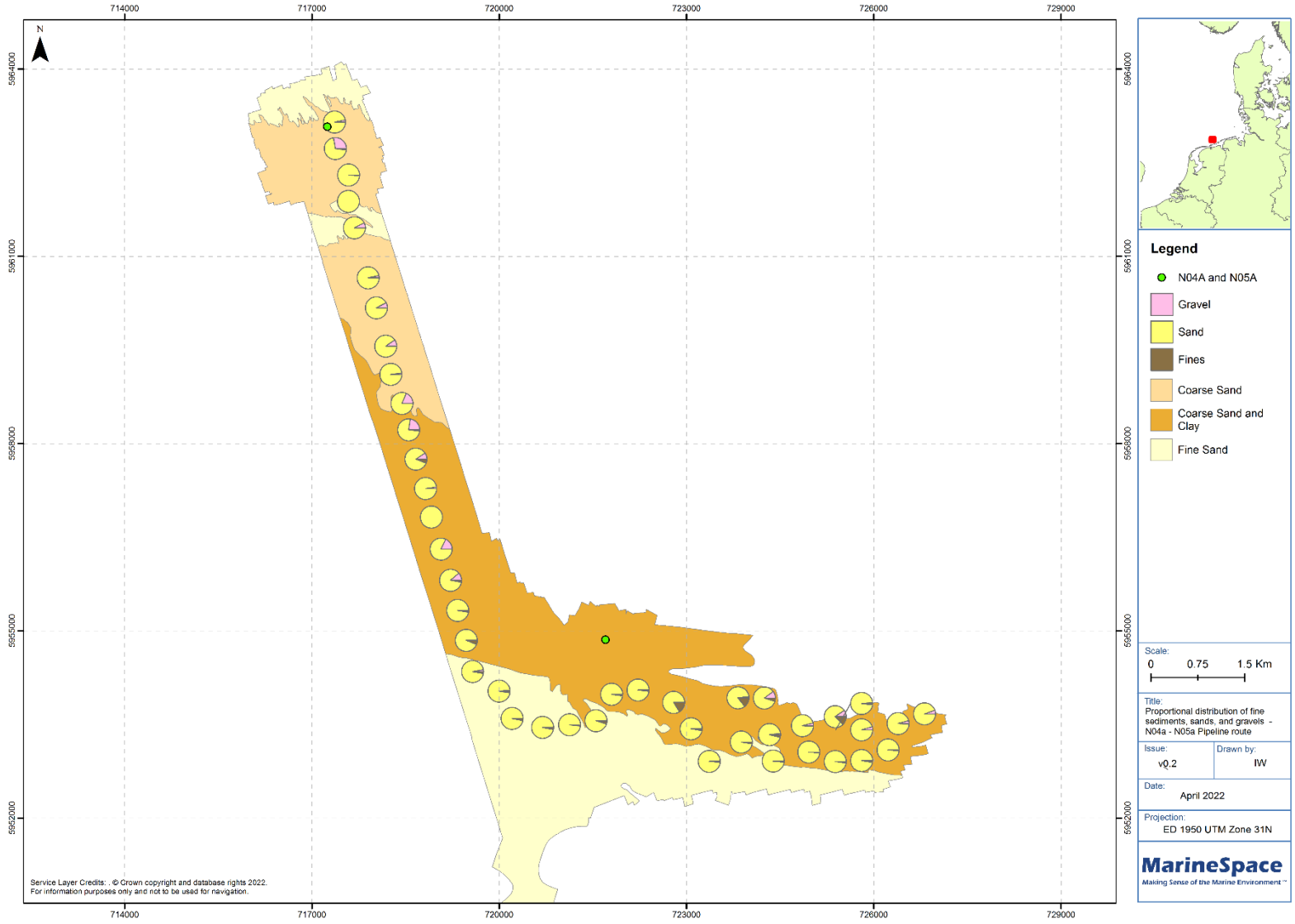
The PSA results for the 2019 survey revealed a wider mean particle diameter range which varied between 50 µm and 2154 µm. Correspondingly, sediment descriptions ranged more greatly from coarse silt to granule (Wentworth, 1922). However, sediments were similarly sorted as those in the current survey (Folk & Ward, 1957). Overall, PSA results fit within the spectrum observed in the comparison survey.

Table 2.1: Summary of Particle Size Analysis

Station	Sediment Boundary[1]	Mean Diameter (µm)	Mean Diameter (phi)	Gravel (%)	Sand (%)	Fines (%)	Wentworth Classification of Mean Grain Size	Folk and Ward Sorting	Folk Classification
N04a Platform Area									
ENV01	Coarse sand	633	0.66	3.2	96.2	0.6	Coarse Sand	Moderately Sorted	Slightly Gravelly Sand
ENV02	Coarse sand	922	0.12	27.8	70.0	2.2	Coarse Sand	Poorly Sorted	Gravelly Sand
N04a-N05a Pipe Route									
ENV03	Fine sand with shell	308	1.70	0.1	98.6	1.2	Medium Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV04	Fine sand with shell	243	2.04	0.2	99.8	0.0	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV05	Coarse sand	674	0.57	7.1	92.2	0.7	Coarse Sand	Moderately Sorted	Gravelly Sand
ENV06	Coarse sand	577	0.79	3.2	96.3	0.5	Coarse Sand	Moderately Sorted	Slightly Gravelly Sand
ENV07	Coarse sand	591	0.76	7.5	91.9	0.6	Coarse Sand	Moderately Sorted	Gravelly Sand
ENV08	Coarse sand	668	0.58	9.7	89.8	0.5	Coarse Sand	Poorly Sorted	Gravelly Sand
ENV09	Coarse sand	537	0.90	1.9	97.5	0.6	Coarse Sand	Moderately Sorted	Slightly Gravelly Sand
ENV10	Coarse sand and clay	899	0.15	18.5	81.0	0.4	Coarse Sand	Poorly Sorted	Gravelly Sand
ENV11	Coarse sand and clay	1,134	-0.18	22.7	75.4	2.0	Very Coarse Sand	Poorly Sorted	Gravelly Sand
ENV12	Coarse sand and clay	371	1.43	9.4	84.6	6.0	Medium Sand	Poorly Sorted	Gravelly Sand
ENV13	Coarse sand and clay	501	1.00	2.3	97.0	0.7	Coarse Sand	Moderately Sorted	Slightly Gravelly Sand
ENV14	Coarse sand and clay	395	1.34	0.5	98.6	0.8	Medium Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV15	Coarse sand and clay	844	0.24	17.7	81.7	0.7	Coarse Sand	Poorly Sorted	Gravelly Sand
ENV16	Coarse sand and clay	694	0.53	11.1	86.0	2.9	Coarse Sand	Poorly Sorted	Gravelly Sand
ENV17	Coarse sand and clay	232	2.11	0.1	97.4	2.5	Fine Sand	Moderately Sorted	Slightly Gravelly Sand
ENV18	Coarse sand and clay	454	1.14	0.7	93.1	6.2	Medium Sand	Poorly Sorted	Slightly Gravelly Sand
ENV19	Fine sand with shell	206	2.28	2.6	94.4	2.9	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV21	Fine sand with shell	197	2.34	1.4	96.2	2.3	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV22	Fine sand with shell	204	2.29	0.1	96.6	3.3	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV23	Fine sand with shell	201	2.32	0.2	96.5	3.3	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV24	Fine sand with shell	202	2.31	0.2	97.9	1.9	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV25	Fine sand with shell	199	2.33	0.4	94.8	4.8	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
N05a Platform Area									
ENV26	Coarse sand and clay	213	2.23	0.7	96.9	2.4	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV27	Coarse sand and clay	211	2.24	0.1	97.9	2.0	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
N05a-Riffgat OWF Cable Route Area									
ENV20	Coarse sand and clay	218	2.20	9.4	77.9	12.8	Fine Sand	Very Poorly Sorted	Gravelly Muddy Sand
ENV28	Coarse sand and clay	173	2.53	0.9	83.1	16.0	Fine Sand	Poorly Sorted	Slightly Gravelly Muddy Sand
ENV29	Coarse sand and clay	212	2.24	1.4	84.0	14.6	Fine Sand	Poorly Sorted	Slightly Gravelly Muddy Sand
ENV30	Coarse sand and clay	347	1.53	10.0	85.1	4.9	Medium Sand	Poorly Sorted	Gravelly Sand
ENV31	Coarse sand and clay	198	2.33	0.0	97.3	2.7	Fine Sand	Moderately Well Sorted	Sand
ENV32	Coarse sand and clay	223	2.16	1.6	94.4	4.0	Fine Sand	Moderately Sorted	Slightly Gravelly Sand
ENV33	Coarse sand and clay	618	0.69	3.7	95.2	1.0	Coarse Sand	Moderately Sorted	Slightly Gravelly Sand
ENV34	Coarse sand and clay	322	1.64	1.1	96.8	2.1	Medium Sand	Moderately Sorted	Slightly Gravelly Sand
ENV35	Coarse sand and clay	528	0.92	4.4	94.6	0.9	Coarse Sand	Moderately Sorted	Slightly Gravelly Sand
ENV36	Coarse sand and clay	557	0.84	4.1	94.7	1.2	Coarse Sand	Moderately Sorted	Slightly Gravelly Sand
ENV37	Coarse sand and clay	624	0.68	5.3	93.9	0.7	Coarse Sand	Poorly Sorted	Gravelly Sand
ENV38	Fine sand with shell	250	2.00	0.3	98.2	1.5	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV39	Coarse sand and clay	192	2.38	0.4	96.7	2.9	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV40	Fine sand with shell	222	2.17	0.0	98.5	1.5	Fine Sand	Moderately Well Sorted	Sand
ENV41	Coarse sand and clay	438	1.19	0.8	98.1	1.1	Medium Sand	Moderately Sorted	Slightly Gravelly Sand
ENV42	Fine sand with shell	205	2.29	0.1	97.8	2.1	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV43	Fine sand with shell	202	2.31	0.2	96.8	3.0	Fine Sand	Moderately Well Sorted	Slightly Gravelly Sand
ENV44	Coarse sand and clay	299	1.74	0.1	98.5	1.4	Medium Sand	Moderately Sorted	Slightly Gravelly Sand
Minimum		**173**	**-0.18**	**0.03**	**70.0**	**0.0**	**Fine sand to very coarse sand**	**Very poorly sorted to moderately well sorted**	**Sand to gravelly sand**
Maximum		**1134**	**2.53**	**27.8**	**99.8**	**16.0**			
Mean		**412**	**1.50**	**4.4**	**92.7**	**2.9**			
SD		**243**	**0.80**	**6.5**	**7.2**	**3.5**			
2019 Survey (GEOxyz, 2019)									
Minimum		**50**	**-1.11**	**0.0**	**40.6**	**0.0**	**Coarse silt to granule**	**Very poorly sorted to moderately well sorted**	**Muddy sand to muddy sandy gravel**
Maximum		**2154**	**4.33**	**44.0**	**99.6**	**54.9**			
Mean		**366**	**1.77**	**4.3**	**91.8**	**3.9**			
SD		**373**	**0.89**	**8.6**	**13.5**	**10.3**			

1 Sediment boundaries defined by the geophysical surveys (GEOxyz, 2021b; 2021c; 2022a; 2022b).

Figure 2.7: Proportional contribution of fines, sand and gravel



2.3.2. Organic Matter, Organic Carbon and Moisture Content

The results of the TOM, TOC and moisture content are presented in Table 2.2. Loss on ignition (LOI) provides a coarse indication of TOM content, whilst TOC is measured as a percentage of the total weight and represents the carbon constituent of the organic matter. TOM within the surface sediment of the North Sea is a mixture of mostly reworked or oxidized, marine and terrestrial constituents (Wiesner *et al.*, 1990).

In the current survey TOM ranged from 1.2% at Station ENV05 to 7.8% at Station ENV44, with a mean of 3.76% (±1.32 SD). TOM values were higher than those recorded in the previous survey with all values exceeding the UKOOA (2001) background values for SNS, except for Station ENV05. In addition, the majority of stations all exceeded the UKOOA (2001) 95th percentile. LOI is one of the most widely used methods for measuring TOM, however, a large number of factors may influence its accuracy, such as furnace type, sample mass, duration and temperature of ignition and clay content of samples (Hoogsteen *et al.*, 2015). Therefore, TOC is used as a more accurate measure of carbon.

TOC ranged from 0.03% at Station ENV37 to 0.26% at Stations ENV20 and ENV29. These values were within the range recorded in the 2019 survey. These low values indicate an organically poor environment. TOC in surface sediments is an important source of food for benthic fauna, particularly deposit feeding organisms, which process sediment through the alimentary tract. Low TOC may reflect physical factors, such as sediment composition. Increase in organic matter is expected with an increase in fine particles, as such particles provide a large surface area for adsorption. This was apparent from the Spearman's rank correlation (Appendix F), which revealed a positive correlation between TOC and fines ($r = 0.75$, $p < 0.01$) and a negative correlation between TOC and sand ($r = 0.43$, $p < 0.01$).

Moisture content ranged from 13.5% at Station ENV02 to 32.2% at Station ENV33. These results were similar to those observed in the 2019 survey. Spearman's correlation revealed a positive correlation between moisture content and fines ($r = 0.33$, $p < 0.05$) and a negative correlation with mean diameter ($r = -0.55$, $p < 0.01$) and gravel ($r = -0.47$, $p < 0.01$).

Table 2.2: Summary of organic matter, carbon and moisture content

Station	Total Organic Matter[1] (%)	Total Organic Carbon (%)	Moisture Content (%)
N04a Platform Area			
ENV01	3.0	0.14	23.2
ENV02	3.2	0.08	13.5
N04a-N05a Pipe Route			
ENV03	4.7	0.08	24.1
ENV04	4.7	0.08	23.5
ENV05	1.2	0.08	18.9
ENV06	3.2	0.06	20.9
ENV07	1.9	0.07	17.9
ENV08	2.0	0.09	19.1
ENV09	2.2	0.06	21.9
ENV10	3.5	0.11	31.7
ENV11	4.0	0.08	18.1
ENV12	2.5	0.16	23.9
ENV13	5.5	0.07	21.1
ENV14	6.4	0.06	21.7
ENV15	4.3	0.08	18.3
ENV16	2.3	0.10	18.8
ENV17	3.6	0.13	25.0
ENV18	3.5	0.15	24.5
ENV19	2.9	0.10	30.9
ENV21	3.2	0.07	27.1
ENV22	3.9	0.10	26.2
ENV23	3.7	0.08	29.3
ENV24	4.4	0.08	27.8
ENV25	3.9	0.10	23.8
N05a Platform Area			
ENV26	3.6	0.11	25.0
ENV27	4.6	0.07	25.1
N05a-Riffgat OWF Cable Route Area			
ENV20	3.1	0.26	30.3
ENV28	4.5	0.13	27.9
ENV29	3.0	0.26	28.0
ENV30	2.3	0.23	16.7
ENV31	3.7	0.13	26.9
ENV32	2.9	0.13	23.7
ENV33	5.0	0.04	32.2
ENV34	3.4	0.07	22.7
ENV35	3.1	0.05	19.2
ENV36	3.5	0.06	20.5
ENV37	6.3	0.03	20.4
ENV38	5.4	0.06	28.3
ENV39	1.9	0.13	26.5
ENV40	5.7	0.06	25.3
ENV41	3.8	0.06	24.4

Station	Total Organic Matter[1] (%)	Total Organic Carbon (%)	Moisture Content (%)
ENV42	4.5	0.08	23.2
ENV43	3.6	0.12	25.0
ENV44	7.8	0.07	23.6
Minimum	**1.2**	**0.03**	**13.5**
Maximum	**7.8**	**0.26**	**32.2**
Mean	**3.76**	**0.10**	**23.78**
SD	**1.32**	**0.05**	**4.21**
2019 Survey (GEOxyz, 2019)			
Minimum	**0.4**	**0.04**	**15.40**
Maximum	**5.1**	**1.03**	**26.20**
Mean	**0.8**	**0.11**	**20.75**
SD	**0.9**	**0.18**	**2.93**
Background levels SNS (UKOOA, 2001)			
Mean	**1.18**	**NR**	**NR**
95th Percentile	**2.3**		
Key:	Below SNS background mean	Above SNS background mean	Above SNS background 95th percentile

1 TOM analysis conducted by loss of ignition following prior removal of carbonate.

2.4. Hydrocarbon Concentrations

2.4.1. Total Hydrocarbons and Alkanes

Table 2.3 presents a summary of the hydrocarbon analyses. Total hydrocarbon (THC) concentrations (including n-alkanes, pristane, phytane, unresolved complex mixture (UCM) and PAH) ranged from 0.4 µg g^{-1} at Station ENV07 to 12.4 µg g^{-1} at Station ENV39, with a mean of 3.4 µg g^{-1} (±2.8 SD). Grubb's test revealed Station ENV39 as a high outlier (Appendix F). However, the recorded THC concentrations were comparable with those recorded in the comparison survey (GEOxyz, 2019). To put these values in a wider regional context, UKOOA (2001; UKOOA, 2001) reported a mean THC concentration of 4.3 µg g^{-1} (measured by GC) for stations over 5km from existing infrastructure in the southern North Sea (SNS) sampled between 1975 and 1995. THC concentrations exceeded the SNS mean at 13 stations (ENV18-20, ENV22-25, ENV29-30, ENV32 and ENV39, ENV42-43), however, only 1 station (ENV39) exceeded the SNS UKOOA 95th percentile of 11.4 µg g^{-1}.

THC concentrations were generally higher at stations within the 'fine sand' and 'coarse sand and clay' sediment boundaries. Spearman's rank correlation found a positive correlation between THC and fines ($r = 0.42$, $p < 0.01$), THC and TOC ($r = 0.54$, $p < 0.001$) and a negative correlation between THC and mean particle diameter (µm) ($r = -0.58$, $p < 0.001$). This further supports the intrinsic link between greater surface area provided by fine particles and organic fractions resulting in increased adsorption of hydrocarbons. The closest well to ENV39, recording the highest THC concentration, is located approximately 1.9 km away and is therefore unlikely to have contributed to the recorded concentration at this site.

It has been previously shown that benthic macrofauna suffer adverse effects when THC concentration is in excess of 50 µg g^{-1} (UKOOA, 2002; Kjeilen-Eilertsen *et al.*, 2004; UKOOA, 2005) and as such this value represents the threshold above which hydrocarbons are expected to have a

Significant Environmental Impact (SEI). Gerrard *et al*., (1999) reviewed several studies on the effect of macrobenthos from hydrocarbon contamination and identified a range of threshold values for ecological effects in the North Sea. Gerrard *et al*., (1999) noted a change in community composition to be possible at THC concentrations between 0.8 µg g^{-1} and 10 µg g^{-1}, reduced faunal diversity between 3 µg g^{-1} and 109 µg g^{-1} and that a SEI, identified by the prevalence of opportunistic species, would not be expected until anywhere between 31 µg g^{-1} and 291 µg g^{-1}. The THC concentrations recorded in this survey were below thresholds which are expected to have SEI.

Analysis of GC chromatograms, determined by GC-FID, can provide understanding of the distribution of hydrocarbons. GC-FID chromatograms can give an indication to the origin of hydrocarbons in marine sediment and offer an illustration of the degree to which they are weathered. Chromatograms for individual samples, show signal strength against eluting time. Peaks in the chromatograms may correspond to individual n-alkanes. The area beneath the trace constitutes the UCM that could not be resolved by GC, which remain after substantial weathering and biodegradation of mostly petrogenic inputs to the sediment (McDougall, 2000).

GC chromatogram traces at most stations presented a consistent pattern of very low-level, high molecular weight (HMW) resolved n-alkanes and UCM ranging from nC_{20} to nC_{26}. Hydrocarbons in the molecular weight range nC_{24} to nC_{36} commonly originate from terrestrial plant sources (Harborne, 1999) or may represent the residue of highly weathered and biodegraded petrogenic material including natural seeps, shipping discharge, oil and gas exploration and extraction (McDougall, 2000; Bouloubassi *et al.*, 2001). UCM ranged from 0.3 µg g^{-1} and Station ENV07 to 7.5 µg g^{-1} at Station ENV29 and accounted for 44% and 90% of THC across all stations, indicating that the majority of hydrocarbons were well weathered. The comparison survey also revealed a similar weathered High Molecular Weight (HMW) UCM profile suggesting that the weathered extent of the hydrocarbons was typical of the wider area.

Further insight into the origin of hydrocarbons in marine sediment may be gained by measuring concentrations of individuals alkanes. Total n-alkane concentrations (nC_{10-37}) are presented in Table 2.3, with details of individuals alkanes in Table 2.4 to Table 2.5. Additionally, their distribution at each stations is presented as bar charts in Appendix G. Total n-alkane concentrations ranged between below limit of detection (<0.001 µg g^{-1}) and 0.423 µg g^{-1} and were generally lower than the comparison survey (GEOxyz, 2019). Concentrations exceeded the SNS UKOOA mean only at three stations (ENV20, ENV29-30) and were within the 95th percentile.

HMW n-alkanes (nC_{21} to nC_{37}) accounted for 80% to 100% on the calculated total n-alkanes. Peaking, generally occurred at odd-numbers nC_{27}, nC_{29} and nC_{31}, their distribution within the HMW range indicated the presence of biogenic n-alkanes most likely derived from diffuse higher terrestrial plant waxes. A peak at an even-number n-alkane was observed at stations ENV11, ENV15 and ENV19, however, overall these stations showed a predominance of odd-numbered n-alkanes.

The ratio of odd to even numbered n-alkanes within the HMW range, commonly referred to as the carbon preference index (CPI), can provide further insight into the origin of n-alkanes in marine sediments. CPI values near 1.0 suggest a mainly petrogenic source of hydrocarbons, while CPI values greater than 1 suggests abundant land plant organic components including leaf waxes (Wang *et al.*, 2009). In contrast, CPI values >2 suggests mainly biologic hydrocarbons. CPI values for the Project,

suggests a predominance of biogenic aliphatic hydrocarbons within the HMW range such as higher plant waxes, with a minor petrogenic signal.

Further insight into the origin of hydrocarbons in marine sediments can be gained through the Pristane (Pr) and Phytane (Ph) ratio. Pr is primarily biogenic in origin (Muniz *et al.*, 2004) while Ph is rarely produced biogenically but is a common component of crude oil (Steinhauer & Boehm, 1992). Therefore, Ph is generally absent or only present at low levels in uncontaminated natural systems (Blumer & Snyder, 1965). Ph was below limit of detection (LOD) at all stations and therefore Pr:Ph ratios could not be calculated. However, this confirms a predominance of primarily biogenic Pr throughout the surveyed stations.

Table 2.3: Summary of sediment hydrocarbon analyses

Station	THC	UCM	nC_{10-20}	nC_{21-37}	nC_{10-37}	CPI	Pristane (Pr)	Phytane (Ph)	NPD[1]	Total PAH	NPD[1]/4-6 ring
N04a Platform Area											
ENV01	1.3	0.8	NC	0.022	0.022	1.6	<0.001	<0.001	NC	NC	NC
ENV02	0.6	0.5	NC	0.004	0.004	NC	<0.001	<0.001	NC	NC	NC
N04a-N05a Pipe Route											
ENV03	0.6	0.5	NC	0.002	0.002	NC	<0.001	<0.001	NC	NC	NC
ENV04	2.4	1.6	NC	0.015	0.015	4.0	0.001	<0.001	NC	NC	NC
ENV05	0.8	0.6	NC	0.008	0.008	4.9	<0.001	<0.001	NC	NC	NC
ENV06	0.7	0.5	NC	NC	NC	NC	<0.001	<0.001	NC	NC	NC
ENV07	0.4	0.3	NC	0.002	0.002	NC	<0.001	<0.001	NC	NC	NC
ENV08	1.3	0.9	NC	0.006	0.006	NC	<0.001	<0.001	NC	NC	NC
ENV09	0.9	0.6	0.001	0.016	0.017	2.3	<0.001	<0.001	NC	NC	NC
ENV10	0.8	0.6	NC	NC	NC	NC	<0.001	<0.001	NC	NC	NC
ENV11	1.6	0.9	NC	0.009	0.009	2.1	<0.001	<0.001	NC	NC	NC
ENV12	2.8	2.0	0.008	0.032	0.040	2.6	0.005	<0.001	0.012	0.026	0.9
ENV13	0.8	0.6	NC	0.003	0.003	1.6	<0.001	<0.001	NC	NC	NC
ENV14	1.4	1.0	NC	0.010	0.010	1.1	0.001	<0.001	NC	NC	NC
ENV15	1.6	0.8	0.001	0.007	0.009	1.3	0.002	<0.001	NC	NC	NC
ENV16	2.8	1.4	0.002	0.017	0.019	2.8	0.002	<0.001	NC	NC	NC
ENV17	3.0	2.1	0.003	0.025	0.028	4.1	0.002	<0.001	NC	NC	NC
ENV18	4.9	3.2	0.007	0.048	0.054	4.3	0.004	<0.001	0.007	0.017	0.7
ENV19	4.5	3.0	0.002	0.030	0.033	1.5	0.003	<0.001	NC	0.001	NC
ENV21	2.2	1.8	NC	0.025	0.025	4.2	0.002	<0.001	0.003	0.003	NC
ENV22	5.6	3.5	0.003	0.034	0.037	2.4	0.004	<0.001	NC	NC	NC
ENV23	5.0	3.0	0.005	0.027	0.032	1.8	0.004	<0.001	NC	NC	NC
ENV24	5.3	3.2	0.004	0.029	0.033	3.1	0.004	<0.001	NC	NC	NC
ENV25	5.2	3.0	0.004	0.027	0.031	2.8	0.004	<0.001	NC	NC	NC
N05a Platform Area											
ENV26	2.8	2.1	0.003	0.015	0.018	NC	0.003	<0.001	NC	NC	NC
ENV27	3.4	2.1	0.003	0.021	0.024	4.5	0.003	<0.001	NC	NC	NC
N05a-Riffgat OWF Cable Route											
ENV20	9.3	5.8	0.025	0.383	0.408	3.0	0.006	<0.001	0.004	0.053	0.1
ENV28	2.4	1.8	0.001	0.027	0.028	3.6	0.002	<0.001	NC	NC	NC
ENV29	6.5	4.0	0.024	0.399	0.423	3.2	0.006	<0.001	NC	0.019	NC
ENV30	6.4	4.3	0.017	0.315	0.332	4.3	0.005	<0.001	0.002	0.017	0.1
ENV31	3.5	2.4	0.006	0.042	0.047	2.5	0.006	<0.001	0.003	0.004	1.9
ENV32	6.0	3.5	0.003	0.035	0.038	2.9	0.005	<0.001	0.002	0.002	NC
ENV33	1.5	1.2	NC	0.012	0.012	4.9	0.001	<0.001	0.002	0.002	NC
ENV34	2.0	1.2	NC	0.009	0.009	8.1	0.002	<0.001	0.002	0.002	NC
ENV35	1.2	0.7	NC	0.008	0.008	4.6	0.002	<0.001	0.002	0.002	NC
ENV36	1.5	0.9	NC	0.008	0.008	NC	0.001	<0.001	0.002	0.002	NC
ENV37	1.2	0.8	NC	0.005	0.005	NC	0.001	<0.001	0.002	0.002	NC
ENV38	2.4	1.8	0.004	0.037	0.041	2.8	0.004	<0.001	0.003	0.004	2.3
ENV39	12.4	7.5	0.012	0.108	0.120	2.2	0.007	<0.001	0.665	2.530	0.4
ENV40	3.9	2.3	0.001	0.026	0.027	1.2	0.003	<0.001	0.003	0.003	NC
ENV41	1.5	1.1	0.001	0.010	0.011	4.1	0.002	<0.001	0.002	0.002	NC
ENV42	9.4	4.2	0.005	0.060	0.065	1.6	0.006	<0.001	0.002	0.002	NC
ENV43	9.8	4.9	0.013	0.068	0.081	1.5	0.007	<0.001	0.006	0.006	NC
ENV44	4.2	2.5	NC	0.015	0.015	2.3	0.003	<0.001	0.004	0.004	NC
Minimum	**0.4**	**0.3**	NC	NC	NC	NC	NC	NC	NC	NC	NC
Maximum	**12.4**	**7.5**	**0.025**	**0.399**	**0.423**	**8.1**	**0.007**	NC	**0.665**	**2.530**	**2.3**
Mean	**3.4**	**2.1**	NC	NC	NC	NC	NC	NC	NC	NC	NC
SD	**2.8**	**1.6**	NC	NC	NC	NC	NC	NC	NC	NC	NC
2019 Survey (Geoxyz, 2019)											
Minimum	**0.7**	**0.7**	NC	NC	**0.001**	NC	NC	NC	NC	NC	NC
Maximum	**13.7**	**12.7**	**0.060**	**0.871**	**0.931**	**7.0**	**0.007**	**0.001**	**0.100**	**0.067**	**0.9**
Mean	**3.2**	**3.1**	NC	NC	**0.065**	NC	NC	NC	NC	NC	NC
SD	**2.7**	**2.5**	NC	NC	**0.174**	NC	NC	NC	NC	NC	NC
Background levels SNS (UKOOA, 2001)											
Mean	**4.3**	NR	NR	NR	**0.33**	NR	NR	NR	NR	NR	NR
95th Percentile	**11.4**				**0.78**	NR					
Key	**Below SNS background mean**				**Above SNS background mean**				**Above SNS background 95th Percentile**		

Concentrations expressed as µg g^{-1} dry sediment.

1 Sum of naphthalenes, phenanthrenes and dibenzothiophenes

NC Not Calculatable – 1 or more value below LOD

NR Not Reported

Grey text indicate where concentrations are below LOD

Table 2.4: n-Alkane concentrations, Stations ENV01-ENV19, ENV21-25

Station		ENV01	ENV02		ENV03	ENV04	ENV05	ENV06	ENV07	ENV08	ENV09	ENV10	ENV11	ENV12	ENV13	ENV14	ENV15	ENV16	ENV17	ENV18	ENV19	ENV21	ENV22	ENV23	ENV24	ENV25
nC_{10}	N04a Platform Area	<1	<1	N05a-N04a Pipe Route	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{11}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{12}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{13}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{14}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{15}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{16}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1
nC_{17}		<1	<1		<1	<1	<1	<1	<1	<1	1	<1	<1	2	<1	<1	1	2	1	2	1	<1	1	3	2	2
nC_{18}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
nC_{19}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	1	3	1	<1	2	2	2	2
nC_{20}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{21}		<1	<1		<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{22}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	1	<1	<1	<1	<1	<1	<1
nC_{23}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1
nC_{24}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1
nC_{25}		<1	<1		<1	<1	<1	<1	<1	<1	2	<1	<1	2	<1	<1	<1	<1	2	4	2	4	6	5	7	4
nC_{26}		<1	<1		<1	<1	<1	<1	<1	<1	1	<1	<1	1	1	1	<1	1	2	2	<1	1	1	2	1	1
nC_{27}		<1	1		<1	1	<1	<1	<1	1	1	<1	2	5	<1	<1	<1	3	3	7	4	3	4	3	3	4
nC_{28}		1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	3	<1	<1	1	2	1	1	2	1	1	1
nC_{29}		3	1		1	1	1	<1	<1	2	2	<1	2	8	<1	2	1	4	6	13	2	5	3	3	3	2
nC_{30}		3	<1		<1	2	1	<1	<1	<1	2	<1	3	2	<1	<1	2	3	<1	1	6	2	2	1	<1	1
nC_{31}		8	1		1	7	4	<1	2	2	4	<1	2	5	2	3	2	4	6	9	4	6	3	3	4	4
nC_{32}		2	<1		<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	1	<1	1	1	<1	1	1	1	2
nC_{33}		3	<1		<1	1	1	<1	<1	2	1	<1	<1	1	<1	<1	<1	1	2	3	2	2	3	2	2	1
nC_{34}		1	<1		<1	1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	1	<1	3	<1	2	4	3	2
nC_{35}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	1	<1	1	<1	1	1
nC_{36}		1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	2	<1	3	<1	2	<1
nC_{37}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	3	<1	1	2
Total		**22**	**4**		**2**	**15**	**8**	**NC**	**2**	**6**	**17**	**NC**	**9**	**40**	**3**	**10**	**9**	**19**	**28**	**54**	**33**	**25**	**37**	**32**	**33**	**31**

Concentrations expressed as ng g^{-1} dry weight sediment

Grey text indicate where concentrations were below LOD

Table 2.5: n-alkane concentrations, Stations ENV20, ENV26-44

Station		ENV26	ENV27		ENV20	ENV28	ENV29	ENV30	ENV31	ENV32	ENV33	ENV34	ENV35	ENV36	ENV37	ENV38	ENV39	ENV40	ENV41	ENV42	ENV43	ENV44
nC_{10}	N05a Platform Area	<1	<1	N05a-Riffgat OWF Cable Route	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{11}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{12}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{13}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{14}		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	1	<1	<1	<1
nC_{15}		<1	<1		2	<1	2	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{16}		<1	<1		2	<1	6	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
nC_{17}		2	2		4	1	4	3	1	1	<1	<1	<1	<1	<1	<1	2	<1	<1	1	2	<1
nC_{18}		<1	<1		5	<1	3	3	1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	1	7	<1
nC_{19}		1	1		6	<1	5	5	2	2	<1	<1	<1	<1	<1	2	6	1	<1	2	3	<1
nC_{20}		<1	<1		7	<1	3	3	<1	<1	<1	<1	<1	<1	<1	1	2	<1	<1	<1	1	<1
nC_{21}		<1	<1		6	<1	5	5	1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	1	1	<1
nC_{22}		<1	<1		7	<1	7	6	<1	<1	<1	<1	<1	<1	<1	<1	9	<1	<1	<1	<1	<1
nC_{23}		<1	<1		10	1	22	18	1	<1	<1	<1	<1	<1	<1	1	5	<1	<1	<1	<1	<1
nC_{24}		<1	<1		10	<1	16	9	<1	<1	<1	<1	<1	<1	<1	1	3	1	<1	<1	<1	<1
nC_{25}		3	2		29	1	32	35	4	1	2	<1	<1	<1	<1	2	10	<1	<1	2	2	<1
nC_{26}		<1	<1		16	2	15	12	2	1	1	1	<1	<1	<1	2	5	1	1	1	2	<1
nC_{27}		3	4		54	4	55	47	6	4	1	2	1	<1	<1	3	25	5	1	4	3	1
nC_{28}		<1	1		16	1	14	14	1	1	<1	<1	<1	<1	<1	1	5	1	<1	1	<1	<1
nC_{29}		3	3		60	6	59	53	6	5	3	3	3	4	3	9	10	1	3	7	8	1
nC_{30}		<1	2		9	2	13	11	<1	3	1	<1	1	<1	<1	<1	<1	3	<1	9	6	2
nC_{31}		5	4		79	6	78	69	5	12	3	2	2	3	2	9	12	2	4	17	14	5
nC_{32}		<1	<1		22	2	20	<1	3	<1	<1	<1	<1	<1	<1	2	4	<1	<1	4	3	<1
nC_{33}		2	1		31	3	30	27	3	2	1	1	<1	1	<1	2	5	1	1	<1	8	2
nC_{34}		<1	1		4	<1	1	3	3	3	<1	<1	<1	<1	<1	2	4	4	<1	1	2	1
nC_{35}		<1	1		23	<1	27	5	2	1	<1	<1	<1	<1	<1	1	3	1	<1	4	2	<1
nC_{36}		<1	<1		6	<1	2	3	2	1	<1	<1	<1	<1	<1	<1	4	3	<1	6	10	1
nC_{37}		<1	<1		3	<1	2	<1	1	<1	<1	<1	<1	<1	<1	<1	4	1	<1	2	6	1
Total		**18**	**24**		**408**	**28**	**423**	**332**	**47**	**38**	**12**	**9**	**8**	**8**	**5**	**41**	**120**	**27**	**11**	**65**	**81**	**15**

Concentrations expressed as ng g^{-1} dry weight sediment

Grey text indicate where concentrations were below LOD

2.4.2. Polycyclic Aromatic Hydrocarbons

Polycyclic aromatic hydrocarbons (PAH) were analysed at each station using GC mass spectrometry (GC-MS).Results of the total 2-6 ring PAH and total 2-3 ring napthalenes, phenanthrenes and dibenzothiophenes (NPD) concentrations is presented in Table 2.3. A breakdown of the individual PAH and their alkyl derivatives are presented in Table 2.6 to Table 2.7. PAH bar charts, showing the proportion of parent compounds and alkylated homologues for molecular weight class of PAH at each station, are presented in Appendix G along with US EPA PAHs.

Total PAH concentration was below Limit of Detection (LOD) at 23 stations. Where concentrations recorded above LOD, concentrations ranged from 0.001 µg g^{-1} a Station ENV19 to 2.530 µg g^{-1} at Station ENV39. Stations with concentrations equal to or greater than 0.01 µg g^{-1} were all found within the 'coarse sand and clay' sediment boundary. Concentrations of the Low Molecular Weight (LMW; 2 to 3 ring) NPD were below LOD at 25 stations, with concentrations above LOD ranging from 0.002 µg g^{-1} at 9 stations to 0.665 µg g^{-1} at Station ENV39. Station ENV39 presented PAH and NPD concentrations much higher than all other stations in the current survey and higher than the maximum concentration recorded in the 2019 survey (GEOxyz, 2019). However, with the exception of Station ENV39, total PAH and NPD presented similar concentrations to the 2019 survey. Where calculable, the proportion of NPD accounted up to 100% of total PAH and as little as 8%. NPD accounted for the majority of total PAH at most stations, including Station ENV39, suggesting the PAHs present were predominantly LMW and petrogenic.

Further information on the source(s) of PAH in the sediment may be obtained from a study of their alkyl homologue distributions. According to Wang and Fingas (2003) pyrogenic PAHs are predominantly unalkylated, whereas petrogenic PAHs display a greater degree of alkylation. PAH bar charts in Appendix G show a clear lack of parental dominance in the LMW and HMW PAHs at most stations. This suggests a minor petrogenic signal given the overall low concentrations. The exception was Station ENV39 were parent compounds dominated in the LMW and HMW PAHs, suggesting a predominance of pyrogenic aromatic hydrocarbons, likely originating from inputs such as atmospheric fallout and river discharges (Neff, 1979; McDougall, 2000).

To allow comparison to OSPAR background assessment concentrations (BCs and BACs; OSPAR, 2005), data required normalisation of the United States Environmental Protection Agency (US EPA) 16 PAH concentrations to 2.5% TOC, results of which are presented in Appendix G. BC values were exceeded at Station ENV18, as well as BAC values at Stations ENV12, ENV31, ENV38, ENV39 and ENV43, indicating the possibility of anthropogenic impact on the PAH composition of the sediments at these stations.

Total PAH concentrations recorded across all stations fell significantly below the US EPA toxicity reference value (TRV) of 870 µg kg^{-1} (Macdonald *et al.*, 1996; US EPA, 1999). All stations were found to sit at the lower end of the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) PAH concentrations for sediments surrounding North Sea oil and gas installations which ranged from 20 µg kg^{-1} to 74,700 µg kg^{-1} (Sheahan *et al.*, 2001).

The best estimates of the potential toxicity of PAHs in marine sediments are the ERL and ERM values (Long *et al.*, 1995). Concentrations less than the ERL represent a range in which toxic effects would

rarely be observed whilst concentrations greater than or equal to the ERL but less than the ERM represent a range in which effects would occasionally occur and concentrations greater than or equal to the ERM represent a range within which effects could frequently be expected. Concentrations fell below the ERL at all stations except for ENV39, where fluorene, phenanthrene and anthracene exceeded the ERL. However, all concentration were below the ERM at all stations.

The AET (Buchman, 2008) represents the concentration above which adverse biological impacts would be expected by that biological indicator due to the exposure to that contaminant alone. Total LMW and HMW PAH concentration were well below their respective AETs (1.2 µg g^{-1} and 7.9 µg g^{-1}) at all targets, further suggesting that overall adverse biological impacts would be extremely unlikely.

Table 2.6: PAH concentrations, Stations ENV01-ENV19, ENV21-ENV25

Station		ENV01	ENV02		ENV03	ENV04	ENV05	ENV06	ENV07	ENV08	ENV09	ENV10	ENV11	ENV12	ENV13	ENV14	ENV15	ENV16	ENV17	ENV18	ENV19	ENV21	ENV22	ENV23	ENV24	ENV25
	N04a Platform Area			N04a – N05a Pipe Route																						
Naphthalene (128)		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
C1 128		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
C2 128		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	2	<1	2	<1	<1	<1	<1
C3 128		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
C4 128		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum 128		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	4	NC	2	NC	NC	NC	NC
Phenanthrene / Anthracene (178)		<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
C1 178		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
C2 178		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	2	<1	1	<1	<1	<1	<1
C3 178		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum 178		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	5	NC	NC	NC	NC	NC	3	NC	1	NC	NC	NC	NC
Dibenzothiophene (184)		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
C1 (184)		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
C2 184		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
C3 184		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum 184		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Fluoranthene / pyrene (202)		<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2
C1 202		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
C2 202		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
C3 202		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum 202		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	7	NC	NC	NC	NC	NC	5	NC	NC	NC	NC	NC	NC
Benzoanthracene / Chrysene (228)		<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
C1 228		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
C2 228		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Sum 228		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	3	NC	NC	NC	NC	NC	2	NC	NC	NC	NC	NC	NC
Benzofluoranthenes / Benzopyrenes (252)		<4	<4		<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
C1 252		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	2	1	<1	<1	<1	<1	<1
C2 252		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Sum 252		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	4	NC	NC	NC	NC	NC	3	1	NC	NC	NC	NC	NC
Dibenzoanthracene / Indenopyrene / Benzoperylene (276)		<3	<3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
C1 276		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
C2 276		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum 276		NC	<5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total NPD (2-3 ring PAH)		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	12	NC	NC	NC	NC	NC	7	NC	3	NC	NC	NC	NC
Total 2-6 ring PAH		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	26	NC	NC	NC	NC	NC	17	1	3	NC	NC	NC	NC

Concentrations expressed as ng g^{-1} dry weight sediment

NC Not Calculatable – all values in calculation below LOD.

Grey text indicate where concentrations were below LOD

Table 2.7: PAH concentrations, Stations ENV20, ENV26-44

Station		ENV26	ENV27		ENV20	ENV28	ENV29	ENV30	ENV31	ENV32	ENV33	ENV34	ENV35	ENV36	ENV37	ENV38	ENV39	ENV40	ENV41	ENV42	ENV43	ENV44
Naphthalene (128)	N05a Platform Area	<1	<1	N05a-N04a Cable Route	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	1	<1
C1 128		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	3	<1	<1	<1	1	1
C2 128		<1	<1		1	<1	<1	<1	2	2	2	2	2	2	2	1	12	3	2	2	2	2
C3 128		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	17	<1	<1	<1	1	<1
C4 128		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7	<1	<1	<1	<1	<1
Sum 128		NC	NC		**1**	NC	NC	NC	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**40**	**3**	**2**	**2**	**6**	**4**
Phenanthrene / Anthracene (178)		<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	419	<2	<2	<2	<2	<2
C1 178		<1	<1		<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	106	<1	<1	<1	<1	<1
C2 178		<1	<1		1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	49	<1	<1	<1	<1	<1
C3 178		<1	<1		2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	17	<1	<1	<1	<1	<1
Sum 178		NC	NC		**3**	NC	NC	**2**	**1**	NC	NC	NC	NC	NC	NC	NC	**591**	NC	NC	NC	NC	NC
Dibenzothiophene (184)		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	15	<1	<1	<1	<1	<1
C1 (184)		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9	<1	<1	<1	<1	<1
C2 184		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	7	<1	<1	<1	<1	<1
C3 184		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
Sum 184		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	**34**	NC	NC	NC	NC	NC
Fluoranthene / pyrene (202)		<2	<2		2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	655	<2	<2	<2	<2	<2
C1 202		<1	<1		2	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	139	<1	<1	<1	<1	<1
C2 202		<1	<1		3	<1	2	2	<1	<1	<1	<1	<1	<1	<1	<1	40	<1	<1	<1	<1	<1
C3 202		<1	<1		3	<1	2	2	<1	<1	<1	<1	<1	<1	<1	<1	16	<1	<1	<1	<1	<1
Sum 202		NC	NC		**11**	NC	**6**	**5**	NC	NC	NC	NC	NC	NC	NC	NC	**849**	NC	NC	NC	NC	NC
Benzoanthracene / Chrysene (228)		<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	289	<2	<2	<2	<2	<2
C1 228		<1	<1		4	<1	2	2	<1	<1	<1	<1	<1	<1	<1	<1	62	<1	<1	<1	<1	<1
C2 228		<1	<1		6	<1	4	3	<1	<1	<1	<1	<1	<1	<1	<1	38	<1	<1	<1	<1	<1
Sum 228		NC	NC		**10**	NC	**6**	**5**	NC	NC	NC	NC	NC	NC	NC	NC	**388**	NC	NC	NC	NC	NC
Benzofluoranthenes / Benzopyrenes (252)		<4	<4		<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	342	<4	<4	<4	<4	<4
C1 252		<1	<1		14	<1	1	1	2	<1	<1	<1	<1	<1	<1	1	85	<1	<1	<1	<1	<1
C2 252		<1	<1		8	<1	6	4	<1	<1	<1	<1	<1	<1	<1	<1	27	<1	<1	<1	<1	<1
Sum 252		NC	NC		**22**	NC	**7**	**5**	**2**	NC	NC	NC	NC	NC	NC	**1**	**453**	NC	NC	NC	NC	NC
Dibenzoanthracene / Indenopyrene / Benzoperylene (276)		<3	<3		4	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	147	<3	<3	<3	<3	<3
C1 276		<1	<1		2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	19	<1	<1	<1	<1	<1
C2 276		<1	<1		1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	9	<1	<1	<1	<1	<1
Sum 276		<5	<5		**6**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**175**	<5	<5	<5	<5	<5
Total NPD (2-3 ring PAH)		NC	NC		**4**	NC	NC	**2**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**665**	**3**	**2**	**2**	**6**	**4**
Total 2-6 ring PAH		NC	NC		**53**	NC	**19**	**17**	**4**	**2**	**2**	**2**	**2**	**2**	**2**	**4**	**2530**	**3**	**2**	**2**	**6**	**4**

Concentrations expressed as ng g^{-1} dry weight sediment

NC Not Calculatable – all values in calculation below LOD.

Grey text indicate where concentrations were below LOD

2.5. Metal Concentrations

Following extraction by boric/HF acids, concentrations of Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) and Zinc (Zn) were determined by ICP-MS. Results for metal analysis are summarised in Table 2.8.

Arsenic concentrations ranged from 1.1 $mg.kg^{-1}$ at Station ENV14 to 9.0 $mg.kg^{-1}$ at Station ENV05, with a mean of 3.6 $mg.kg^{-1}$ (±1.2 SD). Arsenic was the only metal to exceed a biological threshold (ERL) but this occurred at only 1 station (Station ENV04; Long *et al.*, 1995). Overall, arsenic concentrations were comparable to those from the previous survey (GEOxyz, 2019).

Cadmium and mercury concentrations were all below LOD. Although the comparison survey recorded cadmium and mercury concentrations above LOD, they were generally below or close to the Limit of Detection (LOD) of the current survey (GEOxyz, 2019).

Concentrations of chromium ranged from below LOD at ENV08 to 20.4 $mg.kg^{-1}$ at ENV22 and were generally similar compared to concentrations recorded in the previous survey (GEOxyz, 2019).

Lead concentrations ranged from 3.2 $mg.kg^{-1}$ to 8.3 $mg.kg^{-1}$, with a mean of 5.7 $mg.kg^{-1}$ (±1.5 SD). These concentrations presented similar values to those reported in the previous survey (GEOxyz, 2019).

Copper concentrations were lower in the current survey compared to the previous survey (GEOxyz, 2019). Concentrations ranged from below LOD at most stations (61%) to 3.4 $mg.kg^{-1}$ at Station ENV29.

When excluding nickel and zinc outliers at a single station (Station GRAB_P_1) in the previous survey, concentrations for both metals were generally similar across both surveys (GEOxyz, 2019). Nickel concentrations ranged from below LOD at 45% of the Stations to 5.1 $mg.kg^{-1}$ at Station ENV20, while zinc concentrations ranged from 4.1 $mg.kg^{-1}$ at ENV14 to 18.7 $mg.kg^{-1}$ at ENV31, with a mean of 10.5 $mg.kg^{-1}$ (±4.2 SD).

Overall, metal concentrations were generally considered comparable to the ranges recorded in the comparison survey (GEOxyz, 2019) and comparable to published biological thresholds, and were therefore considered representative of background levels for the wider area.

Table 2.8: Heavy and trace metal concentrations

Station	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
N04a Platform Area								
ENV01	5.0	<0.2	5.5	2.5	6.1	<0.08	2.9	10.5
ENV02	5.7	<0.2	4.7	2.4	7.3	<0.08	2.6	10.5
N04a-N05a Platform Area								
ENV03	2.4	<0.2	4.9	<2.0	5.0	<0.08	<2.0	8.1
ENV04	3.4	<0.2	8.4	<2.0	6.3	<0.08	2.1	13.0
ENV05	9.0	<0.2	3.1	<2.0	5.8	<0.08	<2.0	9.0
ENV06	4.2	<0.2	2.0	<2.0	4.2	<0.08	<2.0	4.7
ENV07	5.2	<0.2	2.3	<2.0	3.8	<0.08	<2.0	5.1
ENV08	4.5	<0.2	<2.0	<2.0	3.6	<0.08	<2.0	4.6
ENV09	2.6	<0.2	2.5	<2.0	3.4	<0.08	<2.0	4.8
ENV10	3.1	<0.2	2.8	<2.0	5.2	<0.08	<2.0	6.3
ENV11	2.8	<0.2	3.6	<2.0	6.6	<0.08	<2.0	7.5
ENV12	2.7	<0.2	9.2	2.0	6.0	<0.08	2.7	10.2
ENV13	2.3	<0.2	3.5	<2.0	3.2	<0.08	<2.0	5.1
ENV14	1.1	<0.2	3.2	<2.0	3.2	<0.08	<2.0	4.1
ENV15	4.3	<0.2	4.4	<2.0	4.8	<0.08	<2.0	7.1
ENV16	3.7	<0.2	4.0	<2.0	7.4	<0.08	2.0	17.3
ENV17	3.4	<0.2	12.3	2.2	7.0	<0.08	3.2	14.0
ENV18	4.2	<0.2	8.1	<2.0	5.1	<0.08	2.4	8.9
ENV19	2.6	<0.2	13.0	<2.0	7.1	<0.08	2.6	14.1
ENV21	2.3	<0.2	9.7	<2.0	5.8	<0.08	2.6	9.2
ENV22	3.4	<0.2	20.4	<2.0	6.8	<0.08	2.5	13.6
ENV23	3.6	<0.2	11.3	<2.0	7.0	<0.08	2.6	13.9
ENV24	3.3	<0.2	11.4	<2.0	7.2	<0.08	2.4	13.6
ENV25	3.2	<0.2	11.2	<2.0	7.0	<0.08	2.6	15.6
N05a Platform Area								
ENV26	3.0	<0.2	14.4	2.0	6.4	<0.08	2.8	13.8
ENV27	2.4	<0.2	10.2	2.2	5.9	<0.08	2.4	11.5
N05a - Riffgat OWF Cable Route								
ENV20	4.2	<0.2	18.3	2.6	7.8	<0.08	5.1	16.7
ENV28	2.6	<0.2	11.0	2.2	5.3	<0.08	3.0	9.7
ENV29	4.3	<0.2	13.9	3.4	6.6	<0.08	4.5	14.8
ENV30	4.7	<0.2	13.5	3.0	6.5	<0.08	4.1	16.9
ENV31	4.3	<0.2	15.0	2.5	8.0	<0.08	3.6	18.7
ENV32	3.2	<0.2	11.5	2.6	6.8	<0.08	2.9	14.8
ENV33	2.5	<0.2	4.2	<2.0	3.7	<0.08	<2.0	5.6
ENV34	2.7	<0.2	6.8	<2.0	4.9	<0.08	<2.0	7.6
ENV35	3.9	<0.2	3.9	<2.0	4.0	<0.08	<2.0	6.5
ENV36	3.5	<0.2	4.8	<2.0	3.8	<0.08	<2.0	6.3
ENV37	3.0	<0.2	3.4	<2.0	3.5	<0.08	<2.0	5.3
ENV38	3.4	<0.2	8.0	<2.0	5.4	<0.08	<2.0	10.7
ENV39	3.9	<0.2	13.3	2.0	7.9	<0.08	3.4	18.1
ENV40	3.1	<0.2	6.9	<2.0	5.8	<0.08	<2.0	10.7
ENV41	3.1	<0.2	4.1	2.1	4.2	<0.08	<2.0	7.1
ENV42	4.2	<0.2	12.9	2.0	8.3	<0.08	2.4	13.1
ENV43	3.4	<0.2	12.3	2.7	6.6	<0.08	2.7	15.4
ENV44	2.8	<0.2	5.5	2.1	4.5	<0.08	<2.0	10.0
Minimum	**1.1**	NC	NC	NC	**3.2**	NC	**2.0**	**4.1**
Maximum	**9.0**	NC	**20.4**	**3.4**	**8.3**	NC	**5.1**	**18.7**
Mean	**3.6**	NC	NC	NC	**5.7**	NC	NC	**10.5**
SD	**1.2**	NC	NC	NC	**1.5**	NC	NC	**4.2**
2019 Survey (GEOxyz, 2019)								
Minimum	**1.3**	**0.04**	**2.5**	**4.5**	**1.5**	**0.02**	**1.8**	**6.5**
Maximum	**10.5**	**0.17**	**23.3**	**14.7**	**9.5**	**0.10**	**20.5**	**40.4**
Mean	**3.4**	NC	**4.7**	**6.2**	**2.6**	NC	**3.2**	**13.9**
SD	**1.8**	NC	**3.8**	**1.8**	**1.5**	NC	**3.5**	**6.3**
Background levels SNS (UKOOA, 2001)								
Mean	NR	**0.16**	**10.7**	**3.8**	**8.4**	**0.02**	**5.5**	**15.9**
95th Percentile	NR	**0.72**	**44.8**	**13.9**	**21.0**	**0.05**	**21.5**	**35.8**
Biological Thresholds								
ERL	**8.2**	**1.2**	**81**	**34**	**46.7**	**0.15**	**20.9**	**150**
ERM	**70**	**9.6**	**370**	**270**	**218**	**0.71**	**51.6**	**410**
AET	**35**	**3**	**62**	**390**	**400**	**0.41**	**110**	**410**

2.6. Physico-Chemical Multivariate Analyses

Multivariate analyses were performed on the physico-chemical data for all samples using Plymouth Routines in Multivariate Ecological Research software (PRIMER; Clarke and Warwick, 1994) in order to ascertain similarities and dissimilarities within the environmental data set.

Prior to analyses, cadmium, copper, mercury nickel, nC_{10-20}, Phytane, PAH ad NPD were removed due to dominance of values below LOD. As there were only a few values below LOD for Cr, nC_{10-37} and Pristane, the corresponding LOD were assigned as values to those stations. In addition, mean diameter (phi), UCM and nC_{21-37} were removed due to co-linearity with mean diameter (µm), THC and nC_{10-37}, respectively. The data were log transformed and normalised to make the variables unitless before producing a Euclidean distance resemblance matrix which was subject to CLUSTER, SIMPROF and multidimensional scaling (MDS). Stations which are statistically indistinguishable from one another are joined by a red dotted line, while those joined by a black line are statistically different. As a result of the permutative nature of SIMPROF only 3 or more stations can be considered as a cluster.

The Euclidean distance dendrogram presented in Figure 2.8a revealed that the physico-chemical variables across the Project resulted in 8 significant clusters, 1 associated pair and 2 outliers. This was corroborated with the MDS plot which presented a stress value of 0.1, considered as a useful 2-dimensional representation of rank dissimilarities. After applying a slice at a Euclidean distance of 5, clusters were reduced to 3 groups (Table 2.9; Figure 2.8b). Group B included the highest number of stations (24), comprising 100% of the N05a platform area stations, 48% of N04a-N05a pipe route stations and 73% of N05a-Riffgat OWF cable route stations. In contrast, Group C, comprised 100% of N04a platform area stations and approximately 13% of stations for the pipe route and cable route areas. Group A, was comprised of just 3 stations within the N05a-Riffgat OWF cable route.

Table 2.9: Summary of physico-chemical groupings

Group[1]	SIMPROF Cluster	Dissimilarity	Stations
A	a	4.03	ENV30, ENV20, ENV29
B	b	2.37	ENV21
B	c	1.86	ENV03, ENV34, ENV41
B	d	2.52	ENV04, ENV44, ENV38, ENV27, ENV40
B	e	3.15	ENV39
B	f	2.49	ENV19, ENV25, ENV32, ENV17, ENV26, ENV22, ENV23, ENV24, ENV31, ENV42, ENV43
B	g	3.7	ENV28, ENV12, ENV18

Group[1]	SIMPROF Cluster	Dissimilarity	Stations
C	h	1.21	ENV07, ENV08
C	i	2.13	ENV09, ENV06, ENV35, ENV36
C	J	3.0.	ENV14, ENV33, ENV13, ENV37
C	k	4.59	ENV05, ENV01, ENV16, ENV10, ENV02, ENV11, ENV15

1 Groups at a Euclidean Distance of 5

A SIMPER analysis was undertaken to investigate the key environmental variables for the distinction between the 3 groups. Results revealed that nC_{10-37}, TOC and fines together contributed to 58% and 47% of the difference between Group A and Group B and Group A and Group C, respectively. Values of nC_{10-37}, TOC and fines were higher in Group A compared to Group B and C. Samples from group A were restricted to the 'coarse sand and clay' sediment boundary.

In contrast, sediment mean diameter (µm), gravel, chromium, zinc and lead contributed to the difference between samples in Group B and C. Sediment mean diameter (µm) and gravel was lower in samples from Group B compared to those in Group C, whereas chromium, zinc and lead were higher in samples in Group B compared to those in Group C. Spatially, stations from Group B were confined to the 'fine sand' sediment boundary and 'coarse sand and clay', while stations from Group C were confined to 'coarse sand' and 'coarse sand and clay' sediment boundaries.

These subtle differences highlight the natural spatial variation in the physical and chemical characteristics of the sediments across the Project. A selection of these variables are presented in Table 2.9 to illustrate these trends across the Project.

Figure 2.8: Euclidean distance dendrogram

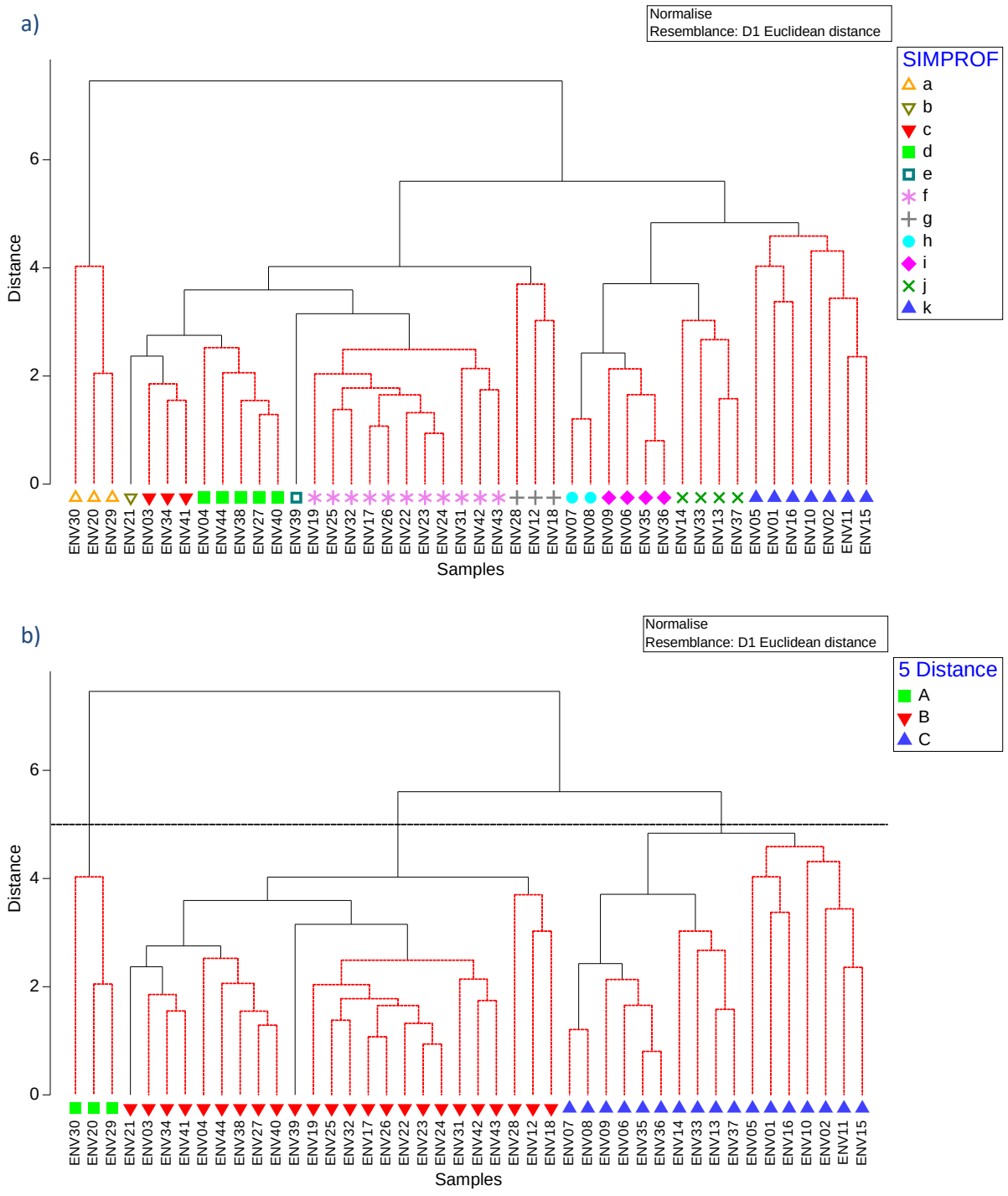
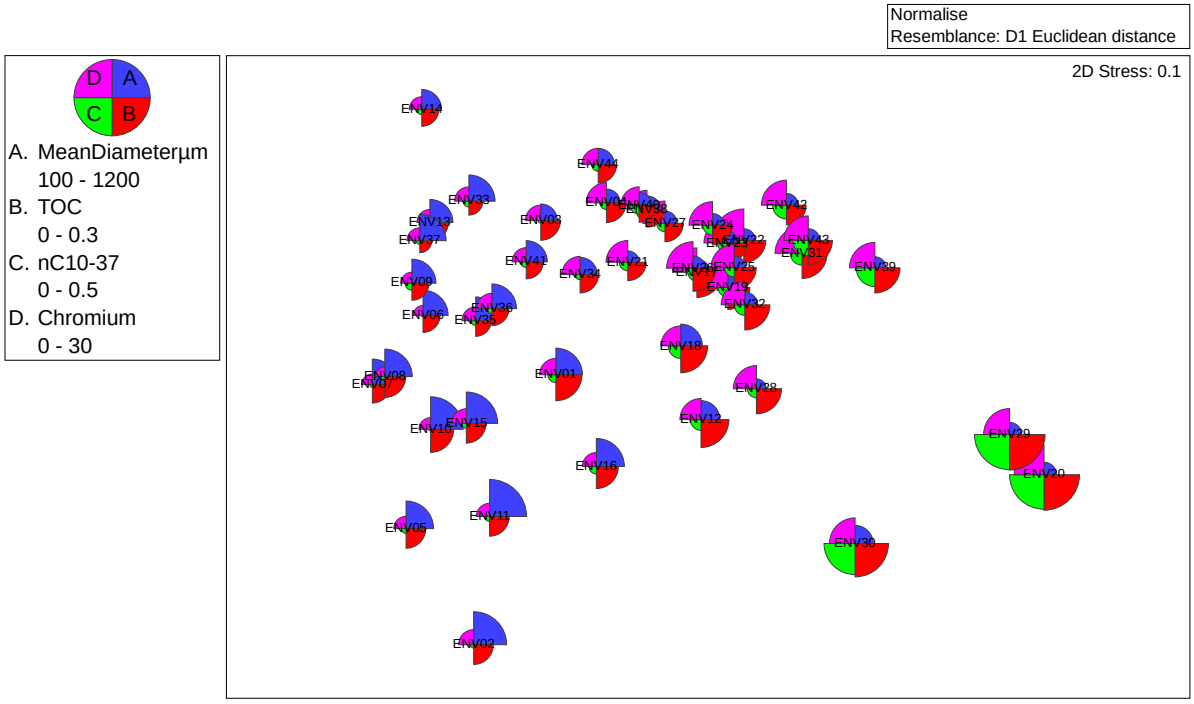


Figure 2.9: MDS ordination – physico-chemical data



2.7. Macrofaunal Interpretation

2.7.1. Overview

A total of 3 x 0.1 m^2 faunal samples (MACA, MACB, MACC) were collected from each station, 2 of which were processed with the 3rd retained as a spare. All samples were screened through a 0.5 mm mesh sieve. Following laboratory analysis, several taxa were removed as per the OSPAR guidelines for monitoring environmental impact of offshore oil and gas activities (OSPAR, 2017)

At the time of writing, only MACA samples had been processed. Consequently, this revision of the report only outlines the results for 1 set of samples, with results of MACB to be incorporated in later revisions.

2.7.2. Infaunal Trends

A total of 10,981 individuals from 172 taxa were recorded from 44 samples. Juveniles accounted for 1,619 individuals and 24 taxa, representing approximately 15% of total individuals and 14% of total recorded taxa.

Juveniles can at times dominate the macrobenthos but such effects tend to be ephemeral due to high mortality, thereby temporarily disrupting the typical relative abundance amongst species. OSPAR (2017) recommends that, should juveniles appear among the top 10 most dominant taxa in the dataset, statistical analysis of the faunal community should be conducted both with (full fauna data set) and without juveniles (adult only data set) to illustrate their influence on the faunal community. When ranked by abundance, only 1 juvenile taxa (Ascidiacea) was ranked within the top 10 most dominant taxa. Consequently, within this report, the adult only data set is discussed alongside the full fauna data set.

Both datasets were divided into 5 taxonomic groups; Annelida (Polychaeta), Arthropoda (Malacostraca), Mollusca, Echinodermata and 'Miscellaneous'. The 'Miscellaneous' category consisted of 9 taxa which comprised Annelida (Clitellata comprising *Grania, Tubificoides pseudogaster*), Chordata (Ascidiacea, *Branchiostoma lanceolatum*), Cnidaria (Actiniaria, *Cerianthus lloydi*), Nemertea, Phoronida (*Phoronis*) and Arthropoda (Pycnogonida comprising *Nymphon brevirostre*). The absolute and proportional contribution of each of the taxonomic groups to the overall community structure, for the full and adult data sets, for the current survey and previous survey, are summarised in Table 2.10. The proportional contribution of individuals and taxa for each taxonomic group for the full fauna data set (divided by adult and juveniles) are presented as stacked bar charts in Figure 2.10 and Figure 2.11, respectively.

In the full and adult only data sets, the proportional contribution of individuals and taxa for each taxonomic groups were similar. Consequently, the adult data set is only discussed. Polychaeta was the most abundant (n = 5668), contributing to 61% of total individuals and 43% of total taxa recorded. The 'Miscellaneous' taxonomic group was the second most abundant group (n = 1816), contributing to 19% of total individuals but only 5% of total taxa. Malacostraca and Mollusca were generally similar in terms of abundance (905 and 924 individuals, respectively), contributing to 10% each to total individuals. However, Malacostraca contributed to a higher proportion of taxa (31%) compared to Mollusca (18%). Lastly, Echinoderms was the least abundant taxonomic grouping in both the full and adult only datasets (49 individuals in the adult only dataset), contributing to 1% of total individuals and 3% of total taxa. The percentage contribution of the taxonomic groups were similar across the current and previous survey (Table 2.10).

Table 2.10: Proportional contribution of taxonomic groups

Taxonomic Group	This Survey				2019 Survey (Geoxyz, 2019)			
	No. Individuals	% contribution of individuals[1]	No. Taxa	% contribution of taxa[1]	No. Individuals	% contribution of individuals[1]	No. Taxa	% contribution of taxa[1]
Full Data								
Annelida (Polychaeta)	5,940	54	71	41	18,518	68	50	36
Arthropoda (Malacostraca)	943	9	48	28	2,676	10	39	28
Mollusca	1,160	11	37	22	3,644	13	29	21
Echinodermata	68	1	7	4	1,295	5	7	5
Miscellaneous	2,870	26	9	5	1,194	4	13	9
Total	**10,981**	**100**	**172**	**100**	**27,327**	**100**	**138**	**100**
Adult Only								
Annelida (Polychaeta)	5,668	61	66	43	18,478	73	49	40
Arthropoda (Malacostraca)	905	10	47	31	2,646	10	36	29
Mollusca	924	10	28	18	3,084	12	23	19
Echinodermata	49	1	4	3	69	0	3	2
Miscellaneous	1,816	19	8	5	986	4	12	10
Total	**9,362**	**100**	**153**	**100**	**25,263**	**100**	**123**	**100**

1 Please note that due to rounding som percentages appear appear to sum to 101

Figure 2.10: Proportion of individual abundance by main taxonomic group for each station

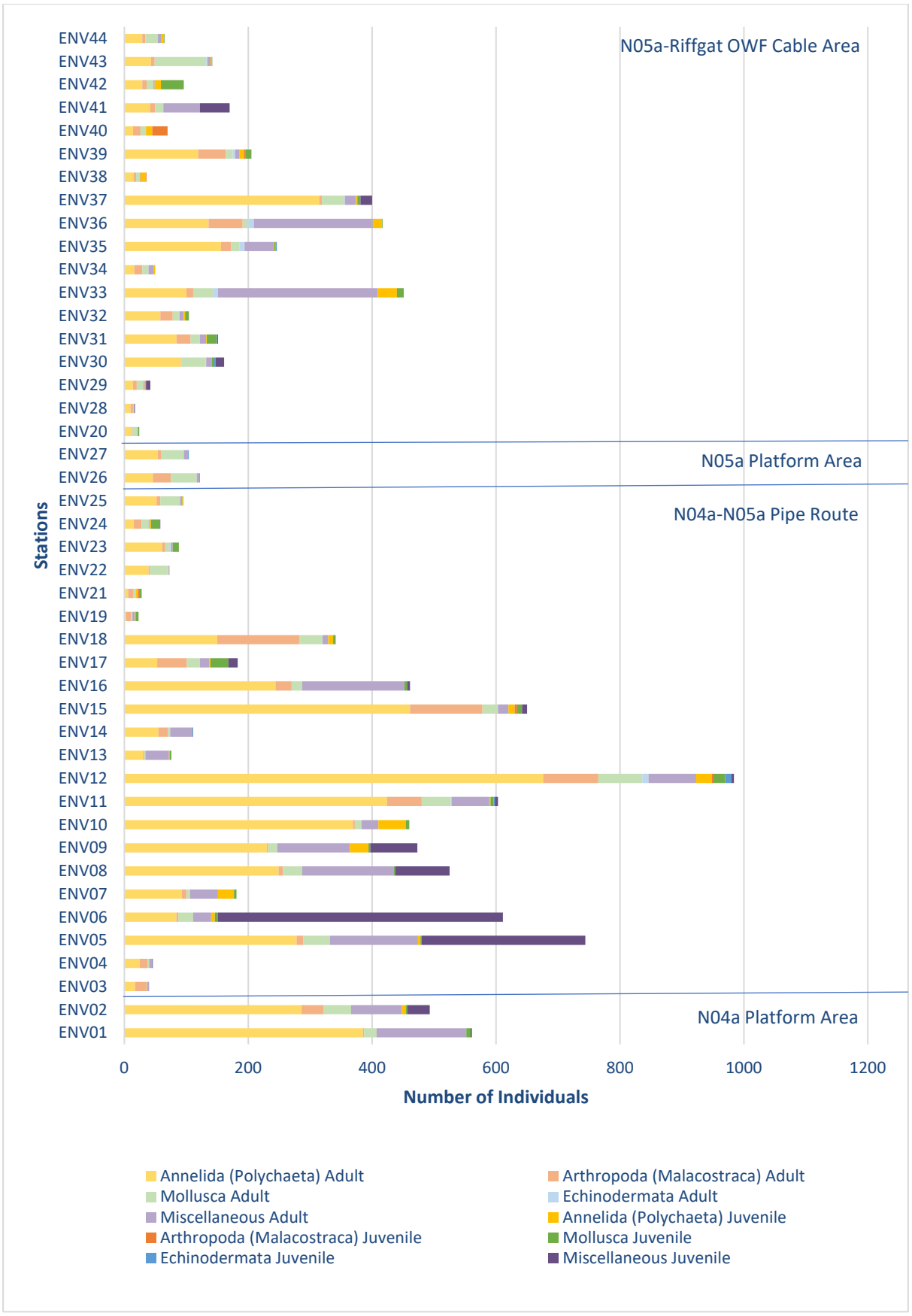


Figure 2.11: Proportion of taxa abundance by main taxonomic group for each station

No single taxa was recorded in every sample, however the polychaetes *Nepthtys cirrosa* and *Scoloplos armiger* were found in 32 (73%) of the samples. Of the 172 taxa recorded in the full dataset, 51 (30%) were singletons (present in one sample only) and of these, 40 were represented by 1 individual (78%). The highest number of individuals were recorded at Station ENV12, which was mainly attributed to the high abundance of *Aonides paucibranchiata*, *Lanice conchilega* and *Loimia* spp.. Ecological communities which are frequently subjected to local disturbance or contamination events are generally dominated by a limited number of tolerant and opportunistic taxa, which will be present in high abundances (Souza *et al.*, 2021). The relatively high numbers of single and low abundance species recorded in this survey suggests a reasonably diverse community that has been subjected to relatively little disturbance or contamination.

Species ranking provides additional information on the overall dominance pattern across the sampled area. Of the top 10 most dominant taxa, 7 were polychaetes (*Aonides paucibranchiata*, *Loimia* spp., *Pisione remota*, *Glycera lapidum*, *Scoloplos armiger*, *Lanice conchilega*, *Eumida sanguinea*), 2 were from the 'Miscellaneous' taxonomic group (Ascidiacea juvenile and *Grania* spp.) and 1 was from Malacostraca (*Pariambus typicus*). In the adult dataset, the juvenile taxa was replaced by another polychaete taxa (*Magelona johnstoni*).

Aonides paucibranchiata was the top most abundant taxa in both datasets and is a dominant and characteristic species of the southern North Sea (Reiss *et al.*, 2010). This species is associated with shallow coarse sand sediments (Künitzer *et al.*, 1992; Markert *et al.*, 2015) and is known to be sensitive to oil, with notable absence from sediments containing more than 10ppm (Kingston, 1992; 1995).

Grania spp. belonging to the annelid class Clitellata was the second most abundant taxa. Erséus (1976) noted *Grania* spp. as an abundant member of coarse-sand communities (500-2000 µm). Along the Belgian and Dutch coasts, the species *Grania postclitellochaeta* has been recorded from subtidal sediments (Van Haaren & Soors, 2013).

In the full data set Ascidiacea juveniles were the third most abundant taxa. In the 2019 survey, juvenile ascidians were also recorded, and were found at 21 of the 56 stations.

Loimia spp. is a terebllelid worm, with 2 known European species: *Loimia medusa* and *Loimia ramzega* (Lavesque *et al.*, 2021). *L. medusa* exhibits some characteristics associated with opportunistic species, namely, the capacity for rapid growth and maturation, a short life span and a relatively high P/B despite its large size (Seitz & Schaffner, 1995). *L. ramzega* was only recently (2016) recorded on the western English channel, therefore, it has been suggested that it may be a non-European species that was only recently introduced to Brittany (Lavesque *et al.*, 2017).

Pisione remota is a scaless scale worm inhabiting coarse sediments in shallow marine waters, particularly those of southern North Sea (Künitzer *et al.*, 1992).

Glycera lapidum has a broad distribution across the North Sea and is generally found on coarse sediments (Künitzer *et al.*, 1992). This species was noted to have a significantly lower abundance at oiled stations (Kingston *et al.*, 1995).

Scoloplos armiger is a widely spread species and is recognised for being highly tolerant to heavy metals (Ryyg, 1985) and typically increases as a result of organic input.

Lanice conchilega is a tube building polychaete, which has a wide geographical distribution and mainly inhabits mixed sand sediments and rarely muddy ones (Holtmann *et al.*, 1996) .

Pariambus typicus is a caprellid amphipod with a wide geographical range and are common on the southern and eastern coasts of Britain (Harrison, 1944). *P. typicus* usually lives as an epibiont on a range of organisms such as algae hydroids, bryozoans or vagile fauna such as asteroids, echinoids and ophiuroids but has also been discovered free-living on the seafloor.

Eumida sanguinea is a predatory polychaete which lives in commensal relationship with *L. conchilega* (Callaway, 2006). It is significantly affected by beam-trawl disturbance and densities of *L. conchilega* (Rabaut *et al.*, 2008).

The last of the 10 most dominant taxa in the adult data set was *Mangelona johnstoni*. *M. johnstoni* is a digging bristle worm and is only found absent in coarse-grained sediments. This polychaete worm displays a clear preference for fine sediments (150 to 300 µm), where the species reaches a relative occurrence of >40% (Degraer *et al.*, 2006).

In the full and adult datasets, the 2 top ranking taxa (*A. paucibranchiata* and *Grania* spp.) from the current survey were also ranked in the top 10 of the comparison survey data sets (GEOxyz, 2019). The 7th rank species in the full data set was also in the top 10 of the comparison full data set. In the adult dataset the 6th, 7th and 10th rank species was also in the top 10 of the comparison adult data set. In the comparison full data set, Asteroidea juvenile was recorded in the top 10 in comparison to Ascidiacea juveniles in the current survey. However, as the surveys were conducted at different times of the year, this difference in juvenile abundance is expected.

Table 2.11: Species ranking results

Rank	Phylum	Class	Taxa	Abundance	Proportion of Individuals (%)
Full data set					
1	Annelida	Polychaeta	***Aonides paucibranchiata***	1,754	16
2	Annelida	Clitellata	***Grania***	1,297	11.8
3	Chordata	Ascidiacea	Ascidiacea (juv.)	1,054	9.6
4	Annelida	Polychaeta	*Loimia*	601	5.5
5	Annelida	Polychaeta	*Pisione remota*	407	3.7
6	Annelida	Polychaeta	*Glycera lapidum*	372	3.4
7	Annelida	Polychaeta	*Scoloplos armiger*	355	3.2
8	Annelida	Polychaeta	***Lanice conchilega***	321	2.9
9	Arthropoda	Malacostraca	*Pariambus typicus*	240	2.2
10	Annelida	Polychaeta	*Eumida sanguinea*	236	2.1
Adult only data set					
1	Annelida	Polychaeta	***Aonides paucibranchiata***	1,754	18.7
2	Annelida	Clitellata	***Grania***	1,297	13.9
3	Annelida	Polychaeta	*Loimia*	601	6.4
4	Annelida	Polychaeta	*Pisione remota*	407	4.3
5	Annelida	Polychaeta	*Glycera lapidum*	372	4
6	Annelida	Polychaeta	***Scoloplos armiger***	355	3.8
7	Annelida	Polychaeta	***Lanice conchilega***	321	3.4

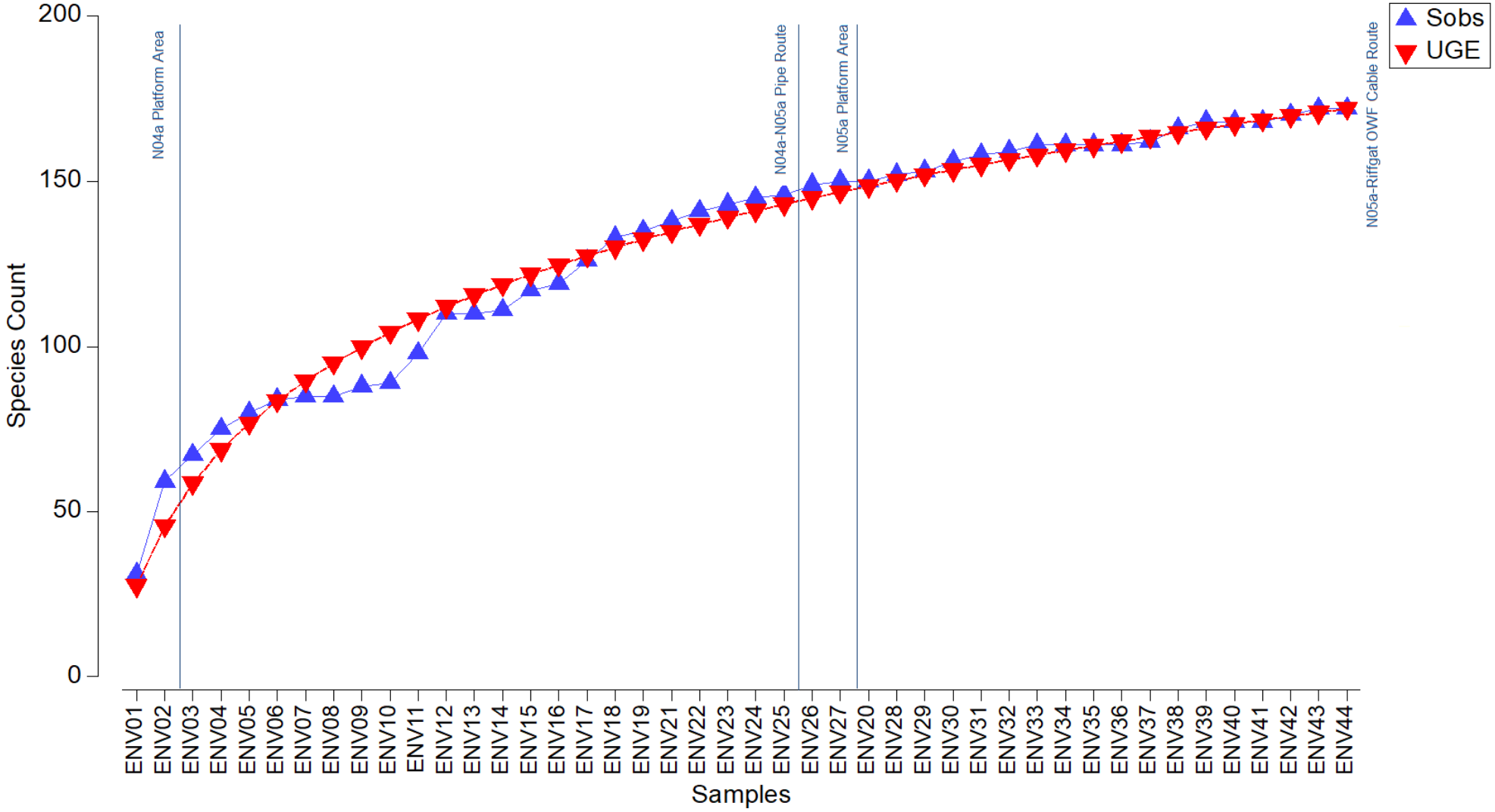
Rank	Phylum	Class	Taxa	Abundance	Proportion of Individuals (%)
8	Arthropoda	Malacostraca	*Pariambus typicus*	240	2.6
9	Annelida	Polychaeta	*Eumida sanguinea*	236	2.5
10	Annelida	Polychaeta	***Magelona johnstoni***	232	2.5
Key	Annelida	Arthropoda	Miscellaneous	Miscellaneous Juvenile	

Taxa in **bold** represents taxa within the top 10 ranked species in the 2019 survey

The species accumulation plot, presented in Figure 2.12 presented the Sobs (plotted in blue) and the UGE curve (plotted in red). The Sobs curve adds new taxa to those already recorded in previous samples, whereas the UGE curve takes an average output based on the sample being added in random order 999 times (Ugland *et al.*, 2003).

The Sobs curve starts above the UGE curve until the addition of the Station ENV06 sample. Samples from Stations ENV07 to ENV17 remain well below the UGE, suggesting that fewer than expected taxa were recorded at these samples. The exceptions were Stations ENV11 and ENV12, which showed a sharp increase in the Sobs curve. With the addition of samples from Station ENV18 onwards, the Sobs curve follows a similar trajectory to UGE, occasionally weaving above or below by a few species. Both the Sobs and UGE curve continue to rise, suggesting that additional sampling is still likely to result in additional species. However, there is some sign of levelling off, suggesting that the Project area is generally well sampled.

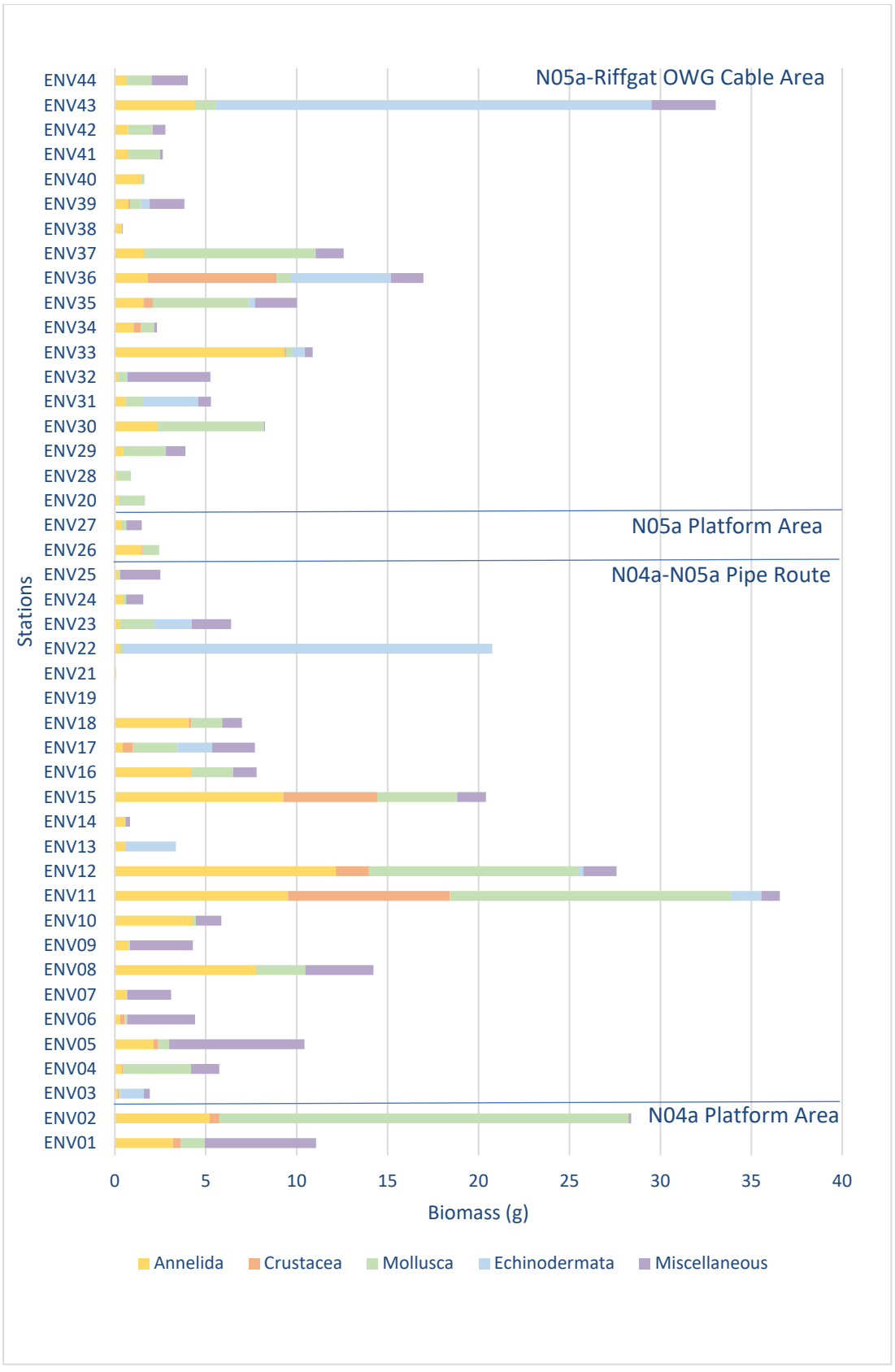
Figure 2.12: Species accumulation plot



Wet weight biomass estimates were recorded for 5 taxonomic groups; Annelida, Crustacea, Mollusca, Echinodermata and 'Miscellaneous'. The 'Miscellaneous' category consisted of indeterminate animalia. The proportional contribution of biomass to each taxonomic groups are presented as stacked bar charts in Figure 2.13.

Mollusca recorded the highest total biomass of 108 g, contributing to 30% of the total biomass. Annelida followed closely with 97 g, contributing 27% of the total biomass. Miscellaneous and Echinodermata each contributed to 18% of the total biomass with 64 g and 67 g , respectively. Crustacea contributed the least (7%) towards the total recorded biomass, recording a total of 27 g. As illustrated in Figure 2.13, relative biomass contribution of each taxonomic group varied greatly across stations. Spearman's correlation revealed a significant positive correlation between Annelida biomass and mean sediment diameter (µm) ($r = 0.66$, $p < 0.001$), which may explain some of the observed differences in biomass across stations. The high biomass of echinoderms at Stations ENV22 and ENV43 was attributed to two individuals of *Echinocardium cordatum* at each station. In contrast, no particular species was found to contribute to the high biomass of Mollusca at Stations ENV02, ENV11 and ENV12 and was likely attributed to a combination of total abundance of Mollusca individuals and presence of heavy weight species/individuals at these stations.

Figure 2.13: Proportion of taxa biomass by main taxonomic group for each station



2.7.3. Univariate Measures

Univariate analysis was performed on the full and adult only datasets, to provide total number of individuals and taxa, Margalef's Richness (*d*), Pielou's Evenness (J'), Shannon Weiner Diversity (H') and Simpson's Dominance (λ). Simpson's Dominance index and Pielou's Evenness both range from 0 to 1, with 1 indicating a dominated community for the former and an even community for the latter. Information on methods for univariate statistics is presented in Appendix B. The univariate measures for all stations are presented in Table 2.12 for the full data set and in Table 2.13 for the adult dataset.

For the full fauna data, Margalef's Richness ranged from 2.80 (ENV21) to 8.71 (ENV12), indicating a wide range of richness across the stations. Margalef's Richness for the adult dataset ranged from 2.57 (ENV27) to 7.52 (ENV17), suggesting that removal of juveniles had little effect on richness. Shannon Wiener Diversity ranged from 1.62 (ENV06) to 4.63 (ENV12) and ranged from 2.34 (ENV21) to 4.60 (ENV17) for the adult data set, indicating higher diversity with the removal of juveniles. Pielou's Evenness ranged from 0.37 (ENV06) to 0.97 (ENV20) in the full data set and from 0.50 (ENV33) to 0.97 (ENV20) in the adult data set, indicating a more even community with the removal of juveniles. In the full data set, Simpson's Dominance ranged from 0.06 (ENV17)to 0.58 (ENV06), whereas in the adult dataset Simpson's Dominance ranged from 0.06 (ENV17) to 0.41 (ENV33), showing a decrease in dominance with the removal of juveniles.

In the full data set ENV06, was the least diverse (H' = 1.62) and even (J' = 0.37) community as well as the most dominated (λ = 0.58). This was largely attributed to the dominance of Ascidiacea juveniles, which accounted for 75% of all recorded Ascidiacea juveniles. In the adult data set, Station ENV33 presented the least even (J' = 0.50) and most dominant (λ = 0.41) community, this was likely attributed by the high number of *Grania* spp. individuals (*n* = 257), which contributed to 63% of all *Grania* spp. individuals. In contrast, across both data sets, Stations ENV12, ENV15, ENV17 and ENV18 presented rich and diverse communities with little dominance.

Overall, the univariate measures indicate a diverse and evenly distributed community. Comparison of the full data set alongside the adult showed that dominance in the Project area was largely a result of seasonal juvenile populations and is likely uncharacteristic of the area during the majority of the year.

When compared to the 2019 survey a larger range of values were generally recorded for all indices in the current survey, likely a result of the larger spatial extent covered compared to the 2019 survey. Despite the larger range, values for all indices were similar for both the full and adult only datasets across the two surveys. The only notable difference between the 2 surveys was the higher maximum number of recorded individuals in the 2019 survey, however, this is down to the fact that only 1 replicate sample was processed for the current survey compared to the 2 samples in the 2019 survey . Once the additional replicate samples from the current survey are included, number of individuals between surveys will be more directly comparable.

Table 2.12: Faunal univariate measures – full fauna

Station	Number of Taxa (S)	Number of Individuals (N)	Margalef's Richness (d)	Pielou's Evenness (J')	Shannon Wiener Diversity (H'_{log2})	Simpson's Dominance (λ)
N04a Platform Area						
ENV01	31	561	4.74	0.69	3.43	0.14
ENV02	43	493	6.77	0.76	4.12	0.09
N04a-N05a Pipe Route						
ENV03	16	40	4.07	0.87	3.47	0.12
ENV04	22	46	5.48	0.87	3.86	0.11
ENV05	34	744	4.99	0.61	3.11	0.19
ENV06	21	611	3.12	0.37	1.62	0.58
ENV07	22	181	4.04	0.72	3.21	0.15
ENV08	30	525	4.63	0.73	3.59	0.12
ENV09	29	473	4.55	0.71	3.44	0.12
ENV10	27	460	4.24	0.59	2.79	0.28
ENV11	41	603	6.25	0.68	3.65	0.14
ENV12	61	984	8.71	0.78	4.63	0.07
ENV13	18	76	3.93	0.72	2.99	0.23
ENV14	25	111	5.10	0.76	3.55	0.15
ENV15	53	650	8.03	0.80	4.60	0.07
ENV16	38	461	6.03	0.68	3.58	0.16
ENV17	43	183	8.06	0.85	4.61	0.06
ENV18	47	341	7.89	0.82	4.58	0.07
ENV19	13	23	3.83	0.95	3.50	0.10
ENV21	13	73	2.80	0.65	2.41	0.28
ENV22	19	88	4.02	0.66	2.82	0.26
ENV23	19	58	4.43	0.85	3.62	0.11
ENV24	22	95	4.61	0.75	3.33	0.16
ENV25	32	122	6.45	0.81	4.07	0.11
N05a Platform Area						
ENV26	18	104	3.66	0.70	2.92	0.21
ENV27	14	24	4.09	0.94	3.57	0.10
N05a-Riffgat OWF Cable Area						
ENV20	19	28	5.40	0.97	4.11	0.06
ENV28	12	17	3.88	0.96	3.45	0.10
ENV29	19	42	4.82	0.91	3.85	0.09
ENV30	31	161	5.90	0.78	3.86	0.12
ENV31	27	151	5.18	0.73	3.48	0.15
ENV32	31	104	6.46	0.82	4.06	0.13
ENV33	37	451	5.89	0.54	2.83	0.34
ENV34	23	50	5.62	0.93	4.19	0.07
ENV35	33	246	5.81	0.74	3.73	0.15
ENV36	33	417	5.30	0.61	3.10	0.24
ENV37	38	400	6.18	0.61	3.22	0.26
ENV38	16	36	4.19	0.90	3.61	0.11
ENV39	35	205	6.39	0.77	3.95	0.13
ENV40	20	70	4.47	0.78	3.39	0.16
ENV41	23	170	4.28	0.69	3.11	0.20
ENV42	21	96	4.38	0.72	3.15	0.19
ENV43	23	142	4.44	0.70	3.17	0.20
ENV44	18	65	4.07	0.85	3.55	0.12
Minimum	**12**	**17**	**2.80**	**0.37**	**1.62**	**0.06**
Maximum	**61**	**984**	**8.71**	**0.97**	**4.63**	**0.58**
Mean	**28**	**250**	**5.16**	**0.76**	**3.52**	**0.16**
SD	**11**	**239**	**1.35**	**0.12**	**0.59**	**0.09**
2019 Survey (GEOxyz, 2019)						
Minimum	**17**	**70**	**3.55**	**0.41**	**2.17**	**0.08**
Maximum	**56**	**1855**	**8.07**	**0.87**	**4.30**	**0.47**
Mean	**35**	**507**	**5.60**	**0.69**	**3.47**	**0.17**
SD	**11**	**446**	**1.15**	**0.11**	**0.47**	**0.09**

Table 2.13: Faunal univariate measures – adult only

Station	Number of Taxa (S)	Number of Individuals (N)	Margalef's Richness (d)	Pielou's Evenness (J')	Shannon Wiener Diversity (H'_{log2})	Simpson's Dominance (λ)
N04a Platform Area						
ENV01	27	552	4.12	0.70	3.33	0.15
ENV02	39	448	6.22	0.75	3.95	0.10
N04a-N05a Pipe Route						
ENV03	16	40	4.07	0.87	3.47	0.12
ENV04	21	45	5.25	0.86	3.79	0.12
ENV05	30	474	4.71	0.67	3.29	0.15
ENV06	17	140	3.24	0.75	3.05	0.17
ENV07	19	151	3.59	0.69	2.94	0.19
ENV08	28	435	4.44	0.73	3.50	0.14
ENV09	24	364	3.90	0.68	3.13	0.16
ENV10	23	410	3.66	0.55	2.49	0.34
ENV11	34	589	5.17	0.69	3.51	0.15
ENV12	51	923	7.32	0.77	4.39	0.08
ENV13	16	72	3.51	0.70	2.80	0.25
ENV14	24	110	4.89	0.76	3.50	0.15
ENV15	47	620	7.15	0.80	4.43	0.07
ENV16	36	452	5.72	0.68	3.49	0.16
ENV17	38	137	7.52	0.88	4.60	0.06
ENV18	43	329	7.25	0.82	4.46	0.07
ENV19	10	17	3.18	0.93	3.10	0.13
ENV21	12	72	2.57	0.65	2.34	0.29
ENV22	18	78	3.90	0.62	2.60	0.32
ENV23	16	40	4.07	0.88	3.53	0.11
ENV24	20	93	4.19	0.75	3.23	0.17
ENV25	31	121	6.26	0.82	4.04	0.11
N05a Platform Area						
ENV26	17	103	3.45	0.70	2.87	0.22
ENV27	13	22	3.88	0.93	3.44	0.11
N05a-Riffgat OWF Cable Area						
ENV20	14	19	4.42	0.97	3.68	0.09
ENV28	11	16	3.61	0.96	3.33	0.11
ENV29	16	33	4.29	0.92	3.68	0.09
ENV30	27	141	5.25	0.76	3.61	0.15
ENV31	22	132	4.30	0.72	3.19	0.18
ENV32	29	96	6.13	0.80	3.91	0.15
ENV33	31	409	4.99	0.50	2.46	0.41
ENV34	22	47	5.45	0.92	4.11	0.07
ENV35	29	241	5.11	0.75	3.62	0.15
ENV36	30	401	4.84	0.60	2.93	0.26
ENV37	32	374	5.23	0.59	2.97	0.29
ENV38	13	26	3.68	0.93	3.46	0.11
ENV39	30	186	5.55	0.74	3.65	0.16
ENV40	17	35	4.50	0.92	3.74	0.09
ENV41	22	122	4.37	0.70	3.14	0.23
ENV42	19	49	4.63	0.83	3.51	0.13
ENV43	21	139	4.05	0.70	3.07	0.20
ENV44	16	59	3.68	0.84	3.36	0.14
Minimum	**10**	**16**	**2.57**	**0.50**	**2.34**	**0.06**
Maximum	**51**	**923**	**7.52**	**0.97**	**4.60**	**0.41**
Mean	**24**	**213**	**4.71**	**0.77**	**3.43**	**0.16**
SD	**10**	**211**	**1.18**	**0.11**	**0.53**	**0.08**
2019 Survey (GEOxyz, 2019)						
Minimum	**15**	**68**	**3.19**	**0.40**	**2.05**	**0.10**
Maximum	**50**	**1480**	**7.27**	**0.87**	**4.04**	**0.49**
Mean	**30**	**470**	**4.98**	**0.68**	**3.30**	**0.18**
SD	**9**	**393**	**0.95**	**0.12**	**0.47**	**0.09**

2.7.4. Multivariate Analyses

Multivariate analyses were performed on the full and adult data sets using PRIMER v7 (Plymouth Marine Laboratories). Bray-Curtis similarity matrices were produced based on the square-root transformed abundance data sets. The transformation was chosen in order to down-weight the influence of dominant species.

A SIMPROF permutation test was conducted in conjunction with CLUSTER analysis and the results were visualised on a dendrogram. Red lines join stations that are statistically indistinguishable, while black lines join stations which are different from one another. The Bray-Curtis similarity dendrograms for the full and adult datasets and are presented in Figure 2.14 and Figure 2.15 , respectively. The MDS ordination for the adult dataset in combination with bubble plots are presented in Figure 2.16.

The CLUSTER analysis dendrogram of the adult data in conjunction with SIMPROF identified 6 clusters, 3 associated pairs and 4 outliers (Figure 2.15). All stations were joined at a Bray-Curtis similarity of 15.99, suggesting that the community composition across the Project area was highly variable. This is likely a reflection of the large spatial scale covered by the Project as well as the various sediments recorded by the geophysical data and PSA. Two outlier stations (ENV20 and ENV38) and an associated cluster were the first two break aways and account for the 4 outliners. This left two large branches each containing 20 stations each. The first branch contained clusters a-h, joined at a similarity of 35.5, while the second branch contained cluster j-f, joined at a similarity of 27.22. The MDS ordination (Figure 2.16) revealed a similar pattern to the dendrogram, and with a stress value of 0.16 it can be considered as a useful representation of rank (dis)similarities and overall pattern observed in the data.

Examination of the faunal data together with results of SIMPER analysis, revealed that the relative abundance of species ranked in the top 10 acted as the major contributors to the similarity within clusters a-h and were less important within clusters j-m (Table 2.14).

The first cluster was formed within the adult only data set (Figure 2.15) with as little as 34% similarity, therefore, in order to better understand the broad pattern of dissimilarity across the macrofauna community in the Project area, a slice at 30% Bray-Curtis Similarity was performed (Figure 2.16). SIMPER analysis was then run on the resulting groups (Figure 2.17). SIMPER results on the groups revealed a higher average abundance of *A. paucibranchiata* and *Grania* spp. at Group A as the main contributors to the dissimilarity between Group A and all other stations. Group B (Station ENV20) separated from the remaining groups (C, D, E, F) at a similarity of 17.68. The relatively higher abundance of the polychaete *Rullierinereis ancornunezi* at Station ENV20 was consistently within the top 4 contributors to the dissimilarity to groups C, D, E and F. The next division in the dendrogram occurred at a similarity of 21.02 where Groups E and F separated away from Groups C and D. The absence of certain species, such as *Fabulina fabula, M. johnstoni* and *Nephtys cirrosa* from Group E and F compared to Groups C and D, was one of the main contributors to the dissimilarities. This was followed closely by the separation of Group E (Station ENV38) from Group F at a similarity of 24.75. The absence of *S. armiger*, *P. remota*, *Ophelia borealis* and *Urothoe brevicornis* at group F contributed to a quarter of the dissimilarity between these 2 groups. Group C and D where the last to split at a similarity of 27.22. Higher relative abundances of *M. johnstoni*, *F. fabula* and *S. armiger* at Group C contributed to the dissimilarity between these two groups. The

relative abundance of the main characterising taxa are presented as bubble on the MDS ordination in Figure 2.16.

Similar patterns were revealed in the full dataset, however the addition of juveniles led to some slight changes in the clusters but this was generally confined within Group A (Figure 2.14). The exception was Station ENV17 which moved from Group C (cluster j) to Group A (cluster h) as defined in the adult dataset (Figure 2.15). Examination of the raw data suggests that a higher abundance of Ascidiacea juveniles at Station ENV17 compared to the other stations in Group C contributed to the switch to Group A.

The faunal community in group A dominated by *A. paucibranchia* and *P. remota* was consistent with offshore habitats distinguished for occurring in the southern North Sea below 30 m and associated with coarse sediment (Künitzer *et al*., 1992). The characterising species *F. Fabulina* in Group C, was only found by Künitzer *et al.* (1992) in the southern North Sea on fine sands at depths less than 30 m. The dichotomy between Group A and C, is therefore, very likely linked to differences in sediment granulometry.

Spatial distribution of the groups were plotted in ArcGIS against the sediment boundaries. As illustrated in Figure 2.18, Group A stations were confined to either the ‘coarse sand’ or ‘coarse sand and clay’ boundaries. In contrast, Group C was generally located in the ‘fine sand’ boundary and along the boundary edge with ‘coarse sand and clay’. Stations in Group D were located within the ‘coarse sand and clay’ boundary of the N05a-Riffgat Cable area as well as the ‘fine sand’ sediment boundary along the north end of the N04a-N05a Pipe Route. The outlier Station ENV38 (Group E) was found in the fine sand sediment boundary in the south of the N05a-Riffgat Cable area, while Station ENV20 (Group B) was located in the ‘coarse sand and clay’ boundary within the N05a-Riffgat Cable area. Lastly, Group F (Stations ENV19 and ENV21) stations were located in the ‘fine sand’ sediment boundary in the south of the N04a-N05a Pipe Route.

Figure 2.14 Bray-Curtis similarity dendrogram – full data

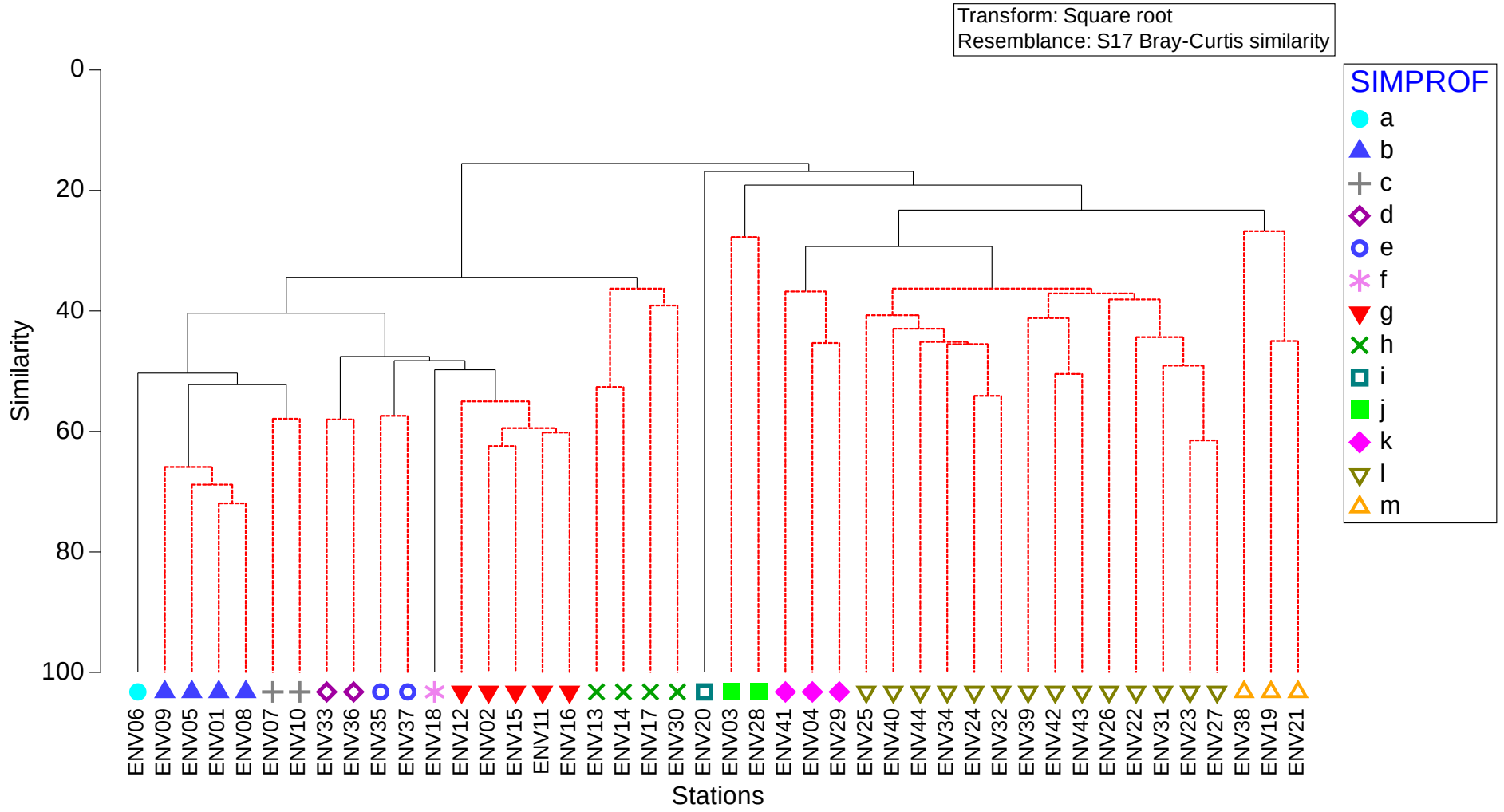


Figure 2.15: Bray-Curtis similarity dendrogram – adult data

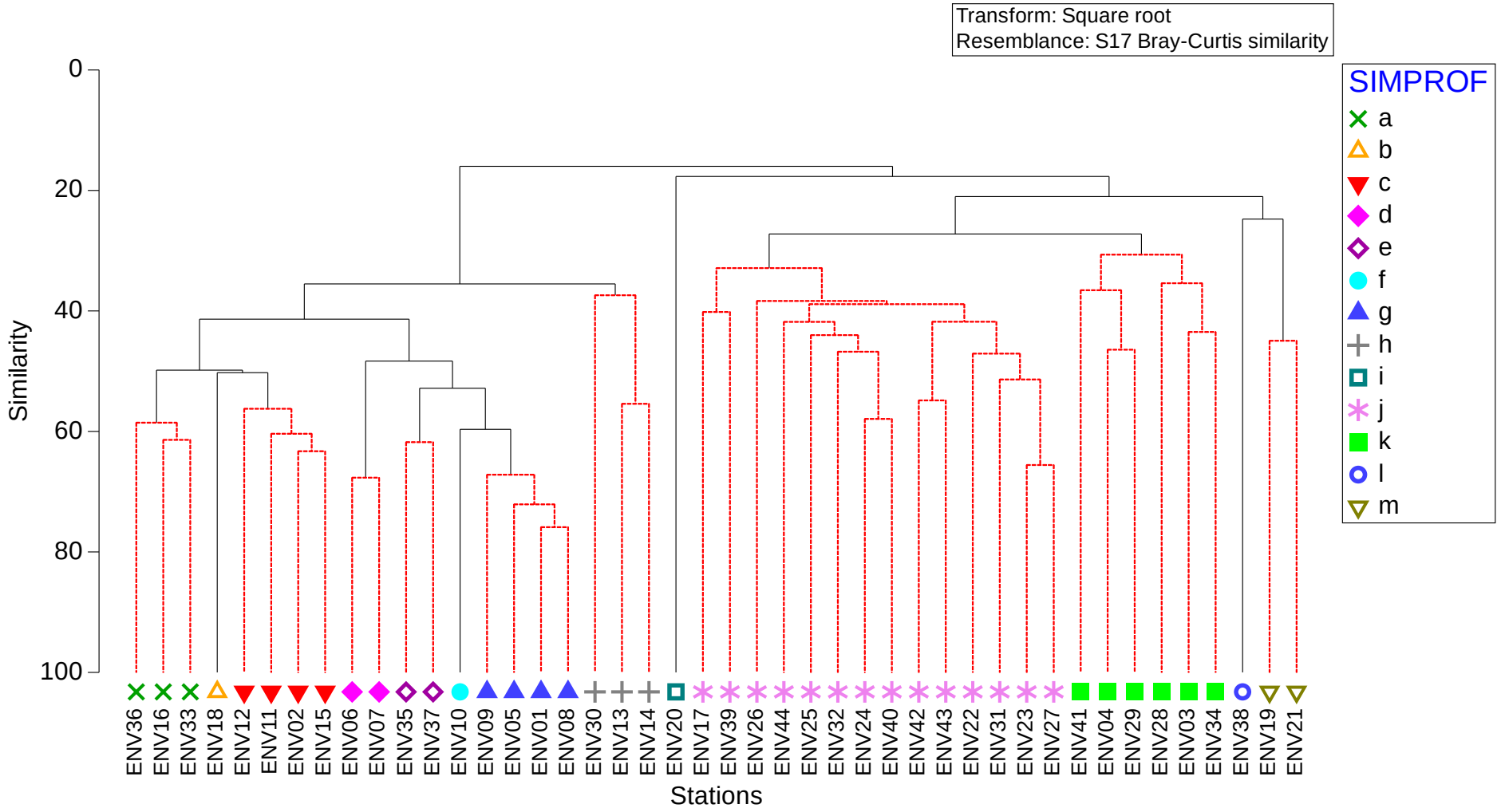


Figure 2.16: MDS ordination of macrofauna with bubble plot– adult data

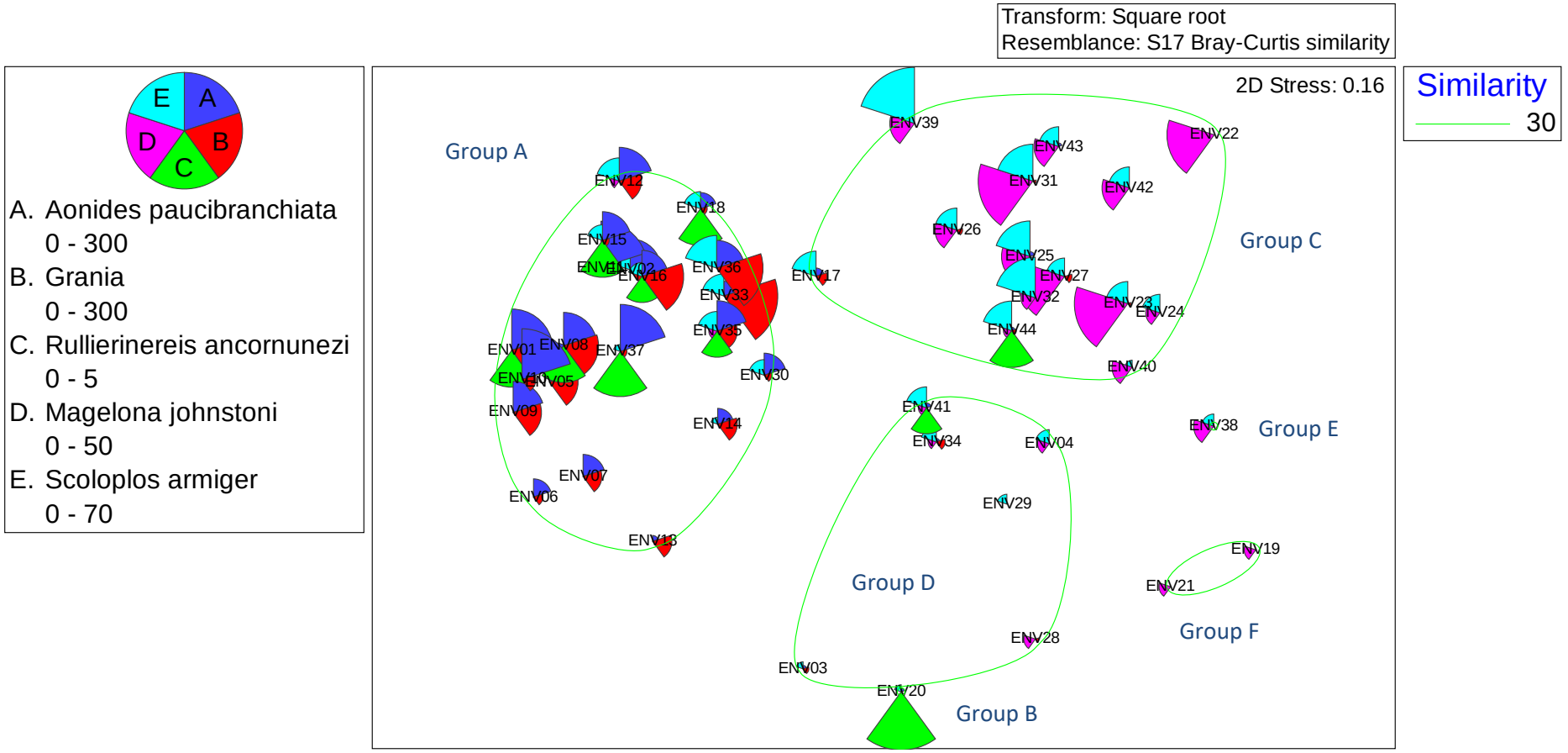


Figure 2.17: Bray-Curtis similarity dendrogram showing groups at 30% similarity slice – adult data

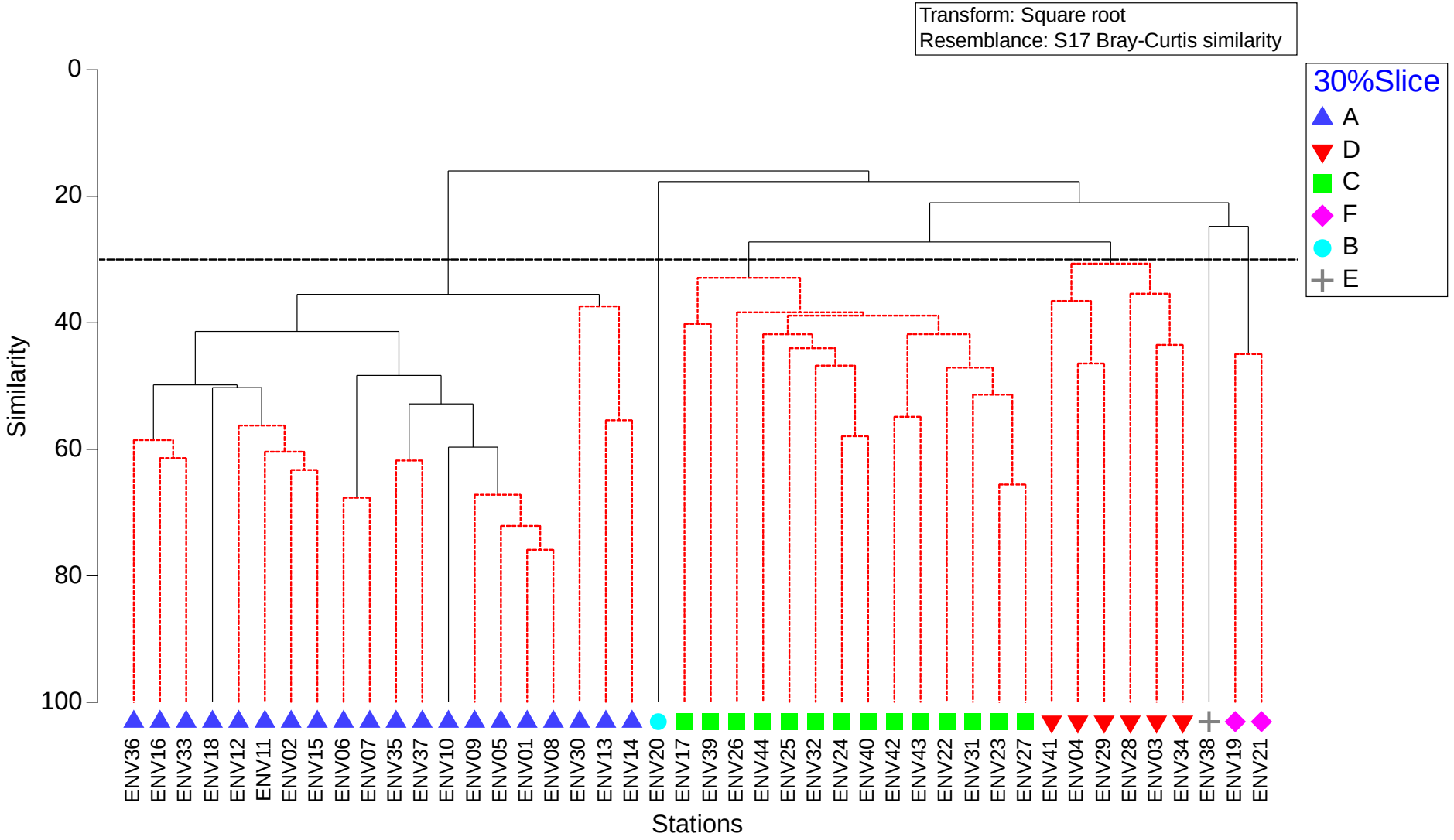


Table 2.14: Taxa contributing to similarity between SIMPROF clusters

SIMPROF	Station (s)	Similarity (%)	Similar Taxa	Average Abundance	Contribution (%)	Group
a	ENV16, ENV33, ENV36	59.5	***Grania* spp.**	14.07	26.6	A
			Aonides paucibranchiata	6.78	11.2	
			Eumida sanguinea	4.53	7.86	
b	ENV18	NA	NA	NA	NA	A
c	ENV02, ENV11, ENV12, ENV15	58.8	***Aonides paucibranchiata***	10.39	12.12	A
			***Loimia* spp.**	9.6	11.52	
			Glycera lapidum	5.06	5.97	
d	ENV06, ENV07	67.67	***Pisione remota***	6.04	21.22	A
			Aonides paucibranchiata	5.97	19.6	
			Branchiostoma lanceolatum	3.86	13.12	
e	ENV35, ENV37	61.79	***Aonides paucibranchiata***	11.53	20.06	A
			Abra alba	3.72	7.35	
			Glycera lapidum	3.56	6.65	
f	ENV10	NA	NA	NA	NA	A
g	ENV01, ENV05, ENV08, ENV09	70.28	***Aonides paucibranchiata***	10.82	16.92	A
			***Grania* spp.**	9.41	15.02	
			Pisione remota	6.24	8.46	
h	ENV13 , ENV14, ENV30	43.41	***Grania* spp.**	4.6	20.54	A
			Aonides paucibranchiata	4.33	14.84	
			Nephtys cirrosa	2.73	13.79	
i	ENV20	NA	NA	NA	NA	B
j	ENV17, ENV22, ENV23, ENV24, ENV25, ENV26, ENV27, ENV31, ENV32, ENV39, ENV40, ENV42, ENV43, ENV44	58.8	***Scoloplos armiger***	3.61	16.29	C
			Fabulina fabula	3.07	16.23	
			Magelona johnstoni	3.36	15.98	

SIMPROF	Station (s)	Similarity (%)	Similar Taxa	Average Abundance	Contribution (%)	Group
k	ENV03, ENV04, ENV28, ENV29, ENV34, ENV41	33.99	*Nephtys cirrosa*	2.56	23.38	D
			Pseudocuma (Pseudocuma) longicorne	1.38	12.95	
			Scoloplos armiger	1.61	9.72	
l	ENV38	NA	NA	NA	NA	E
m	ENV19, ENV21	44.96	***Magelona johnstoni***	1.41	22.05	F
			Eteone longa	1.00	15.59	
			Nototropis falcatus	1.00	15.59	

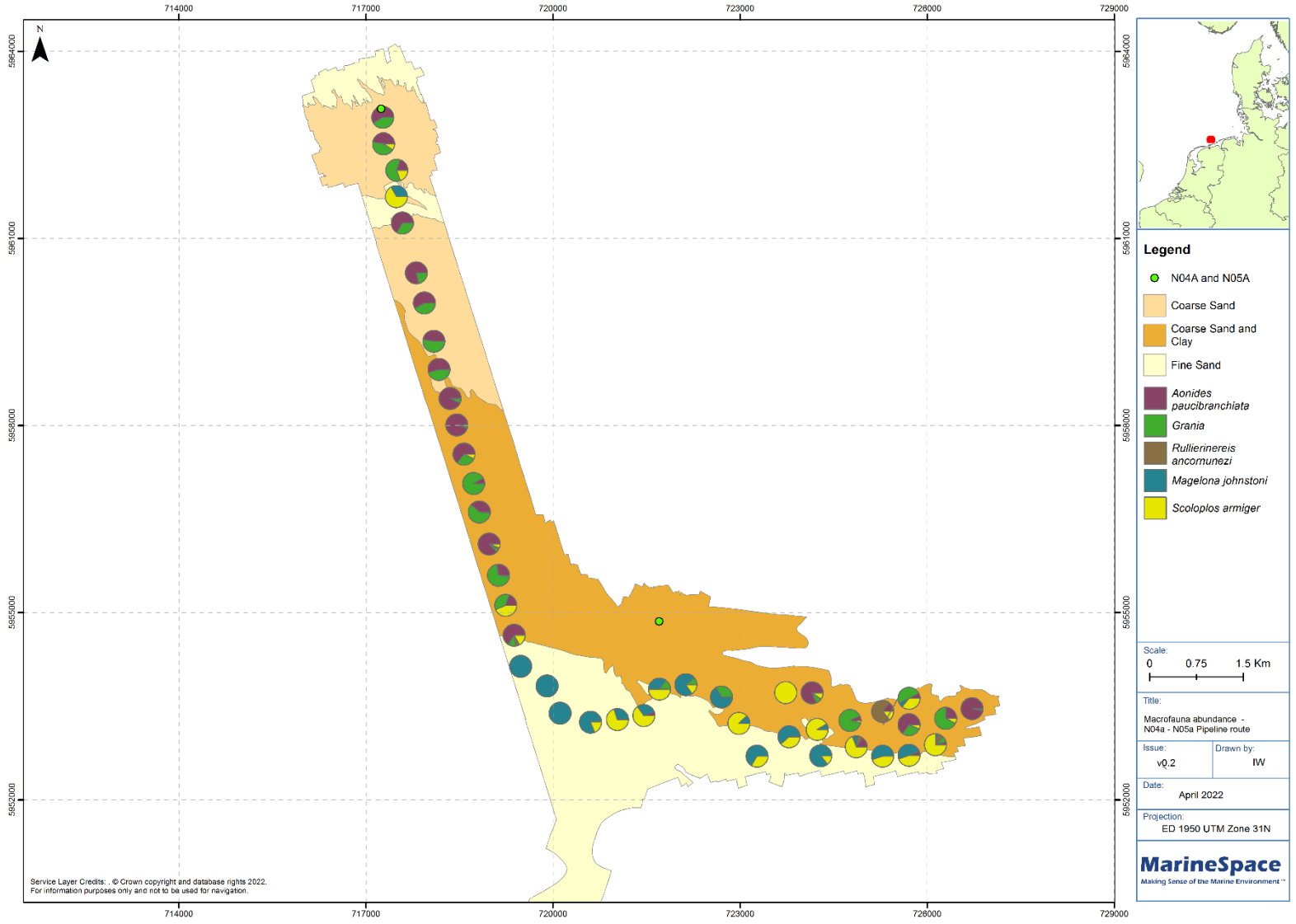
Table 2.15: Taxa contributing to dissimilarity between groups (30% similarity slice)

Group 1 vs Group 2	Dissimilarity	Distinct Taxa	Average Abundance of former Group 1	Average Abundance of Group 2	Contribution (%)
A vs B	84.92	*Aonides paucibranchiata*	8.65	1.00	9.52
		Grania spp.	6.81	0.00	9.01
		Pisione remota	3.50	0.00	4.67
		Loimia spp.	4.12	0.00	4.47
A vs C	83.47	*Aonides paucibranchiata*	8.65	0.42	8.58
		Grania spp.	6.81	0.76	6.62
		Magelona johnstoni	0.10	3.36	3.73
		Pisione remota	3.50	0.27	3.69
A vs D	81.65	*Aonides paucibranchiata*	8.65	0.57	9.56
		Grania spp.	6.81	0.90	7.30
		Pisione remota	3.50	0.00	4.36
		Loimia spp.	4.12	0.17	4.09

Group 1 vs Group 2	Dissimilarity	Distinct Taxa	Average Abundance of former Group 1	Average Abundance of Group 2	Contribution (%)
A vs E	89.5	*Aonides paucibranchiata*	8.65	0.00	10.16
		Grania spp.	6.81	0.00	8.40
		Loimia spp.	4.12	0.00	4.18
		Glycera lapidum	3.48	0.00	3.91
A vs F	91.59	*Aonides paucibranchiata*	8.65	0.00	10.34
		Grania spp.	6.81	0.00	8.57
		Pisione remota	3.50	0.00	4.44
		Glycera lapidum	3.48	0.00	3.97
B vs C	83.48	*Magelona johnstoni*	0.00	3.36	8.11
		Fabulina fabula	0.00	3.07	7.05
		Scoloplos armiger	1.00	3.61	5.85
		Rullierinereis ancornunezi	2.24	0.10	4.96
B vs D	77.11	*Nephtys cirrosa*	0.00	2.56	7.83
		Rullierinereis ancornunezi	2.24	0.17	6.75
		Spisula elliptica	1.73	0.24	4.86
		Pseudocuma (Pseudocuma) longicorne	0.00	1.38	4.58
B vs E	88.19	*Magelona johnstoni*	0.00	2.45	8.20
		Rullierinereis ancornunezi	2.24	0.00	7.48
		Spisula elliptica	1.73	0.00	5.80
		Pisione remota	0.00	1.41	4.73
B vs F	86.83	*Rullierinereis ancornunezi*	2.24	0.00	8.48
		Spisula elliptica	1.73	0.00	6.57
		Magelona johnstoni	0.00	1.41	5.36
		Chaetozone christiei	1.41	0.00	5.36

Group 1 vs Group 2	Dissimilarity	Distinct Taxa	Average Abundance of former Group 1	Average Abundance of Group 2	Contribution (%)
C vs D	72.78	*Magelona johnstoni*	3.36	0.80	6.27
		Fabulina fabula	3.07	0.87	5.31
		Scoloplos armiger	3.61	1.61	5.19
		Phoronis	0.50	1.69	3.33
C vs E	75.7	*Scoloplos armiger*	3.61	1.73	5.13
		Magelona johnstoni	3.36	2.45	4.25
		Fabulina fabula	3.07	1.41	4.17
		Ophelia borealis	0.00	1.41	3.54
C vs F	79.83	*Scoloplos armiger*	3.61	0.00	8.43
		Fabulina fabula	3.07	0.00	7.68
		Magelona johnstoni	3.36	1.41	5.74
		Tellimya ferruginosa	1.36	1.00	3.40
D vs E	77.66	*Nephtys cirrosa*	2.56	0.00	7.51
		Magelona johnstoni	0.80	2.45	5.01
		Pseudocuma (Pseudocuma) longicorne	1.38	0.00	4.38
		Pisione remota	0.00	1.41	4.31
D vs F	81.49	*Nephtys cirrosa*	2.56	0.00	7.80
		Phoronis	1.69	1.00	5.22
		Scoloplos armiger	1.61	0.00	4.45
		Pariambus typicus	0.00	1.37	4.40
E vs F	75.25	*Scoloplos armiger*	1.73	0.00	7.23
		Pisione remota	1.41	0.00	5.90
		Ophelia borealis	1.41	0.00	5.90
		Urothoe brevicornis	1.41	0.00	5.90

Figure 2.18: Map of macrofauna groups over sediment boundaries



2.7.5. Multivariate comparison of Fauna and Physico-Chemical Data Sets

In order to assess whether any relationship between the biological and physico-chemical data were present, a BEST analysis was performed. The analysis between the adult dataset and the physico-chemical data set resulted in a correlation of 63% with chromium, sediment mean diameter (µm), gravel and THC. The full data set showed the same pattern, with a correlation of 63% resulting from the same factors. A selection of these variables is represented as bubbles on the MDS ordinations in Figure 2.19 for the adult data set.

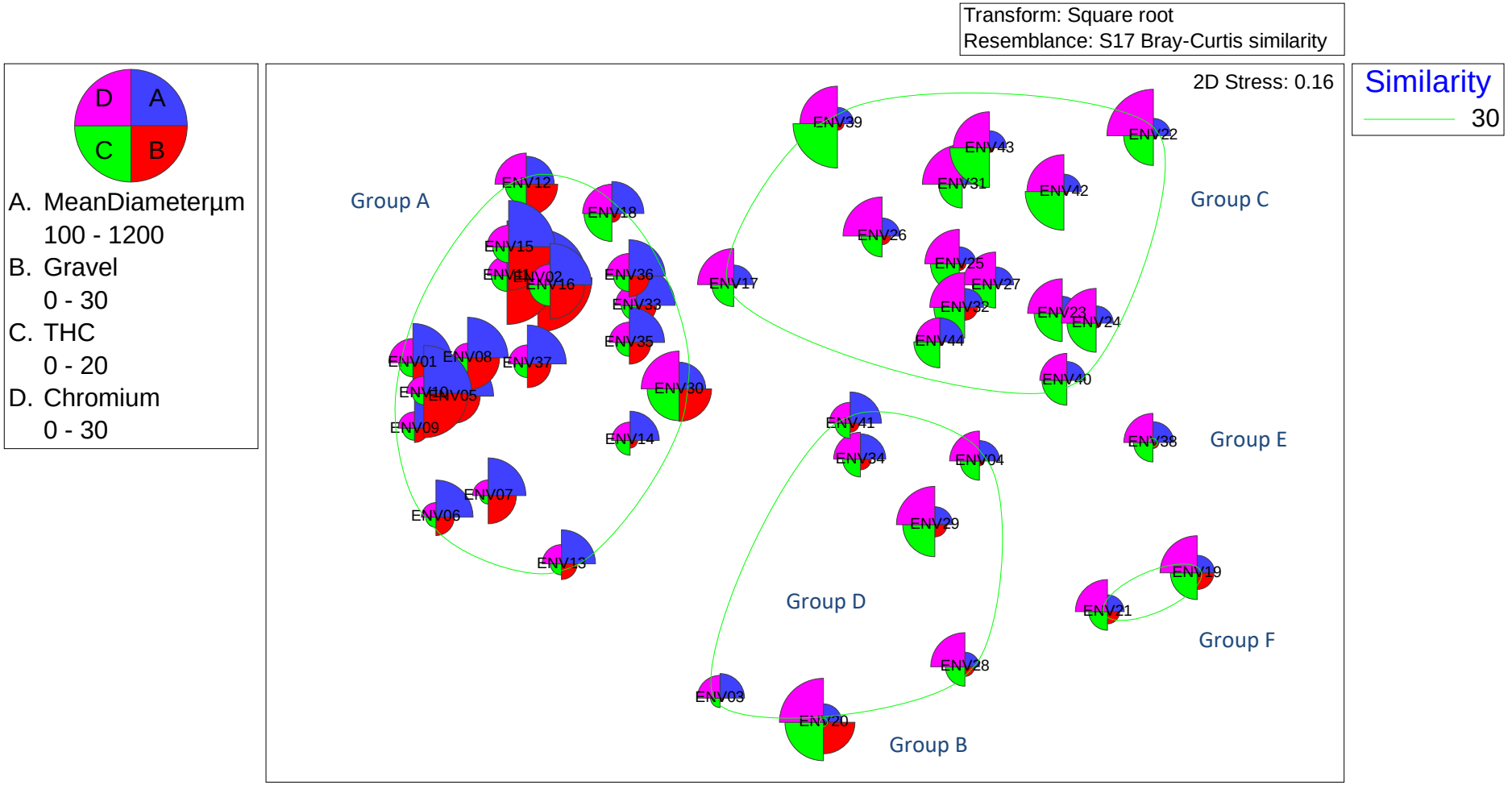
The bubble chart for Station ENV20 shows a different pattern of these 4 environmental variables compared to other stations, suggesting that the distinct macrofaunal community at this station may be a result of exposure to different environmental conditions. PSA revealed Station ENV20 as the only station with gravelly muddy sand and very poorly sorted sediments.

Although ENV38 was revealed as an outlier, the pattern of chromium, sediment mean diameter (µm), gravel and THC in Figure 2.19 closely resemble those from Stations in Group C. Similarly, patterns of these 4 variables at Stations ENV21 and ENV19 (Group D) closely resemble those from Group D. It is possible that with additional sampling at Stations ENV38, ENV21, ENV19, the communities may more closely reflect stations from group C or D.

Inclusion of the physical sediment parameters reflects the natural shift in the faunal community due to variation in sediments. Most notably, the high abundance of *M. johnstoni* coincides with stations with lower sediment mean diameter (µm). Spearman's result revealed a significant negative correlation between abundance of *M. johnstoni* and sediment mean diameter (µm) ($r = -0.41$, $p < 0.01$). As discussed in 2.7.2, this bristle worm is only found absent in coarse-grained sediments and displays a clear preference for fine sediments (Degraer *et al.*, 2006). In contrast, *A. paucibranchiata* is associated with shallow coarse sand sediments (Künitzer *et al.*, 1992; Markert *et al.*, 2015), and Spearman's correlation revealed a significant positive correlation of *A. paucibranchiata* and sediment mean diameter (µm) ($r = 0.89$, $p < 0.001$). A similar positive correlation between *Grania* spp. and sediment mean diameter (µm) was determined ($r=0.46$, $p<0.01$).

The significant negative correlation between chromium and THC with sediment mean diameter (µm) (Appendix F), is clearly reflected in the MDS bubbles. This suggests that the higher concentrations of chromium and THC recorded in the Project area are likely due to natural variability associated with sediment granulometry.

Figure 2.19: MDS ordination of macrofauna groups with physico- chemical variables – adult data set



2.8. EUNIS Habitat Classification

The EUNIS classification hierarchy to biotope level 4 is mainly based on depth and sediment type. Results of the EUNIS habitat classification are based on geophysical data, PSA, epifauna and infauna and are summarised in Table 2.16. EUNIS level 4 habitat for the sediment boundaries are presented in Figure 2.20.

2.8.1. EUNIS Levels 1 and 2

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.

2.8.2. EUNIS Level 3 Habitat Classification

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 stations, therefore all stations 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 (European Environment Agency: Habitat types search, 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 with an increased proportion of cobbles were 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 faunal community constitutes a rich array of both infauna and epibiota including polychaetes, bivalves, echinoderms, anemones, hydroids and Bryozoa.

2.8.3. EUNIS Level 4 Habitat Classification

Across the Project, resemblance to the following corresponding level 4 habitat classifications were identified (Figure 2.20):

- EUNIS habitat A5.13 infralittoral coarse sediment is described as moderately exposed habitats with coarse sand, gravelly sand, shingle and gravel in the infralittoral, 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 A5.24 infralittoral muddy sand is described as non-cohesive muddy sand (with 5% to 20% silt/clay) in the infralittoral zone, extending from the extreme lower shore down to more stable circalittoral zone at about 15-20 m. The habitat supports a variety of animal-dominated communities, particularly polychaetes (*Magelona mirabilis*, *Spiophanes bombyx* and *Chaetozone setosa*), bivalves (*Fabulina fibula* and *Chamelea gallina*) and the urchin *Echinocardium cordatum*.

- EUNIS habitat A5.44 circalittoral mixed sediments is described as mixed (heterogeneous) sediment habitats in the circalittoral zone (generally below 15-20 m) including well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in or lying upon mud, sand or gravel. Due to the variable nature of the seabed, a variety of communities can develop which are often very diverse. A wide range of infaunal polychaetes, bivalves, echinoderms and burrowing anemones such as *Cerianthus lloydii* are often present in such habitat and the presence of hard substrata (shells and stones) on the surface enables epifaunal species to become established, particularly hydroids such as *Nemertesia* spp and *Hydrallmania falcata*. The combination of epifauna and infauna can lead to species rich communities. Coarser mixed sediment communities may show a strong resemblance, in terms of infauna, to biotopes within the A5.1.

EUNIS habitats A5.23 infralittoral fine sand has subsequently been changed to A5.24 infralittoral muddy sand following the review of the PSA and macrofauna data. Likewise A5.43 infralittoral mixed sediment has subsequently been changed to A5.44 circalittoral mixed sediments.

2.8.4. EUNIS Level 5 Habitat Classification

Based on imagery observations and macrofauna, stations showed some resemblance to the following EUNIS level 5 habitats:

- EUNIS A5.441 habitat *Cerianthys lloydii* and other burrowing anemones in cicalittoral muddy mixed sediment is described as circalittoral plains of sandy muddy gravel and may be characterised by burrowing anemones such as *Cerianthus lloydii*. Other burrowing anemones such as *Cereus pedunculatus*, *Mesacmaea mitchellii* and *Aureliania heterocera* may be locally abundant. Relatively few conspicuous species are found in any great number in this biotope but typically they include ubiquitous epifauna such as *Asterias rubens*, *Pagurus bernhardus* and *Liocarcinus depurator* with occasional terebellid polychaetes such as *Lanice conchilega* and also the king scallop *Pecten maximus*. *Ophiura albida* may be frequent in some areas, and where surface shell or stones are present ascidians such as *Ascidiella aspersa* may occur in low numbers.

- EUNIS A5.241 *Echinocardium cordatum* and *Ensis* spp. in lower shore and shallow sublittoral slightly muddy fine sand is described as sheltered lower shore and shallow sublittoral sediments of sand or muddy fine sand in fully marine conditions, supporting populations of the urchin *Echinocardium cordatum* and the razor shell *Ensis siliqua* or *Ensis ensis*. Other notable taxa within this biotope include occasional *Lanice conchilega*, *Pagurus* and *Liocarcinus* spp. and *Asterias rubens*.

- EUNIS biotope A5.137 dense *Lanice conchilega* and other polychaetes in tide swept infralittoral sand and mixed gravelly sand. Dense beds of *Lanice conchilega* occur in coarse to medium fine gravelly sand in the shallow sublittoral, where there are strong tidal streams or wave action. Several other species of polychaete also occur as infauna e.g. *Spiophanes bombyx*, *Scoloplos armiger*, *Chaetozone setosa* and *Magelona mirabilis*. *Lanice* beds are found in a wide range of habitats including muddier mixed sediment.

It is important to note that EUNIS A5.441 habitat lacks infaunal data and therefore infaunal results could not be used to determine resemblance to this biotope. Conclusions are consequently largely depended on seabed imagery observations. Similarly, detailed quantitative infaunal data for EUNIS A5.241 biotope is often rather scarce. EUNIS results have thus only been reported to biotope Level 4 for these habitats.

From the review of seabed imagery and grab sample data (macrofauna and PSA) it is clear that a single station has the potential to have all 3 broad scale habitats. This suggests that Project area comprises a mosaic of different habitats, particularly within the 'coarse sand and clay' sediment boundary.

Table 2.16: EUNIS Habitat Classification

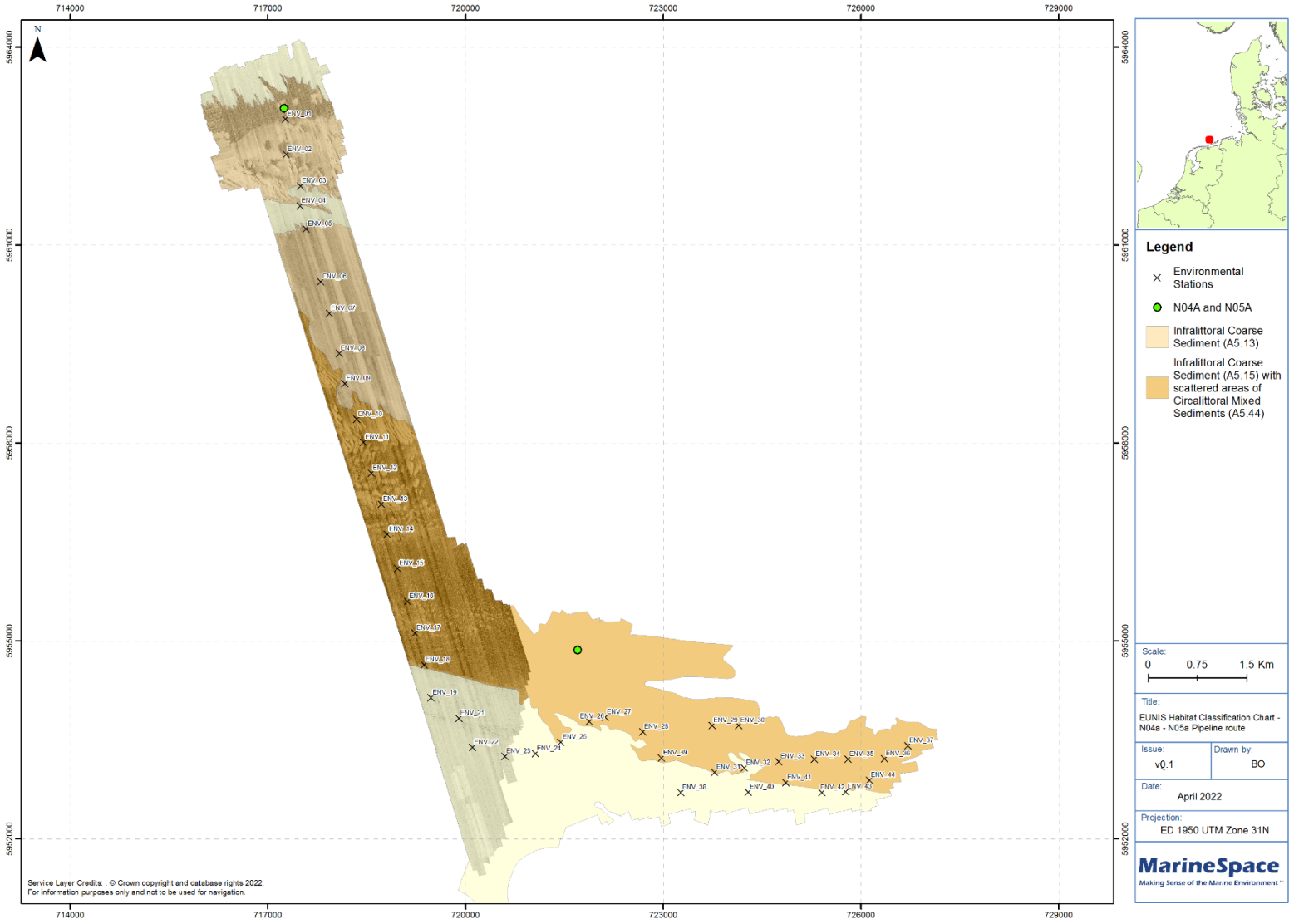
Station	Depth (m LAT)	Folk Classification	EUNIS Habitat Classification
N04a Platform area			
ENV01	22	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV02	22	Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
N04a-N05a Pipe Route			
ENV03	25	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
ENV04	24	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
ENV05	23	Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV06	22	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
ENV07	21	Gravelly Sand	A5.13 Infralittoral Coarse Sediment
ENV08	24	Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV09	22	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
ENV10	21	Gravelly Sand	A5.13 Infralittoral Coarse Sediment
ENV11	23	Gravelly sand	A5.13 Infralittoral Coarse Sediment
ENV12	24	Gravelly sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV13	24	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
ENV14	24	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment

Station	Depth (m LAT)	Folk Classification	EUNIS Habitat Classification
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
			A5.44 Circalittoral Mixed Sediment
ENV15	24	Gravelly sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV16	26	Gravelly sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV17	26	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV18	24	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
			A5.24 infralittoral Muddy Sand
ENV19	25	Slightly Gravelly Sand	A5.24 infralittoral Muddy Sand
ENV21	25	Slightly Gravelly Sand	A5.24 infralittoral Muddy Sand
			A5.44 Circalittoral Mixed Sediment
ENV22	24	Slightly Gravelly Sand	A5.24 infralittoral Muddy Sand
ENV23	24	Slightly Gravelly Sand	A5.24 infralittoral Muddy Sand
ENV24	24	Slightly Gravelly Sand	A5.24 infralittoral Muddy Sand
ENV25	24	Slightly Gravelly Sand	A5.24 infralittoral Muddy Sand
			A5.44 Circalittoral Mixed Sediment
N05a Platform Area			
ENV26	25	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV27	25	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
N05a-Riffgat OWF Cable Route Area			
ENV20	24	Gravelly Muddy Sand	A5.13 Infralittoral Coarse Sediment

Station	Depth (m LAT)	Folk Classification	EUNIS Habitat Classification
			A5.44 Circalittoral Mixed Sediment
ENV28	24	Slightly Gravelly Muddy Sand	A5.13 Infralittoral Coarse Sediment
			A5.44 Circalittoral Mixed Sediment
ENV29	22	Slightly Gravelly Muddy Sand	A5.13 Infralittoral Coarse Sediment
			A5.44 Circalittoral Mixed Sediment
ENV30	24	Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.44 Circalittoral Mixed Sediment
ENV31	23	Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
ENV32	22	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
ENV33	21	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
			A5.44 Circalittoral Mixed Sediment
ENV34	24	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.44 Circalittoral Mixed Sediment
ENV35	23	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.44 Circalittoral Mixed Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV36	23	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV37	22	Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.44 Circalittoral Mixed Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV38	23	Slightly Gravelly Sand	A5.24 infralittoral Muddy Sand
ENV39	24	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment

Station	Depth (m LAT)	Folk Classification	EUNIS Habitat Classification
			A5.44 Circalittoral Mixed Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV40	23	Sand	A5.24 infralittoral Muddy Sand
ENV41	24	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV42	22	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV43	22	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
			A5.44 Circalittoral Mixed Sediment
			A5.137 Dense *Lanice conchilega* and other polychaetes in tideswept infralittoral sand and mixed gravelly sand
ENV44	22	Slightly Gravelly Sand	A5.13 Infralittoral Coarse Sediment
			A5.24 infralittoral Muddy Sand
			A5.44 Circalittoral Mixed Sediment

Figure 2.20: EUNIS Level 4 Habitats within the Project



2.9. Summary of Infauna Results

As expected for soft bottom benthos, the faunal community was dominated by polychaetes (Gage, 2001). With the exclusion of juveniles, the community presented a high degree of evenness, with no species presenting a particular dominance. Diversity indices were similar to those of the previous survey but generally presented a wider range. Higher abundance of characteristic polychaete species *Aonides paucibranchia* and *Grania* spp. was found to be positively correlated with mean sediment diameter (µm), and thus generally found most abundant in the 'coarse sand' and 'coarse sand and clay' sediment boundaries. In contrast, the characteristic polychaete *M. johnstoni* was found to be negatively correlated with mean sediment diameter(µm), and correspondingly was generally found present in higher abundances within the 'fine sand' sediment boundary.

EUNIS habitat and biotope classification at each station supported the presence of 2 main habitats based on sediment granulometry of coarse sand and fine sand. Stations with coarse sand were generally found to resemble A5.13 - Infralittoral coarse sediment whereas stations with finer sediments generally resembled A5.24 - Infralittoral muddy sand. Areas where sediment were more variable, 'coarse sand and clay' sediment boundary, also tended to resemble the biotope A5.44 - Circalittoral mixed sediments.

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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Appendix A. Environmental Field Logs

Appendix A1: Stills positional logs

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_164913.jpg	345	16:49:15	08/11/2021	53.767724	6.296607	717266.710	5962850.380
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_164944.jpg	346	16:49:46	08/11/2021	53.767762	6.296612	717266.815	5962854.627
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165013.jpg	347	16:50:14	08/11/2021	53.767828	6.296626	717267.435	5962861.956
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165041.jpg	348	16:50:42	08/11/2021	53.767877	6.296646	717268.515	5962867.506
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165105.jpg	349	16:51:08	08/11/2021	53.767931	6.296645	717268.120	5962873.550
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165123.jpg	350	16:51:25	08/11/2021	53.767963	6.296649	717268.252	5962877.110
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165145.jpg	351	16:51:46	08/11/2021	53.768000	6.296656	717268.505	5962881.227
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165204.jpg	352	16:52:05	08/11/2021	53.768046	6.296650	717267.865	5962886.301
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165228.jpg	353	16:52:29	08/11/2021	53.768104	6.296635	717266.558	5962892.710
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165250.jpg	354	16:52:52	08/11/2021	53.768138	6.296648	717267.240	5962896.505
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165305.jpg	355	16:53:06	08/11/2021	53.768184	6.296632	717266.005	5962901.655
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165333.jpg	356	16:53:34	08/11/2021	53.768229	6.296639	717266.195	5962906.675
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165350.jpg	357	16:53:51	08/11/2021	53.768272	6.296638	717265.905	5962911.415
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165440.jpg	358	16:54:41	08/11/2021	53.768370	6.296636	717265.315	5962922.289
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165506.jpg	359	16:55:07	08/11/2021	53.768460	6.296665	717266.705	5962932.451
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165514.jpg	360	16:55:16	08/11/2021	53.768480	6.296666	717266.670	5962934.640
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165535.jpg	361	16:55:36	08/11/2021	53.768531	6.296680	717267.350	5962940.365
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165550.jpg	362	16:55:51	08/11/2021	53.768565	6.296678	717267.050	5962944.065
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165605.jpg	363	16:56:07	08/11/2021	53.768601	6.296674	717266.595	5962948.090
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165612.jpg	364	16:56:13	08/11/2021	53.768608	6.296686	717267.315	5962948.925
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165625.jpg	365	16:56:27	08/11/2021	53.768645	6.296674	717266.375	5962953.020
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165641.jpg	366	16:56:43	08/11/2021	53.768677	6.296677	717266.380	5962956.590
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165650.jpg	367	16:56:51	08/11/2021	53.768699	6.296673	717266.035	5962958.955
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165700.jpg	368	16:57:02	08/11/2021	53.768720	6.296682	717266.530	5962961.340
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165717.jpg	369	16:57:19	08/11/2021	53.768756	6.296681	717266.280	5962965.370
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165738.jpg	370	16:57:39	08/11/2021	53.768801	6.296680	717265.975	5962970.385
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165745.jpg	371	16:57:47	08/11/2021	53.768813	6.296687	717266.365	5962971.695
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165755.jpg	372	16:57:57	08/11/2021	53.768839	6.296686	717266.135	5962974.565
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165813.jpg	373	16:58:14	08/11/2021	53.768884	6.296687	717265.995	5962979.655
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165835.jpg	374	16:58:37	08/11/2021	53.768946	6.296670	717264.527	5962986.495
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165852.jpg	375	16:58:53	08/11/2021	53.768989	6.296669	717264.260	5962991.290
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165900.jpg	376	16:59:01	08/11/2021	53.769006	6.296672	717264.360	5962993.175
N04A Platform Area	ENV_01	MARDUT1021_ENV_01_2021_11_08_165907.jpg	377	16:59:09	08/11/2021	53.769024	6.296680	717264.817	5962995.207
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154256.jpg	319	15:42:59	08/11/2021	53.763245	6.295473	717215.100	5962348.840
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154430.jpg	320	15:44:33	08/11/2021	53.763346	6.295788	717235.370	5962360.970
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154447.jpg	321	15:44:50	08/11/2021	53.763358	6.295834	717238.310	5962362.491
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154509.jpg	322	15:45:12	08/11/2021	53.763384	6.295893	717242.110	5962365.520
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154532.jpg	323	15:45:36	08/11/2021	53.763408	6.295983	717247.880	5962368.489
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154550.jpg	324	15:45:53	08/11/2021	53.763423	6.296035	717251.230	5962370.290
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154610.jpg	325	15:46:14	08/11/2021	53.763445	6.296112	717256.180	5962372.960

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154630.jpg	326	15:46:34	08/11/2021	53.763464	6.296202	717262.020	5962375.360
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154656.jpg	327	15:46:59	08/11/2021	53.763488	6.296304	717268.620	5962378.430
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154715.jpg	328	15:47:18	08/11/2021	53.763498	6.296373	717273.150	5962379.670
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154724.jpg	329	15:47:27	08/11/2021	53.763501	6.296394	717274.520	5962380.080
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154740.jpg	330	15:47:44	08/11/2021	53.763515	6.296454	717278.370	5962381.810
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154757.jpg	331	15:48:00	08/11/2021	53.763534	6.296501	717281.350	5962384.090
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154803.jpg	332	15:48:06	08/11/2021	53.763534	6.296522	717282.770	5962384.140
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154816.jpg	333	15:48:20	08/11/2021	53.763547	6.296547	717284.330	5962385.650
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154832.jpg	334	15:48:35	08/11/2021	53.763557	6.296598	717287.620	5962386.980
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154847.jpg	335	15:48:51	08/11/2021	53.763572	6.296656	717291.360	5962388.800
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_154902.jpg	336	15:49:05	08/11/2021	53.763585	6.296713	717295.100	5962390.410
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155005.jpg	337	15:50:08	08/11/2021	53.763664	6.296907	717307.420	5962399.840
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155019.jpg	338	15:50:22	08/11/2021	53.763669	6.296923	717308.450	5962400.399
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155032.jpg	339	15:50:36	08/11/2021	53.763671	6.296961	717311.000	5962400.760
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155042.jpg	340	15:50:45	08/11/2021	53.763686	6.296994	717313.060	5962402.510
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155101.jpg	341	15:51:04	08/11/2021	53.763706	6.297065	717317.670	5962404.940
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155121.jpg	342	15:51:24	08/11/2021	53.763732	6.297125	717321.490	5962408.040
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155143.jpg	343	15:51:46	08/11/2021	53.763769	6.297204	717326.450	5962412.441
N04A Platform Area	ENV_02	MARDUT1021_ENV_02_2021_11_08_155201.jpg	344	15:52:04	08/11/2021	53.763778	6.297255	717329.800	5962413.550
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183042.jpg	100	18:31:25	05/11/2021	53.681427	6.353720	721482.870	5953430.250
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183230.jpg	101	18:33:12	05/11/2021	53.681424	6.353640	721477.610	5953429.750
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183328.jpg	102	18:34:11	05/11/2021	53.681466	6.353594	721474.330	5953434.200
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183401.jpg	103	18:34:43	05/11/2021	53.681499	6.353537	721470.440	5953437.700
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183416.jpg	104	18:34:58	05/11/2021	53.681529	6.353503	721468.010	5953440.960
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183438.jpg	105	18:35:21	05/11/2021	53.681575	6.353452	721464.420	5953445.960
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183453.jpg	106	18:35:35	05/11/2021	53.681588	6.353433	721463.110	5953447.340
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183514.jpg	107	18:35:56	05/11/2021	53.681610	6.353402	721460.960	5953449.610
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183539.jpg	108	18:36:21	05/11/2021	53.681646	6.353360	721457.940	5953453.500
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183602.jpg	109	18:36:45	05/11/2021	53.681678	6.353324	721455.410	5953456.910
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183632.jpg	110	18:37:14	05/11/2021	53.681726	6.353282	721452.400	5953462.140
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183652.jpg	111	18:37:34	05/11/2021	53.681760	6.353255	721450.410	5953465.860
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183716.jpg	112	18:37:58	05/11/2021	53.681799	6.353225	721448.270	5953470.100
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183739.jpg	113	18:38:21	05/11/2021	53.681839	6.353172	721444.520	5953474.381
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183800.jpg	114	18:38:42	05/11/2021	53.682023	6.352626	721407.530	5953493.140
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183826.jpg	115	18:39:09	05/11/2021	53.681919	6.353161	721443.420	5953483.230
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183858.jpg	116	18:39:41	05/11/2021	53.681982	6.353090	721438.402	5953490.067
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183927.jpg	117	18:40:09	05/11/2021	53.682020	6.353053	721435.710	5953494.120
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_183956.jpg	118	18:40:37	05/11/2021	53.682087	6.352952	721428.690	5953501.260
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_184018.jpg	119	18:41:00	05/11/2021	53.682114	6.352950	721428.430	5953504.250
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_184124.jpg	120	18:42:06	05/11/2021	53.682244	6.352817	721419.010	5953518.310
N04A - N05A Pipe Route	ENV_25	MARDUT1021_ENV_25_2021_11_05_184146.jpg	121	18:42:28	05/11/2021	53.682274	6.352778	721416.250	5953521.500
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_191508.jpg	122	19:15:48	05/11/2021	53.679802	6.347614	721088.320	5953230.580
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_191732.jpg	123	19:18:11	05/11/2021	53.679923	6.347651	721090.080	5953244.110
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_191745.jpg	124	19:18:24	05/11/2021	53.679934	6.347632	721088.770	5953245.290

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_191818.jpg	125	19:18:57	05/11/2021	53.679955	6.347594	721086.200	5953247.500
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_191835.jpg	126	19:19:15	05/11/2021	53.679984	6.347545	721082.800	5953250.550
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_191857.jpg	127	19:19:37	05/11/2021	53.679996	6.347543	721082.560	5953251.880
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_191908.jpg	128	19:19:47	05/11/2021	53.680012	6.347533	721081.860	5953253.710
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192012.jpg	129	19:20:52	05/11/2021	53.680109	6.347463	721076.720	5953264.240
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192039.jpg	130	19:21:19	05/11/2021	53.680148	6.347450	721075.640	5953268.540
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192059.jpg	131	19:21:39	05/11/2021	53.680178	6.347426	721073.890	5953271.820
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192133.jpg	132	19:22:12	05/11/2021	53.680257	6.347365	721069.470	5953280.420
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192156.jpg	133	19:22:35	05/11/2021	53.680309	6.347331	721066.980	5953286.080
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192226.jpg	134	19:23:05	05/11/2021	53.680350	6.347322	721066.140	5953290.620
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192328.jpg	135	19:24:07	05/11/2021	53.680488	6.347242	721060.150	5953305.730
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192442.jpg	136	19:25:22	05/11/2021	53.680692	6.347072	721047.860	5953327.836
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192455.jpg	137	19:25:35	05/11/2021	53.680706	6.347065	721047.340	5953329.330
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192513.jpg	138	19:25:52	05/11/2021	53.680749	6.347022	721044.220	5953334.065
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192528.jpg	139	19:26:07	05/11/2021	53.680779	6.347007	721043.125	5953337.316
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192556.jpg	140	19:26:38	05/11/2021	53.680890	6.346948	721038.590	5953349.460
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192613.jpg	141	19:26:52	05/11/2021	53.680901	6.346946	721038.430	5953350.730
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192627.jpg	142	19:27:07	05/11/2021	53.680922	6.346952	721038.720	5953353.030
N04A - N05A Pipe Route	ENV_24	MARDUT1021_ENV_24_2021_11_05_192652.jpg	143	19:27:31	05/11/2021	53.680979	6.346941	721037.710	5953359.400
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202116.jpg	144	20:21:57	05/11/2021	53.679778	6.340159	720596.260	5953204.710
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202131.jpg	145	20:22:12	05/11/2021	53.679805	6.340168	720596.690	5953207.700
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202153.jpg	146	20:22:34	05/11/2021	53.679837	6.340170	720596.665	5953211.350
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202222.jpg	147	20:23:03	05/11/2021	53.679889	6.340169	720596.335	5953217.136
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202247.jpg	148	20:23:28	05/11/2021	53.679941	6.340175	720596.455	5953222.890
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202312.jpg	149	20:23:53	05/11/2021	53.679981	6.340175	720596.215	5953227.394
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202343.jpg	150	20:24:24	05/11/2021	53.680052	6.340179	720596.120	5953235.240
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202359.jpg	151	20:24:40	05/11/2021	53.680075	6.340204	720597.675	5953237.855
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202430.jpg	152	20:25:12	05/11/2021	53.680123	6.340282	720602.530	5953243.445
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202437.jpg	153	20:25:18	05/11/2021	53.680123	6.340267	720601.560	5953243.450
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202509.jpg	154	20:25:51	05/11/2021	53.680183	6.340311	720604.165	5953250.230
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202536.jpg	155	20:26:17	05/11/2021	53.680242	6.340300	720603.080	5953256.760
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202540.jpg	156	20:26:21	05/11/2021	53.680252	6.340301	720603.108	5953257.900
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202558.jpg	157	20:26:39	05/11/2021	53.680287	6.340302	720602.995	5953261.740
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202627.jpg	158	20:27:09	05/11/2021	53.680349	6.340295	720602.195	5953268.641
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202643.jpg	159	20:27:25	05/11/2021	53.680375	6.340310	720603.060	5953271.625
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202658.jpg	160	20:27:40	05/11/2021	53.680422	6.340312	720602.980	5953276.830
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202714.jpg	161	20:27:55	05/11/2021	53.680459	6.340324	720603.583	5953280.992
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202730.jpg	162	20:28:11	05/11/2021	53.680503	6.340324	720603.340	5953285.850
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202745.jpg	163	20:28:26	05/11/2021	53.680538	6.340331	720603.640	5953289.795
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202803.jpg	164	20:28:45	05/11/2021	53.680589	6.340350	720604.582	5953295.540
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202912.jpg	165	20:29:53	05/11/2021	53.680819	6.340441	720609.425	5953321.385
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202919.jpg	166	20:30:00	05/11/2021	53.680834	6.340445	720609.565	5953323.045
N04A - N05A Pipe Route	ENV_23	MARDUT1021_ENV_23_2021_11_05_202934.jpg	167	20:30:15	05/11/2021	53.680861	6.340457	720610.211	5953326.078
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210550.jpg	168	21:06:31	05/11/2021	53.681297	6.332537	720085.100	5953350.020

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210605.jpg	169	21:06:46	05/11/2021	53.681323	6.332575	720087.430	5953353.020
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210629.jpg	170	21:07:10	05/11/2021	53.681347	6.332614	720089.890	5953355.840
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210651.jpg	171	21:07:32	05/11/2021	53.681392	6.332683	720094.260	5953360.980
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210705.jpg	172	21:07:47	05/11/2021	53.681410	6.332707	720095.720	5953363.040
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210724.jpg	173	21:08:06	05/11/2021	53.681440	6.332743	720097.950	5953366.550
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210740.jpg	174	21:08:21	05/11/2021	53.681467	6.332796	720101.270	5953369.740
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210759.jpg	175	21:08:41	05/11/2021	53.681489	6.332818	720102.670	5953372.240
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210804.jpg	176	21:08:45	05/11/2021	53.681491	6.332813	720102.290	5953372.410
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210824.jpg	177	21:09:05	05/11/2021	53.681532	6.332874	720106.120	5953377.200
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210835.jpg	178	21:09:17	05/11/2021	53.681547	6.332899	720107.670	5953378.960
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210848.jpg	179	21:09:29	05/11/2021	53.681554	6.332910	720108.350	5953379.720
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210904.jpg	180	21:09:45	05/11/2021	53.681581	6.332931	720109.620	5953382.790
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210933.jpg	181	21:10:14	05/11/2021	53.681640	6.333014	720114.800	5953389.670
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_210952.jpg	182	21:10:33	05/11/2021	53.681667	6.333013	720114.610	5953392.630
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211003.jpg	183	21:10:44	05/11/2021	53.681707	6.333036	720115.870	5953397.140
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211011.jpg	184	21:10:52	05/11/2021	53.681717	6.333055	720117.070	5953398.280
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211028.jpg	185	21:11:09	05/11/2021	53.681731	6.333071	720118.060	5953399.940
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211049.jpg	186	21:11:30	05/11/2021	53.681788	6.333118	720120.890	5953406.450
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211102.jpg	187	21:11:43	05/11/2021	53.681810	6.333132	720121.700	5953408.920
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211115.jpg	188	21:11:56	05/11/2021	53.681840	6.333142	720122.230	5953412.220
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211129.jpg	189	21:12:10	05/11/2021	53.681873	6.333173	720124.060	5953416.080
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211146.jpg	190	21:12:28	05/11/2021	53.681917	6.333209	720126.250	5953420.990
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211219.jpg	191	21:13:01	05/11/2021	53.681987	6.333296	720131.600	5953429.071
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211223.jpg	192	21:13:05	05/11/2021	53.681988	6.333306	720132.280	5953429.210
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211231.jpg	193	21:13:13	05/11/2021	53.682003	6.333318	720132.940	5953430.930
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211253.jpg	194	21:13:35	05/11/2021	53.682073	6.333359	720135.320	5953438.799
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211310.jpg	195	21:13:50	05/11/2021	53.682101	6.333385	720136.850	5953442.050
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211326.jpg	196	21:14:07	05/11/2021	53.682116	6.333402	720137.940	5953443.780
N04A - N05A Pipe Route	ENV_22	MARDUT1021_ENV_22_2021_11_05_211356.jpg	197	21:14:38	05/11/2021	53.682191	6.333484	720142.920	5953452.391
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222232.jpg	222	22:23:13	05/11/2021	53.688594	6.324638	719525.600	5954137.030
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222256.jpg	223	22:23:37	05/11/2021	53.688593	6.324573	719521.360	5954136.660
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222316.jpg	224	22:23:57	05/11/2021	53.688597	6.324532	719518.590	5954137.010
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222337.jpg	225	22:24:18	05/11/2021	53.688610	6.324459	719513.700	5954138.230
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222354.jpg	226	22:24:35	05/11/2021	53.688612	6.324361	719507.220	5954138.130
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222408.jpg	227	22:24:49	05/11/2021	53.688613	6.324315	719504.220	5954138.170
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222429.jpg	228	22:25:11	05/11/2021	53.688615	6.324253	719500.070	5954138.210
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222446.jpg	229	22:25:27	05/11/2021	53.688618	6.324185	719495.600	5954138.300
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222517.jpg	230	22:25:58	05/11/2021	53.688628	6.324037	719485.750	5954138.960
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222534.jpg	231	22:26:17	05/11/2021	53.688626	6.323970	719481.340	5954138.560
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222556.jpg	232	22:26:37	05/11/2021	53.688628	6.323910	719477.370	5954138.520
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222616.jpg	233	22:26:57	05/11/2021	53.688630	6.323811	719470.825	5954138.465
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222630.jpg	234	22:27:11	05/11/2021	53.688630	6.323760	719467.510	5954138.310
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222700.jpg	235	22:27:42	05/11/2021	53.688636	6.323671	719461.570	5954138.690
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222716.jpg	236	22:27:57	05/11/2021	53.688637	6.323611	719457.630	5954138.620

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222729.jpg	237	22:28:10	05/11/2021	53.688637	6.323587	719455.990	5954138.580
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222752.jpg	238	22:28:34	05/11/2021	53.688661	6.323451	719446.940	5954140.820
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222820.jpg	239	22:29:01	05/11/2021	53.688668	6.323380	719442.180	5954141.320
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222838.jpg	240	22:29:20	05/11/2021	53.688673	6.323291	719436.310	5954141.650
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222903.jpg	241	22:29:45	05/11/2021	53.688685	6.323181	719428.950	5954142.650
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222915.jpg	242	22:29:56	05/11/2021	53.688697	6.323123	719425.080	5954143.780
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222924.jpg	243	22:30:06	05/11/2021	53.688692	6.323100	719423.560	5954143.189
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222951.jpg	244	22:30:33	05/11/2021	53.688704	6.323025	719418.610	5954144.221
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_222959.jpg	245	22:30:40	05/11/2021	53.688705	6.323000	719416.950	5954144.350
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_223015.jpg	246	22:30:56	05/11/2021	53.688711	6.322915	719411.280	5954144.730
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_223024.jpg	247	22:31:06	05/11/2021	53.688713	6.322885	719409.270	5954144.800
N04A - N05A Pipe Route	ENV_19	MARDUT1021_ENV_19_2021_11_05_223043.jpg	248	22:31:24	05/11/2021	53.688727	6.322805	719403.970	5954146.140
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230421.jpg	249	23:05:03	05/11/2021	53.692582	6.322215	719344.920	5954572.990
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230431.jpg	250	23:05:14	05/11/2021	53.692602	6.322232	719345.930	5954575.300
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230443.jpg	251	23:05:25	05/11/2021	53.692630	6.322258	719347.550	5954578.510
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230455.jpg	252	23:05:37	05/11/2021	53.692671	6.322265	719347.770	5954583.030
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230503.jpg	253	23:05:46	05/11/2021	53.692684	6.322283	719348.900	5954584.510
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230511.jpg	254	23:05:53	05/11/2021	53.692704	6.322292	719349.400	5954586.810
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230538.jpg	255	23:06:21	05/11/2021	53.692773	6.322336	719351.920	5954594.640
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230549.jpg	256	23:06:31	05/11/2021	53.692801	6.322355	719353.030	5954597.750
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230605.jpg	257	23:06:47	05/11/2021	53.692823	6.322377	719354.400	5954600.330
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230617.jpg	258	23:06:59	05/11/2021	53.692857	6.322392	719355.170	5954604.130
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230629.jpg	259	23:07:11	05/11/2021	53.692864	6.322396	719355.450	5954604.880
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230700.jpg	260	23:07:42	05/11/2021	53.692905	6.322423	719357.020	5954609.580
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230741.jpg	261	23:08:23	05/11/2021	53.692937	6.322451	719358.680	5954613.200
N04A - N05A Pipe Route	ENV_18	MARDUT1021_ENV_18_2021_11_05_230837.jpg	262	23:09:19	05/11/2021	53.693037	6.322514	719362.340	5954624.530
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235012.jpg	263	23:50:53	05/11/2021	53.693640	6.323041	719393.950	5954693.160
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235023.jpg	264	23:51:05	05/11/2021	53.693629	6.323029	719393.250	5954691.931
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235039.jpg	265	23:51:20	05/11/2021	53.693619	6.323019	719392.610	5954690.789
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235043.jpg	266	23:51:25	05/11/2021	53.693616	6.323005	719391.690	5954690.420
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235107.jpg	267	23:51:49	05/11/2021	53.693590	6.322981	719390.280	5954687.520
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235126.jpg	268	23:52:07	05/11/2021	53.693567	6.322968	719389.490	5954684.910
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235149.jpg	269	23:52:31	05/11/2021	53.693519	6.322950	719388.570	5954679.460
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235207.jpg	270	23:52:49	05/11/2021	53.693476	6.322931	719387.540	5954674.600
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235355.jpg	271	23:54:36	05/11/2021	53.693407	6.322887	719384.970	5954666.850
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235408.jpg	272	23:54:49	05/11/2021	53.693414	6.322877	719384.310	5954667.540
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235423.jpg	273	23:55:05	05/11/2021	53.693406	6.322872	719383.990	5954666.620
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235432.jpg	274	23:55:13	05/11/2021	53.693399	6.322870	719383.915	5954665.880
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235445.jpg	275	23:55:26	05/11/2021	53.693387	6.322855	719382.960	5954664.520
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235450.jpg	276	23:55:32	05/11/2021	53.693383	6.322843	719382.190	5954664.070
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235505.jpg	277	23:55:47	05/11/2021	53.693364	6.322829	719381.400	5954661.840
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235533.jpg	278	23:56:14	05/11/2021	53.693335	6.322797	719379.450	5954658.560
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235549.jpg	279	23:56:30	05/11/2021	53.693311	6.322779	719378.400	5954655.820
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235643.jpg	280	23:57:24	05/11/2021	53.693257	6.322745	719376.390	5954649.720

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235650.jpg	281	23:57:31	05/11/2021	53.693246	6.322737	719375.910	5954648.460
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235707.jpg	282	23:57:49	05/11/2021	53.693224	6.322716	719374.680	5954646.000
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235721.jpg	283	23:58:02	05/11/2021	53.693205	6.322707	719374.170	5954643.760
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235728.jpg	284	23:58:09	05/11/2021	53.693198	6.322698	719373.610	5954643.030
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235742.jpg	285	23:58:24	05/11/2021	53.693179	6.322679	719372.450	5954640.800
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235804.jpg	286	23:58:45	05/11/2021	53.693145	6.322663	719371.550	5954636.990
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235815.jpg	287	23:58:56	05/11/2021	53.693139	6.322645	719370.430	5954636.310
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235844.jpg	288	23:59:25	05/11/2021	53.693101	6.322623	719369.170	5954631.940
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235856.jpg	289	23:59:38	05/11/2021	53.693085	6.322620	719369.030	5954630.229
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235918.jpg	290	00:00:00	06/11/2021	53.693057	6.322604	719368.130	5954627.080
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235926.jpg	291	00:00:07	06/11/2021	53.693051	6.322604	719368.180	5954626.360
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235937.jpg	292	00:00:19	06/11/2021	53.693033	6.322592	719367.460	5954624.289
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235951.jpg	293	00:00:32	06/11/2021	53.693021	6.322579	719366.680	5954622.990
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_05_235959.jpg	294	00:00:41	06/11/2021	53.693007	6.322568	719366.050	5954621.350
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000039.jpg	295	00:01:20	06/11/2021	53.692971	6.322536	719364.080	5954617.300
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000103.jpg	296	00:01:44	06/11/2021	53.692945	6.322520	719363.150	5954614.350
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000431.jpg	297	00:05:13	06/11/2021	53.692899	6.322457	719359.240	5954608.950
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000507.jpg	298	00:05:48	06/11/2021	53.692875	6.322444	719358.560	5954606.300
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000531.jpg	299	00:06:12	06/11/2021	53.692846	6.322426	719357.480	5954603.030
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000542.jpg	300	00:06:24	06/11/2021	53.692835	6.322419	719357.100	5954601.780
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000604.jpg	301	00:06:45	06/11/2021	53.692798	6.322393	719355.570	5954597.580
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000618.jpg	302	00:06:59	06/11/2021	53.692773	6.322357	719353.300	5954594.640
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000625.jpg	303	00:07:07	06/11/2021	53.692753	6.322343	719352.470	5954592.450
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000635.jpg	304	00:07:16	06/11/2021	53.692739	6.322331	719351.780	5954590.820
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000642.jpg	305	00:07:23	06/11/2021	53.692728	6.322313	719350.630	5954589.500
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000708.jpg	306	00:07:50	06/11/2021	53.692684	6.322293	719349.590	5954584.550
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000741.jpg	307	00:08:22	06/11/2021	53.692637	6.322255	719347.270	5954579.260
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000747.jpg	308	00:08:28	06/11/2021	53.692632	6.322248	719346.890	5954578.650
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000755.jpg	309	00:08:36	06/11/2021	53.692625	6.322242	719346.530	5954577.830
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000818.jpg	310	00:09:00	06/11/2021	53.692587	6.322220	719345.230	5954573.620
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000825.jpg	311	00:09:06	06/11/2021	53.692582	6.322220	719345.250	5954572.990
N04A - N05A Pipe Route	ENV_18(2)	MARDUT1021_ENV_18(2)_2021_11_06_000852.jpg	312	00:09:33	06/11/2021	53.692547	6.322184	719343.050	5954569.050
N04A - N05A Pipe Route	ENV_17	MARDUT1021_ENV_17_2021_11_06_004526.jpg	313	00:46:07	06/11/2021	53.697906	6.321488	719269.270	5955162.800
N04A - N05A Pipe Route	ENV_17	MARDUT1021_ENV_17_2021_11_06_004557.jpg	314	00:46:38	06/11/2021	53.697850	6.321410	719264.420	5955156.350
N04A - N05A Pipe Route	ENV_17	MARDUT1021_ENV_17_2021_11_06_004609.jpg	315	00:46:51	06/11/2021	53.697827	6.321387	719262.980	5955153.700
N04A - N05A Pipe Route	ENV_17	MARDUT1021_ENV_17_2021_11_06_004631.jpg	316	00:47:12	06/11/2021	53.697788	6.321333	719259.670	5955149.170
N04A - N05A Pipe Route	ENV_17	MARDUT1021_ENV_17_2021_11_06_004642.jpg	317	00:47:23	06/11/2021	53.697777	6.321319	719258.780	5955147.980
N04A - N05A Pipe Route	ENV_17	MARDUT1021_ENV_17_2021_11_06_004658.jpg	318	00:47:38	06/11/2021	53.697755	6.321296	719257.390	5955145.400
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193107.jpg	378	19:31:10	08/11/2021	53.759062	6.299176	717480.730	5961895.020
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193137.jpg	379	19:31:39	08/11/2021	53.759073	6.299250	717485.600	5961896.401
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193156.jpg	380	19:31:58	08/11/2021	53.759088	6.299315	717489.780	5961898.270
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193214.jpg	381	19:32:16	08/11/2021	53.759097	6.299378	717493.870	5961899.500
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193237.jpg	382	19:32:40	08/11/2021	53.759112	6.299450	717498.530	5961901.380
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193253.jpg	383	19:32:56	08/11/2021	53.759120	6.299503	717502.030	5961902.490

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193321.jpg	384	19:33:24	08/11/2021	53.759143	6.299619	717509.510	5961905.400
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193338.jpg	385	19:33:41	08/11/2021	53.759167	6.299687	717513.870	5961908.230
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193401.jpg	386	19:34:03	08/11/2021	53.759183	6.299748	717517.820	5961910.200
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193422.jpg	387	19:34:25	08/11/2021	53.759194	6.299830	717523.150	5961911.670
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193439.jpg	388	19:34:41	08/11/2021	53.759209	6.299901	717527.740	5961913.560
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193508.jpg	389	19:35:10	08/11/2021	53.759232	6.299996	717533.940	5961916.380
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193537.jpg	390	19:35:40	08/11/2021	53.759241	6.300089	717540.020	5961917.669
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193604.jpg	391	19:36:06	08/11/2021	53.759252	6.300214	717548.160	5961919.350
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193637.jpg	392	19:36:39	08/11/2021	53.759275	6.300336	717556.090	5961922.280
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193658.jpg	393	19:37:01	08/11/2021	53.759290	6.300404	717560.510	5961924.100
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193723.jpg	394	19:37:25	08/11/2021	53.759311	6.300518	717567.920	5961926.830
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193736.jpg	395	19:37:39	08/11/2021	53.759321	6.300570	717571.250	5961928.030
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193756.jpg	396	19:37:58	08/11/2021	53.759332	6.300640	717575.830	5961929.460
N04A - N05A Pipe Route	ENV_03	MARDUT1021_ENV_03_2021_11_08_193820.jpg	397	19:38:22	08/11/2021	53.759357	6.300717	717580.780	5961932.550
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200021.jpg	398	20:00:24	08/11/2021	53.756100	6.298771	717469.390	5961564.350
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200100.jpg	399	20:01:04	08/11/2021	53.756163	6.298855	717474.610	5961571.670
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200116.jpg	400	20:01:20	08/11/2021	53.756183	6.298886	717476.540	5961573.890
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200137.jpg	401	20:01:40	08/11/2021	53.756223	6.298935	717479.550	5961578.500
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200204.jpg	402	20:02:07	08/11/2021	53.756265	6.298992	717483.120	5961583.330
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200228.jpg	403	20:02:32	08/11/2021	53.756308	6.299066	717487.740	5961588.360
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200250.jpg	404	20:02:53	08/11/2021	53.756339	6.299115	717490.820	5961591.990
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200303.jpg	405	20:03:06	08/11/2021	53.756356	6.299140	717492.340	5961593.940
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200322.jpg	406	20:03:25	08/11/2021	53.756398	6.299200	717496.125	5961598.830
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200349.jpg	407	20:03:52	08/11/2021	53.756464	6.299260	717499.720	5961606.280
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200420.jpg	408	20:04:24	08/11/2021	53.756524	6.299320	717503.340	5961613.180
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200443.jpg	409	20:04:46	08/11/2021	53.756566	6.299363	717505.995	5961617.970
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200505.jpg	410	20:05:09	08/11/2021	53.756589	6.299405	717508.650	5961620.690
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200519.jpg	411	20:05:22	08/11/2021	53.756609	6.299434	717510.440	5961623.000
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200552.jpg	412	20:05:55	08/11/2021	53.756678	6.299553	717517.940	5961631.050
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200622.jpg	413	20:06:25	08/11/2021	53.756728	6.299626	717522.490	5961636.800
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200654.jpg	414	20:06:58	08/11/2021	53.756779	6.299697	717526.920	5961642.750
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200719.jpg	415	20:07:22	08/11/2021	53.756837	6.299759	717530.660	5961649.390
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200739.jpg	416	20:07:42	08/11/2021	53.756861	6.299787	717532.420	5961652.130
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200758.jpg	417	20:08:01	08/11/2021	53.756897	6.299817	717534.170	5961656.200
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200809.jpg	418	20:08:12	08/11/2021	53.756921	6.299840	717535.590	5961658.960
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200824.jpg	419	20:08:28	08/11/2021	53.756956	6.299859	717536.660	5961662.860
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200840.jpg	420	20:08:43	08/11/2021	53.756991	6.299889	717538.480	5961666.841
N04A - N05A Pipe Route	ENV_04	MARDUT1021_ENV_04_2021_11_08_200856.jpg	421	20:08:59	08/11/2021	53.757018	6.299920	717540.320	5961669.970
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205146.jpg	422	20:51:49	08/11/2021	53.752691	6.300839	717623.320	5961191.640
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205203.jpg	423	20:52:05	08/11/2021	53.752716	6.300821	717621.950	5961194.290
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205227.jpg	424	20:52:30	08/11/2021	53.752746	6.300783	717619.300	5961197.520
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205301.jpg	425	20:53:03	08/11/2021	53.752803	6.300688	717612.760	5961203.580
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205320.jpg	426	20:53:22	08/11/2021	53.752830	6.300661	717610.830	5961206.520
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205336.jpg	427	20:53:38	08/11/2021	53.752858	6.300636	717609.030	5961209.500

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205402.jpg	428	20:54:04	08/11/2021	53.752907	6.300587	717605.550	5961214.860
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205426.jpg	429	20:54:29	08/11/2021	53.752952	6.300539	717602.170	5961219.700
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205450.jpg	430	20:54:52	08/11/2021	53.752988	6.300493	717598.930	5961223.600
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205508.jpg	431	20:55:11	08/11/2021	53.753026	6.300446	717595.680	5961227.639
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205528.jpg	432	20:55:30	08/11/2021	53.753069	6.300403	717592.630	5961232.320
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205544.jpg	433	20:55:46	08/11/2021	53.753091	6.300375	717590.630	5961234.630
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205602.jpg	434	20:56:05	08/11/2021	53.753133	6.300324	717587.080	5961239.190
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205616.jpg	435	20:56:18	08/11/2021	53.753154	6.300298	717585.240	5961241.420
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205637.jpg	436	20:56:39	08/11/2021	53.753193	6.300270	717583.170	5961245.660
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205656.jpg	437	20:56:58	08/11/2021	53.753230	6.300230	717580.400	5961249.620
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205723.jpg	438	20:57:25	08/11/2021	53.753286	6.300175	717576.440	5961255.780
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205746.jpg	439	20:57:49	08/11/2021	53.753336	6.300135	717573.535	5961261.190
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205756.jpg	440	20:57:58	08/11/2021	53.753348	6.300128	717573.020	5961262.510
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205821.jpg	441	20:58:24	08/11/2021	53.753405	6.300060	717568.260	5961268.560
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205848.jpg	442	20:58:50	08/11/2021	53.753458	6.300001	717564.070	5961274.276
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205915.jpg	443	20:59:17	08/11/2021	53.753529	6.299933	717559.255	5961282.035
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205943.jpg	444	20:59:46	08/11/2021	53.753580	6.299882	717555.650	5961287.480
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_205959.jpg	445	21:00:02	08/11/2021	53.753627	6.299837	717552.400	5961292.570
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_210025.jpg	446	21:00:27	08/11/2021	53.753675	6.299795	717549.410	5961297.830
N04A - N05A Pipe Route	ENV_05	MARDUT1021_ENV_05_2021_11_08_210043.jpg	447	21:00:46	08/11/2021	53.753712	6.299768	717547.460	5961301.860
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213357.jpg	448	21:34:00	08/11/2021	53.745452	6.303768	717853.820	5960395.540
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213422.jpg	449	21:34:26	08/11/2021	53.745489	6.303730	717851.120	5960399.520
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213507.jpg	450	21:35:10	08/11/2021	53.745555	6.303630	717844.160	5960406.550
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213540.jpg	451	21:35:44	08/11/2021	53.745609	6.303548	717838.510	5960412.315
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213556.jpg	452	21:36:00	08/11/2021	53.745629	6.303512	717836.020	5960414.450
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213626.jpg	453	21:36:30	08/11/2021	53.745677	6.303453	717831.900	5960419.670
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213656.jpg	454	21:37:00	08/11/2021	53.745730	6.303384	717827.090	5960425.270
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213701.jpg	455	21:37:04	08/11/2021	53.745736	6.303375	717826.420	5960425.960
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213726.jpg	456	21:37:29	08/11/2021	53.745785	6.303308	717821.750	5960431.160
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213753.jpg	457	21:37:56	08/11/2021	53.745833	6.303223	717815.920	5960436.230
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213823.jpg	458	21:38:26	08/11/2021	53.745887	6.303151	717810.870	5960442.000
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213851.jpg	459	21:38:55	08/11/2021	53.745939	6.303074	717805.550	5960447.630
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213921.jpg	460	21:39:24	08/11/2021	53.745996	6.302995	717800.030	5960453.680
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_213946.jpg	461	21:39:49	08/11/2021	53.746026	6.302934	717795.860	5960456.890
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214010.jpg	462	21:40:13	08/11/2021	53.746078	6.302874	717791.640	5960462.410
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214044.jpg	463	21:40:46	08/11/2021	53.746144	6.302818	717787.610	5960469.560
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214124.jpg	464	21:41:27	08/11/2021	53.746218	6.302726	717781.140	5960477.510
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214130.jpg	465	21:41:33	08/11/2021	53.746222	6.302713	717780.280	5960478.000
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214152.jpg	466	21:41:55	08/11/2021	53.746257	6.302652	717776.070	5960481.650
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214208.jpg	467	21:42:11	08/11/2021	53.746285	6.302612	717773.290	5960484.690
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214228.jpg	468	21:42:31	08/11/2021	53.746321	6.302563	717769.870	5960488.470
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214254.jpg	469	21:42:58	08/11/2021	53.746365	6.302494	717765.090	5960493.180
N04A - N05A Pipe Route	ENV_06	MARDUT1021_ENV_06_2021_11_08_214337.jpg	470	21:43:40	08/11/2021	53.746434	6.302404	717758.820	5960500.590
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_231854.jpg	471	23:18:59	08/11/2021	53.741079	6.305441	717986.730	5959914.370

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_231904.jpg	472	23:19:08	08/11/2021	53.741045	6.305442	717986.970	5959910.630
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_231925.jpg	473	23:19:29	08/11/2021	53.741085	6.305401	717984.055	5959914.901
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_231941.jpg	474	23:19:45	08/11/2021	53.741106	6.305377	717982.380	5959917.184
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_231949.jpg	475	23:19:53	08/11/2021	53.741109	6.305384	717982.820	5959917.625
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232017.jpg	476	23:20:21	08/11/2021	53.741098	6.305400	717983.930	5959916.379
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232039.jpg	477	23:20:42	08/11/2021	53.741234	6.305218	717971.210	5959930.970
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232104.jpg	478	23:21:08	08/11/2021	53.741237	6.305209	717970.630	5959931.314
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232135.jpg	479	23:21:40	08/11/2021	53.741290	6.305134	717965.400	5959936.945
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232149.jpg	480	23:21:53	08/11/2021	53.741310	6.305112	717963.865	5959939.135
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232215.jpg	481	23:22:20	08/11/2021	53.741363	6.305098	717962.630	5959944.905
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232236.jpg	482	23:22:40	08/11/2021	53.741398	6.305015	717957.030	5959948.587
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232308.jpg	483	23:23:12	08/11/2021	53.741477	6.304956	717952.675	5959957.220
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232340.jpg	484	23:23:44	08/11/2021	53.741471	6.304926	717950.752	5959956.425
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232400.jpg	485	23:24:05	08/11/2021	53.741526	6.304846	717945.235	5959962.315
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232437.jpg	486	23:24:41	08/11/2021	53.741628	6.304751	717938.410	5959973.375
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232459.jpg	487	23:25:03	08/11/2021	53.741642	6.304693	717934.490	5959974.765
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232529.jpg	488	23:25:34	08/11/2021	53.741711	6.304602	717928.190	5959982.100
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232549.jpg	489	23:25:53	08/11/2021	53.741727	6.304574	717926.205	5959983.835
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232621.jpg	490	23:26:26	08/11/2021	53.741785	6.304518	717922.220	5959990.119
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232655.jpg	491	23:26:58	08/11/2021	53.741856	6.304437	717916.540	5959997.769
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232707.jpg	492	23:27:11	08/11/2021	53.741860	6.304402	717914.175	5959998.115
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232719.jpg	493	23:27:23	08/11/2021	53.741889	6.304376	717912.310	5960001.209
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232752.jpg	494	23:27:57	08/11/2021	53.741934	6.304291	717906.520	5960005.980
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232841.jpg	495	23:28:46	08/11/2021	53.742039	6.304154	717896.930	5960017.250
N04A - N05A Pipe Route	ENV_07	MARDUT1021_ENV_07_2021_11_08_232857.jpg	496	23:29:01	08/11/2021	53.742083	6.304114	717894.040	5960021.934
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_000855.jpg	497	00:08:58	09/11/2021	53.736183	6.307540	718150.490	5959376.430
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_000902.jpg	498	00:09:05	09/11/2021	53.736182	6.307538	718150.370	5959376.280
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_000911.jpg	499	00:09:14	09/11/2021	53.736184	6.307516	718148.920	5959376.411
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_000920.jpg	500	00:09:22	09/11/2021	53.736183	6.307496	718147.590	5959376.320
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_000926.jpg	501	00:09:29	09/11/2021	53.736182	6.307476	718146.290	5959376.100
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_000943.jpg	502	00:09:45	09/11/2021	53.736180	6.307434	718143.530	5959375.770
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_000959.jpg	503	00:10:01	09/11/2021	53.736168	6.307387	718140.510	5959374.310
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001154.jpg	504	00:11:56	09/11/2021	53.736099	6.306918	718109.930	5959365.180
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001207.jpg	505	00:12:09	09/11/2021	53.736098	6.306881	718107.460	5959364.900
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001225.jpg	506	00:12:28	09/11/2021	53.736086	6.306812	718102.990	5959363.354
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001247.jpg	507	00:12:49	09/11/2021	53.736077	6.306755	718099.300	5959362.190
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001321.jpg	508	00:13:24	09/11/2021	53.736052	6.306606	718089.600	5959358.999
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001343.jpg	509	00:13:45	09/11/2021	53.736044	6.306524	718084.210	5959357.770
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001400.jpg	510	00:14:02	09/11/2021	53.736035	6.306485	718081.710	5959356.681
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001533.jpg	511	00:15:35	09/11/2021	53.735987	6.306110	718057.220	5959350.200
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001552.jpg	512	00:15:54	09/11/2021	53.735979	6.306023	718051.540	5959349.090
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001622.jpg	513	00:16:24	09/11/2021	53.735958	6.305897	718043.310	5959346.320
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001704.jpg	514	00:17:06	09/11/2021	53.735937	6.305720	718031.800	5959343.460
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001712.jpg	515	00:17:14	09/11/2021	53.735931	6.305713	718031.340	5959342.730

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001722.jpg	516	00:17:24	09/11/2021	53.735927	6.305678	718029.060	5959342.190
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001736.jpg	517	00:17:38	09/11/2021	53.735922	6.305634	718026.200	5959341.550
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001756.jpg	518	00:17:58	09/11/2021	53.735916	6.305603	718024.140	5959340.810
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001819.jpg	519	00:18:22	09/11/2021	53.735896	6.305451	718014.230	5959338.070
N04A - N05A Pipe Route	ENV_08	MARDUT1021_ENV_08_2021_11_09_001842.jpg	520	00:18:44	09/11/2021	53.735886	6.305351	718007.690	5959336.650
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004107.jpg	521	00:41:12	09/11/2021	53.731730	6.308619	718244.730	5958884.570
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004131.jpg	522	00:41:36	09/11/2021	53.731745	6.308588	718242.600	5958886.070
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004152.jpg	523	00:41:57	09/11/2021	53.731762	6.308503	718236.920	5958887.710
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004226.jpg	524	00:42:31	09/11/2021	53.731777	6.308373	718228.250	5958889.010
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004233.jpg	525	00:42:38	09/11/2021	53.731776	6.308380	718228.750	5958888.871
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004308.jpg	526	00:43:14	09/11/2021	53.731793	6.308249	718219.980	5958890.420
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004332.jpg	527	00:43:37	09/11/2021	53.731814	6.308161	718214.090	5958892.450
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004405.jpg	528	00:44:11	09/11/2021	53.731834	6.308033	718205.540	5958894.279
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004422.jpg	529	00:44:27	09/11/2021	53.731841	6.307978	718201.850	5958894.940
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004438.jpg	530	00:44:43	09/11/2021	53.731848	6.307903	718196.880	5958895.449
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004456.jpg	531	00:45:02	09/11/2021	53.731854	6.307829	718192.010	5958895.890
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004516.jpg	532	00:45:21	09/11/2021	53.731872	6.307764	718187.630	5958897.670
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004522.jpg	533	00:45:27	09/11/2021	53.731871	6.307753	718186.870	5958897.499
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004539.jpg	534	00:45:45	09/11/2021	53.731881	6.307684	718182.290	5958898.450
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004559.jpg	535	00:46:05	09/11/2021	53.731899	6.307590	718175.990	5958900.210
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004632.jpg	536	00:46:37	09/11/2021	53.731913	6.307473	718168.220	5958901.350
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004645.jpg	537	00:46:50	09/11/2021	53.731909	6.307426	718165.120	5958900.730
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004709.jpg	538	00:47:14	09/11/2021	53.731925	6.307323	718158.260	5958902.250
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004759.jpg	539	00:48:05	09/11/2021	53.731957	6.307144	718146.310	5958905.250
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004822.jpg	540	00:48:27	09/11/2021	53.731969	6.307054	718140.310	5958906.310
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004905.jpg	541	00:49:10	09/11/2021	53.732002	6.306856	718127.050	5958909.370
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_004934.jpg	542	00:49:39	09/11/2021	53.732020	6.306784	718122.220	5958911.170
N04A - N05A Pipe Route	ENV_09	MARDUT1021_ENV_09_2021_11_09_005009.jpg	543	00:50:15	09/11/2021	53.732043	6.306664	718114.160	5958913.330
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011308.jpg	544	01:13:11	09/11/2021	53.727376	6.310703	718404.740	5958406.730
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011343.jpg	545	01:13:46	09/11/2021	53.727355	6.310657	718401.800	5958404.240
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011732.jpg	546	01:17:35	09/11/2021	53.727138	6.310235	718375.100	5958378.880
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011807.jpg	547	01:18:11	09/11/2021	53.727139	6.310241	718375.470	5958378.960
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011840.jpg	548	01:18:43	09/11/2021	53.727133	6.310208	718373.360	5958378.160
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011906.jpg	549	01:19:09	09/11/2021	53.727087	6.310102	718366.570	5958372.770
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011916.jpg	550	01:19:19	09/11/2021	53.727089	6.310089	718365.710	5958372.930
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_011942.jpg	551	01:19:46	09/11/2021	53.727050	6.309991	718359.430	5958368.300
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012025.jpg	552	01:20:28	09/11/2021	53.727005	6.309862	718351.210	5958362.900
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012027.jpg	553	01:20:31	09/11/2021	53.726997	6.309862	718351.210	5958362.010
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012055.jpg	554	01:20:59	09/11/2021	53.726953	6.309757	718344.510	5958356.840
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012143.jpg	555	01:21:46	09/11/2021	53.726907	6.309621	718335.800	5958351.290
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012249.jpg	556	01:22:53	09/11/2021	53.726817	6.309397	718321.490	5958340.520
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012255.jpg	557	01:22:59	09/11/2021	53.726814	6.309398	718321.600	5958340.280
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012333.jpg	558	01:23:36	09/11/2021	53.726773	6.309293	718314.840	5958335.330
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012409.jpg	559	01:24:12	09/11/2021	53.726720	6.309163	718306.550	5958329.030

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012426.jpg	560	01:24:29	09/11/2021	53.726700	6.309119	718303.750	5958326.719
N04A - N05A Pipe Route	ENV_10	MARDUT1021_ENV_10_2021_11_09_012429.jpg	561	01:24:31	09/11/2021	53.726698	6.309117	718303.620	5958326.440
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014303.jpg	562	01:43:04	09/11/2021	53.724010	6.312200	718520.890	5958037.040
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014348.jpg	563	01:43:49	09/11/2021	53.723988	6.312038	718510.340	5958034.130
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014420.jpg	564	01:44:21	09/11/2021	53.723968	6.311954	718504.880	5958031.660
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014432.jpg	565	01:44:34	09/11/2021	53.723959	6.311873	718499.630	5958030.390
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014500.jpg	566	01:45:01	09/11/2021	53.723952	6.311779	718493.430	5958029.309
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014513.jpg	567	01:45:14	09/11/2021	53.723951	6.311776	718493.230	5958029.180
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014528.jpg	568	01:45:30	09/11/2021	53.723939	6.311692	718487.800	5958027.600
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014601.jpg	569	01:46:02	09/11/2021	53.723904	6.311557	718479.050	5958023.250
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014618.jpg	570	01:46:19	09/11/2021	53.723903	6.311554	718478.830	5958023.120
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014636.jpg	571	01:46:37	09/11/2021	53.723883	6.311515	718476.410	5958020.830
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014652.jpg	572	01:46:53	09/11/2021	53.723871	6.311434	718471.130	5958019.190
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014714.jpg	573	01:47:15	09/11/2021	53.723845	6.311311	718463.110	5958016.001
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014744.jpg	574	01:47:46	09/11/2021	53.723829	6.311208	718456.400	5958013.910
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014807.jpg	575	01:48:08	09/11/2021	53.723821	6.311124	718450.900	5958012.710
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014812.jpg	576	01:48:14	09/11/2021	53.723821	6.311127	718451.090	5958012.750
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014909.jpg	577	01:49:10	09/11/2021	53.723777	6.310867	718434.220	5958007.060
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_014941.jpg	578	01:49:42	09/11/2021	53.723758	6.310757	718427.060	5958004.530
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_015012.jpg	579	01:50:13	09/11/2021	53.723732	6.310628	718418.690	5958001.280
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_015041.jpg	580	01:50:42	09/11/2021	53.723719	6.310551	718413.630	5957999.591
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_015109.jpg	581	01:51:10	09/11/2021	53.723700	6.310441	718406.490	5957997.170
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_015132.jpg	582	01:51:34	09/11/2021	53.723687	6.310341	718399.975	5957995.424
N04A - N05A Pipe Route	ENV_11	MARDUT1021_ENV_11_2021_11_09_015202.jpg	583	01:52:03	09/11/2021	53.723674	6.310225	718392.420	5957993.570
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022147.jpg	584	02:21:50	09/11/2021	53.719392	6.311388	718491.320	5957521.020
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022214.jpg	585	02:22:16	09/11/2021	53.719388	6.311417	718493.240	5957520.680
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022240.jpg	586	02:22:42	09/11/2021	53.719411	6.311477	718497.060	5957523.440
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022336.jpg	587	02:23:38	09/11/2021	53.719444	6.311714	718512.540	5957527.790
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022356.jpg	588	02:23:58	09/11/2021	53.719450	6.311774	718516.440	5957528.670
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022409.jpg	589	02:24:12	09/11/2021	53.719460	6.311826	718519.840	5957529.870
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022445.jpg	590	02:24:48	09/11/2021	53.719475	6.311952	718528.050	5957531.980
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022503.jpg	591	02:25:05	09/11/2021	53.719479	6.311995	718530.870	5957532.530
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022529.jpg	592	02:25:31	09/11/2021	53.719492	6.312056	718534.880	5957534.170
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022553.jpg	593	02:25:56	09/11/2021	53.719505	6.312169	718542.230	5957536.010
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022620.jpg	594	02:26:22	09/11/2021	53.719524	6.312279	718549.400	5957538.370
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022644.jpg	595	02:26:47	09/11/2021	53.719537	6.312342	718553.450	5957540.090
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022709.jpg	596	02:27:12	09/11/2021	53.719545	6.312431	718559.290	5957541.250
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022731.jpg	597	02:27:34	09/11/2021	53.719555	6.312505	718564.150	5957542.570
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022810.jpg	598	02:28:12	09/11/2021	53.719573	6.312649	718573.560	5957545.030
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_022855.jpg	599	02:28:57	09/11/2021	53.719593	6.312811	718584.130	5957547.760
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023104.jpg	600	02:31:07	09/11/2021	53.719618	6.313099	718602.990	5957551.360
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023128.jpg	601	02:31:31	09/11/2021	53.719618	6.313107	718603.510	5957551.400
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023152.jpg	602	02:31:54	09/11/2021	53.719613	6.313113	718603.970	5957550.900
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023223.jpg	603	02:32:26	09/11/2021	53.719620	6.313140	718605.700	5957551.730

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023240.jpg	604	02:32:42	09/11/2021	53.719623	6.313159	718606.920	5957552.130
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023257.jpg	605	02:32:59	09/11/2021	53.719635	6.313218	718610.720	5957553.660
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023315.jpg	606	02:33:18	09/11/2021	53.719640	6.313287	718615.250	5957554.440
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023332.jpg	607	02:33:34	09/11/2021	53.719643	6.313322	718617.560	5957554.850
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023353.jpg	608	02:33:55	09/11/2021	53.719649	6.313400	718622.700	5957555.750
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023412.jpg	609	02:34:15	09/11/2021	53.719667	6.313442	718625.380	5957557.900
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023437.jpg	610	02:34:40	09/11/2021	53.719679	6.313504	718629.400	5957559.400
N04A - N05A Pipe Route	ENV_12	MARDUT1021_ENV_12_2021_11_09_023512.jpg	611	02:35:14	09/11/2021	53.719687	6.313595	718635.360	5957560.610
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025623.jpg	612	02:56:26	09/11/2021	53.715449	6.313565	718655.380	5957089.180
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025651.jpg	613	02:56:53	09/11/2021	53.715423	6.313646	718660.860	5957086.560
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025710.jpg	614	02:57:12	09/11/2021	53.715419	6.313686	718663.480	5957086.261
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025740.jpg	615	02:57:43	09/11/2021	53.715413	6.313755	718668.060	5957085.790
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025805.jpg	616	02:58:07	09/11/2021	53.715385	6.313843	718674.050	5957082.920
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025850.jpg	617	02:58:52	09/11/2021	53.715353	6.314034	718686.810	5957080.010
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025909.jpg	618	02:59:11	09/11/2021	53.715344	6.314090	718690.550	5957079.160
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025927.jpg	619	02:59:29	09/11/2021	53.715335	6.314141	718693.930	5957078.320
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_025953.jpg	620	02:59:55	09/11/2021	53.715325	6.314230	718699.870	5957077.510
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030016.jpg	621	03:00:19	09/11/2021	53.715311	6.314312	718705.330	5957076.200
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030050.jpg	622	03:00:52	09/11/2021	53.715296	6.314385	718710.230	5957074.740
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030128.jpg	623	03:01:30	09/11/2021	53.715269	6.314538	718720.470	5957072.249
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030202.jpg	624	03:02:05	09/11/2021	53.715247	6.314678	718729.800	5957070.220
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030243.jpg	625	03:02:45	09/11/2021	53.715221	6.314837	718740.430	5957067.741
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030304.jpg	626	03:03:06	09/11/2021	53.715206	6.314897	718744.470	5957066.350
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030325.jpg	627	03:03:27	09/11/2021	53.715189	6.314954	718748.350	5957064.570
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030357.jpg	628	03:03:59	09/11/2021	53.715188	6.315064	718755.580	5957064.820
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030424.jpg	629	03:04:27	09/11/2021	53.715170	6.315149	718761.320	5957063.100
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030450.jpg	630	03:04:53	09/11/2021	53.715149	6.315246	718767.790	5957061.040
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030507.jpg	631	03:05:10	09/11/2021	53.715139	6.315313	718772.250	5957060.140
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030527.jpg	632	03:05:29	09/11/2021	53.715127	6.315383	718776.950	5957058.970
N04A - N05A Pipe Route	ENV_13	MARDUT1021_ENV_13_2021_11_09_030552.jpg	633	03:05:54	09/11/2021	53.715122	6.315447	718781.200	5957058.630
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033104.jpg	634	03:31:07	09/11/2021	53.710998	6.314586	718745.830	5956597.351
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033120.jpg	635	03:31:23	09/11/2021	53.711002	6.314632	718748.860	5956597.950
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033135.jpg	636	03:31:39	09/11/2021	53.711003	6.314649	718749.980	5956598.169
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033148.jpg	637	03:31:51	09/11/2021	53.711004	6.314693	718752.850	5956598.370
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033201.jpg	638	03:32:04	09/11/2021	53.711008	6.314722	718754.760	5956598.960
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033228.jpg	639	03:32:31	09/11/2021	53.711023	6.314826	718761.500	5956600.970
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033244.jpg	640	03:32:47	09/11/2021	53.711034	6.314863	718763.920	5956602.241
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033310.jpg	641	03:33:13	09/11/2021	53.711051	6.314953	718769.740	5956604.450
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033344.jpg	642	03:33:47	09/11/2021	53.711064	6.315052	718776.200	5956606.169
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033402.jpg	643	03:34:06	09/11/2021	53.711069	6.315110	718780.050	5956606.920
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033426.jpg	644	03:34:30	09/11/2021	53.711078	6.315167	718783.770	5956608.090
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033452.jpg	645	03:34:55	09/11/2021	53.711093	6.315282	718791.230	5956610.090
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033535.jpg	646	03:35:38	09/11/2021	53.711110	6.315453	718802.440	5956612.510
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033605.jpg	647	03:36:09	09/11/2021	53.711128	6.315561	718809.470	5956614.810

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033643.jpg	648	03:36:46	09/11/2021	53.711149	6.315711	718819.270	5956617.606
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033714.jpg	649	03:37:17	09/11/2021	53.711158	6.315806	718825.460	5956618.965
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033737.jpg	650	03:37:40	09/11/2021	53.711169	6.315891	718831.040	5956620.391
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033807.jpg	651	03:38:10	09/11/2021	53.711184	6.316006	718838.525	5956622.414
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033836.jpg	652	03:38:40	09/11/2021	53.711197	6.316103	718844.840	5956624.200
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033905.jpg	653	03:39:09	09/11/2021	53.711211	6.316206	718851.560	5956626.110
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_033935.jpg	654	03:39:39	09/11/2021	53.711228	6.316251	718854.450	5956628.100
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_034012.jpg	655	03:40:15	09/11/2021	53.711242	6.316429	718866.160	5956630.190
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_034041.jpg	656	03:40:44	09/11/2021	53.711257	6.316552	718874.210	5956632.230
N04A - N05A Pipe Route	ENV_14	MARDUT1021_ENV_14_2021_11_09_034058.jpg	657	03:41:01	09/11/2021	53.711268	6.316612	718878.050	5956633.660
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053657.jpg	658	05:36:59	09/11/2021	53.706924	6.316670	718904.477	5956150.817
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053734.jpg	659	05:37:35	09/11/2021	53.706911	6.316699	718906.470	5956149.471
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053757.jpg	660	05:37:58	09/11/2021	53.706880	6.316742	718909.461	5956146.080
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053835.jpg	661	05:38:36	09/11/2021	53.706826	6.316842	718916.359	5956140.451
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053900.jpg	662	05:39:01	09/11/2021	53.706807	6.316904	718920.540	5956138.517
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053935.jpg	663	05:39:36	09/11/2021	53.706786	6.317004	718927.256	5956136.503
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053941.jpg	664	05:39:43	09/11/2021	53.706778	6.317024	718928.560	5956135.607
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_053958.jpg	665	05:40:00	09/11/2021	53.706753	6.317060	718931.107	5956132.964
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054016.jpg	666	05:40:17	09/11/2021	53.706731	6.317106	718934.242	5956130.651
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054114.jpg	667	05:41:15	09/11/2021	53.706639	6.317276	718945.967	5956120.950
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054141.jpg	668	05:41:44	09/11/2021	53.706596	6.317366	718952.070	5956116.470
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054212.jpg	669	05:42:14	09/11/2021	53.706550	6.317454	718958.113	5956111.623
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054250.jpg	670	05:42:51	09/11/2021	53.706501	6.317549	718964.680	5956106.461
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054327.jpg	671	05:43:28	09/11/2021	53.706452	6.317647	718971.357	5956101.247
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054419.jpg	672	05:44:20	09/11/2021	53.706361	6.317797	718981.783	5956091.674
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054454.jpg	673	05:44:55	09/11/2021	53.706308	6.317890	718988.140	5956086.060
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054529.jpg	674	05:45:30	09/11/2021	53.706248	6.318001	718995.803	5956079.693
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054550.jpg	675	05:45:51	09/11/2021	53.706215	6.318061	718999.916	5956076.231
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054613.jpg	676	05:46:14	09/11/2021	53.706181	6.318135	719005.006	5956072.721
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054634.jpg	677	05:46:36	09/11/2021	53.706153	6.318183	719008.307	5956069.749
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054700.jpg	678	05:47:01	09/11/2021	53.706114	6.318245	719012.607	5956065.604
N04A - N05A Pipe Route	ENV_15	MARDUT1021_ENV_15_2021_11_09_054722.jpg	679	05:47:23	09/11/2021	53.706097	6.318289	719015.590	5956063.764
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_060842.jpg	680	06:08:46	09/11/2021	53.702226	6.318906	719076.430	5955635.240
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_060857.jpg	681	06:09:01	09/11/2021	53.702204	6.318939	719078.720	5955632.940
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_060921.jpg	682	06:09:24	09/11/2021	53.702162	6.319009	719083.560	5955628.489
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_060937.jpg	683	06:09:40	09/11/2021	53.702136	6.319057	719086.830	5955625.680
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_060954.jpg	684	06:09:57	09/11/2021	53.702114	6.319099	719089.750	5955623.340
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061012.jpg	685	06:10:15	09/11/2021	53.702092	6.319154	719093.480	5955621.061
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061039.jpg	686	06:10:43	09/11/2021	53.702053	6.319235	719099.060	5955616.991
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061103.jpg	687	06:11:06	09/11/2021	53.702023	6.319299	719103.400	5955613.860
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061147.jpg	688	06:11:50	09/11/2021	53.701966	6.319409	719110.990	5955607.910
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061224.jpg	689	06:12:27	09/11/2021	53.701912	6.319510	719117.880	5955602.210
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061245.jpg	690	06:12:48	09/11/2021	53.701881	6.319575	719122.360	5955598.890
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061308.jpg	691	06:13:11	09/11/2021	53.701837	6.319662	719128.330	5955594.320

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061342.jpg	692	06:13:45	09/11/2021	53.701793	6.319767	719135.480	5955589.770
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061407.jpg	693	06:14:10	09/11/2021	53.701760	6.319824	719139.410	5955586.290
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061430.jpg	694	06:14:33	09/11/2021	53.701727	6.319883	719143.460	5955582.710
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061508.jpg	695	06:15:11	09/11/2021	53.701672	6.319987	719150.660	5955576.959
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061546.jpg	696	06:15:49	09/11/2021	53.701617	6.320091	719157.810	5955571.120
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061613.jpg	697	06:16:17	09/11/2021	53.701577	6.320170	719163.210	5955567.000
N04A - N05A Pipe Route	ENV_16	MARDUT1021_ENV_16_2021_11_09_061640.jpg	698	06:16:43	09/11/2021	53.701533	6.320256	719169.130	5955562.370
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063426.jpg	699	06:34:26	09/11/2021	53.697893	6.321619	719277.971	5955161.747
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063456.jpg	700	06:34:56	09/11/2021	53.697891	6.321611	719277.480	5955161.476
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063536.jpg	701	06:35:36	09/11/2021	53.697851	6.321529	719272.237	5955156.764
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063609.jpg	702	06:36:09	09/11/2021	53.697794	6.321421	719265.432	5955150.191
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063627.jpg	703	06:36:27	09/11/2021	53.697776	6.321394	719263.748	5955148.036
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063705.jpg	704	06:37:05	09/11/2021	53.697717	6.321289	719257.115	5955141.211
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063726.jpg	705	06:37:26	09/11/2021	53.697681	6.321229	719253.366	5955137.019
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063729.jpg	706	06:37:30	09/11/2021	53.697674	6.321218	719252.688	5955136.186
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063809.jpg	707	06:38:10	09/11/2021	53.697607	6.321102	719245.334	5955128.411
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063843.jpg	708	06:38:44	09/11/2021	53.697552	6.321020	719240.257	5955121.954
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063906.jpg	709	06:39:06	09/11/2021	53.697521	6.320929	719234.396	5955118.272
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_063934.jpg	710	06:39:34	09/11/2021	53.697469	6.320868	719230.631	5955112.296
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_064016.jpg	711	06:40:16	09/11/2021	53.697407	6.320768	719224.370	5955105.078
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_064039.jpg	712	06:40:39	09/11/2021	53.697370	6.320710	719220.678	5955100.819
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_064119.jpg	713	06:41:19	09/11/2021	53.697307	6.320593	719213.300	5955093.462
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_064158.jpg	714	06:41:59	09/11/2021	53.697239	6.320476	719205.939	5955085.473
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_064223.jpg	715	06:42:26	09/11/2021	53.697197	6.320413	719201.990	5955080.660
N04A - N05A Pipe Route	ENV_17(2)	MARDUT1021_ENV_17(2)_2021_11_09_064250.jpg	716	06:42:51	09/11/2021	53.697159	6.320367	719199.167	5955076.245
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174342.jpg	70	17:44:23	05/11/2021	53.683908	6.359625	721859.700	5953724.631
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174350.jpg	71	17:44:30	05/11/2021	53.683908	6.359624	721859.620	5953724.630
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174437.jpg	72	17:45:17	05/11/2021	53.683951	6.359662	721861.900	5953729.460
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174500.jpg	73	17:45:41	05/11/2021	53.683968	6.359692	721863.790	5953731.530
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174535.jpg	74	17:46:16	05/11/2021	53.684048	6.359757	721867.630	5953740.550
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174600.jpg	75	17:46:40	05/11/2021	53.684073	6.359792	721869.810	5953743.470
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174634.jpg	76	17:47:14	05/11/2021	53.684115	6.359842	721872.900	5953748.330
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174658.jpg	77	17:47:38	05/11/2021	53.684159	6.359868	721874.360	5953753.290
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174720.jpg	78	17:48:00	05/11/2021	53.684193	6.359886	721875.430	5953757.050
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174742.jpg	79	17:48:22	05/11/2021	53.684246	6.359924	721877.655	5953763.125
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174748.jpg	80	17:48:29	05/11/2021	53.684269	6.359922	721877.360	5953765.610
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174806.jpg	81	17:48:46	05/11/2021	53.684289	6.359946	721878.890	5953767.930
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174818.jpg	82	17:48:58	05/11/2021	53.684326	6.359969	721880.210	5953772.110
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174832.jpg	83	17:49:12	05/11/2021	53.684356	6.359977	721880.550	5953775.460
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174846.jpg	84	17:49:26	05/11/2021	53.684388	6.359998	721881.760	5953779.110
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174901.jpg	85	17:49:42	05/11/2021	53.684422	6.360016	721882.790	5953782.920
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174917.jpg	86	17:49:57	05/11/2021	53.684454	6.360040	721884.170	5953786.650
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174922.jpg	87	17:50:02	05/11/2021	53.684466	6.360051	721884.840	5953788.030
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174945.jpg	88	17:50:25	05/11/2021	53.684538	6.360106	721888.100	5953796.160

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_174957.jpg	89	17:50:37	05/11/2021	53.684566	6.360133	721889.760	5953799.400
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175013.jpg	90	17:50:53	05/11/2021	53.684605	6.360180	721892.620	5953803.780
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175022.jpg	91	17:51:02	05/11/2021	53.684625	6.360203	721894.050	5953806.170
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175036.jpg	92	17:51:17	05/11/2021	53.684656	6.360233	721895.890	5953809.650
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175054.jpg	93	17:51:34	05/11/2021	53.684688	6.360264	721897.730	5953813.280
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175113.jpg	94	17:51:54	05/11/2021	53.684727	6.360310	721900.580	5953817.840
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175133.jpg	95	17:52:14	05/11/2021	53.684764	6.360347	721902.800	5953822.080
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175147.jpg	96	17:52:27	05/11/2021	53.684794	6.360372	721904.310	5953825.460
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175200.jpg	97	17:52:41	05/11/2021	53.684821	6.360395	721905.700	5953828.490
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175216.jpg	98	17:52:57	05/11/2021	53.684869	6.360444	721908.660	5953833.999
N05A Platform Area	ENV_26	MARDUT1021_ENV_26_2021_11_05_175229.jpg	99	17:53:09	05/11/2021	53.684893	6.360471	721910.310	5953836.750
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165000.jpg	38	16:50:42	05/11/2021	53.684438	6.363270	722097.500	5953794.920
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165024.jpg	39	16:51:07	05/11/2021	53.684470	6.363278	722097.880	5953798.500
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165035.jpg	40	16:51:18	05/11/2021	53.684484	6.363282	722098.070	5953800.060
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165055.jpg	41	16:51:37	05/11/2021	53.684504	6.363304	722099.425	5953802.421
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165109.jpg	42	16:51:52	05/11/2021	53.684519	6.363328	722100.910	5953804.079
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165117.jpg	43	16:52:00	05/11/2021	53.684537	6.363338	722101.460	5953806.125
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165139.jpg	44	16:52:21	05/11/2021	53.684576	6.363359	722102.665	5953810.520
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165143.jpg	45	16:52:25	05/11/2021	53.684581	6.363364	722102.985	5953811.075
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165200.jpg	46	16:52:42	05/11/2021	53.684613	6.363379	722103.785	5953814.740
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165210.jpg	47	16:52:52	05/11/2021	53.684630	6.363406	722105.445	5953816.670
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165225.jpg	48	16:53:08	05/11/2021	53.684664	6.363441	722107.605	5953820.545
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165232.jpg	49	16:53:14	05/11/2021	53.684681	6.363450	722108.105	5953822.535
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165242.jpg	50	16:53:24	05/11/2021	53.684699	6.363469	722109.295	5953824.574
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165259.jpg	51	16:53:41	05/11/2021	53.684727	6.363518	722112.320	5953827.841
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165311.jpg	52	16:53:54	05/11/2021	53.684742	6.363533	722113.280	5953829.554
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165328.jpg	53	16:54:10	05/11/2021	53.684764	6.363559	722114.880	5953832.035
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165346.jpg	54	16:54:28	05/11/2021	53.684794	6.363590	722116.760	5953835.540
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165407.jpg	55	16:54:49	05/11/2021	53.684830	6.363617	722118.335	5953839.589
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165417.jpg	56	16:54:59	05/11/2021	53.684856	6.363635	722119.420	5953842.499
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165435.jpg	57	16:55:17	05/11/2021	53.684835	6.363891	722136.390	5953841.000
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165452.jpg	58	16:55:34	05/11/2021	53.684919	6.363700	722123.348	5953849.765
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165509.jpg	59	16:55:51	05/11/2021	53.684944	6.363719	722124.453	5953852.572
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165533.jpg	60	16:56:15	05/11/2021	53.684993	6.363772	722127.735	5953858.155
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165614.jpg	61	16:56:56	05/11/2021	53.685080	6.363863	722133.240	5953868.120
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165626.jpg	62	16:57:08	05/11/2021	53.685094	6.363874	722133.940	5953869.805
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165643.jpg	63	16:57:26	05/11/2021	53.685140	6.363923	722136.940	5953874.980
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165659.jpg	64	16:57:41	05/11/2021	53.685189	6.363962	722139.250	5953880.634
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165715.jpg	65	16:57:57	05/11/2021	53.685219	6.363987	722140.715	5953884.045
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165746.jpg	66	16:58:28	05/11/2021	53.685295	6.364048	722144.360	5953892.700
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165758.jpg	67	16:58:40	05/11/2021	53.685324	6.364072	722145.805	5953895.965
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165818.jpg	68	16:59:00	05/11/2021	53.685362	6.364095	722147.110	5953900.205
N05A Platform Area	ENV_27	MARDUT1021_ENV_27_2021_11_05_165838.jpg	69	16:59:20	05/11/2021	53.685385	6.364125	722148.930	5953902.945
N05A - Riffgat OWF Cable Area	ENV_20	MARDUT1021_ENV_20_2021_11_11_160735.jpg	1189	16:07:58	11/11/2021	-	-	-	-

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	ENV_20	MARDUT1021_ENV_20_2021_11_11_160832.jpg	1190	16:08:55	11/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_150707.jpg	01	15:07:48	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_150928.jpg	02	15:10:09	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_151015.jpg	03	15:10:56	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_151018.jpg	04	15:10:59	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_151050.jpg	05	15:11:31	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_151107.jpg	06	15:11:48	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_151116.jpg	07	15:11:57	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	ENV_28	MARDUT1021_ENV_28_2021_11_05_151139.jpg	08	15:12:20	05/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	ENV_37	MARDUT1021_ENV_37_2021_11_10_001824.jpg	1159	00:18:27	10/11/2021	-	-	-	-
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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

Area	Station	Image File Name	Fix	Fix Time (UTC)	Date	Sampled Latitude	Sampled Longitude	Sampled Easting	Sampled Northing
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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 A.2: Drop down video logs

Area	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	Laser Separation (cm)	FOCI/OSPAR present (excluding reef)	Potential Annex I reef?	Camera Time Offset	Notes
N04A Platform Area	ENV_01	08/11/2021	16:48:46	00:10:25	16:59:11	2	33	MARDUT1021_ENV_01_2021_11_08_164843, MARDUT1021_ENV_01_2021_11_08_165845	23.5	SubC Imaging PLE System	High	10	N	N	00:00:03	Shelly sand with some ripples and sand mason worms leading to gravelly sand
N04A Platform Area	ENV_02	08/11/2021	15:42:40	00:09:31	15:52:11	1	26	MARDUT1021_ENV_02_2021_11_08_154237	25.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells moving to coarser sand shells and gravel.
N04A - N05A Pipe Route	ENV_03	08/11/2021	19:29:35	00:08:48	19:38:23	1	20	MARDUT1021_ENV_03_2021_11_08_192932	23.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Silty Sand with shell fragments
N04A - N05A Pipe Route	ENV_04	08/11/2021	19:59:40	00:09:19	20:08:59	1	24	MARDUT1021_ENV_04_2021_11_08_195937	24.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled silty sand. Sand mason worms. Poor visibility.
N04A - N05A Pipe Route	ENV_05	08/11/2021	20:50:59	00:09:46	21:00:45	1	26	MARDUT1021_ENV_05_2021_11_08_205057	22.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells.
N04A - N05A Pipe Route	ENV_06	08/11/2021	21:33:16	00:10:23	21:43:39	2	23	MARDUT1021_ENV_06_2021_11_08_213313, MARDUT1021_ENV_06_2021_11_08_214314	21.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells.
N04A - N05A Pipe Route	ENV_07	08/11/2021	23:18:31	00:10:36	23:29:07	2	26	MARDUT1021_ENV_07_2021_11_08_231828, MARDUT1021_ENV_07_2021_11_08_232829	21.0	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells
N04A - N05A Pipe Route	ENV_08	09/11/2021	00:08:32	00:10:15	00:18:47	2	24	MARDUT1021_ENV_08_2021_11_09_000829, MARDUT1021_ENV_08_2021_11_09_001839	21.3	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells
N04A - N05A Pipe Route	ENV_09	09/11/2021	00:40:45	00:09:37	00:50:22	1	23	MARDUT1021_ENV_09_2021_11_09_004042	21.3	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells
N04A - N05A Pipe Route	ENV_10	09/11/2021	01:12:44	00:11:58	01:24:42	2	18	MARDUT1021_ENV_10_2021_11_09_011241, MARDUT1021_ENV_10_2021_11_09_012243	22.1	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells, poor visibility
N04A - N05A Pipe Route	ENV_11	09/11/2021	01:42:52	00:09:38	01:52:30	1	22	MARDUT1021_ENV_11_2021_11_09_014249	23.1	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells
N04A - N05A Pipe Route	ENV_12	09/11/2021	02:21:31	00:13:45	02:35:16	2	28	MARDUT1021_ENV_12_2021_11_09_022128, MARDUT1021_ENV_12_2021_11_09_023129	23.3	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells
N04A - N05A Pipe Route	ENV_13	09/11/2021	02:56:00	00:10:12	03:06:12	2	22	MARDUT1021_ENV_13_2021_09_11_025557, MARDUT1021_ENV_13_2021_09_11_030559	24.2	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells
N04A - N05A Pipe Route	ENV_14	09/11/2021	03:30:46	00:10:23	03:41:09	2	24	MARDUT1021_ENV_14_2021_11_09_033043, MARDUT1021_ENV_14_2021_11_09_034045	23.7	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells, a few cobbles

Area	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	Laser Separation (cm)	FOCI/OSPAR present (excluding reef)	Potential Annex I reef?	Camera Time Offset	Notes
N04A - N05A Pipe Route	ENV_15	09/11/2021	05:36:45	00:10:42	05:47:27	2	22	MARDUT1021_ENV_15_2021_11_09_053642, MARDUT1021_ENV_15_2021_11_09_054643	23.5	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells
N04A - N05A Pipe Route	ENV_16	09/11/2021	06:08:15	00:08:38	06:16:53	1	19	MARDUT1021_ENV_16_2021_11_09_060812	24.9	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells. Sand mason worms and burrowing anemones.
N04A - N05A Pipe Route	ENV_17	06/11/2021	00:45:45	00:09:30	00:55:15	1	6	MARDUT1021_ENV_17_2021_11_06_004504	26.5	SubC Imaging PLE System	High	10	N	N	00:00:41	Line aborted as winch wire caught on spoiler.
N04A - N05A Pipe Route	ENV_17(2)	09/11/2021	06:34:14	00:09:04	06:43:18	1	18	MARDUT1021_ENV_17(2)_2021_09_11_063411	26.5	SubC Imaging PLE System	High	10	N	N	00:00:03	Rippled sand with shells. Sand mason worms and burrowing anemones.
N04A - N05A Pipe Route	ENV_18	05/11/2021	23:03:47	00:12:32	23:16:19	2	14	MARDUT1021_ENV_182021_11_05_230306, MARDUT1021_ENV_18_2021_11_05_231307	27.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Technical issue during transect, winch wire caught in spoiler. Stopped recording and changed direction of vessel once winch wire released. Rippled sand with shells. Sand mason worms and burrowing anemones. Sand eel shoal.
N04A - N05A Pipe Route	ENV_18(2)	05/11/2021	23:50:29	00:19:19	00:09:48	3	50	MARDUT1021_ENV_18(2)_2021_11_05_234948, MARDUT1021_ENV_18(2)_2021_11_05_235950	27.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells. Sand mason worms and burrowing anemones. Sand eel shoal.
N04A - N05A Pipe Route	ENV_19	05/11/2021	22:22:50	00:08:36	22:31:26	1	27	MARDUT1021_ENV_19_2021_11_05_222209	25.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells. Sand mason worms and burrowing anemones.
N04A - N05A Pipe Route	ENV_21	05/11/2021	21:39:50	00:09:11	21:49:01	2	24	MARDUT1021_ENV_21_2021_11_05_213909, MARDUT1021_ENV_21_2021_11_05_213932	25.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells. Occadsional cobbles, sand mason worms and anemones.
N04A - N05A Pipe Route	ENV_22	05/11/2021	21:05:15	00:09:27	21:14:42	1	30	MARDUT1021_ENV_22_2021_11_05_210434	22.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells, Occasional sand mason worms and burrowing anemones.

Area	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	Laser Separation (cm)	FOCI/OSPAR present (excluding reef)	Potential Annex I reef?	Camera Time Offset	Notes
N04A - N05A Pipe Route	ENV_23	05/11/2021	20:19:50	00:10:24	20:30:14	2	24	MARDUT1021_ENV_23_2021_11_05_201909, MARDUT1021_ENV_23_2021_11_05_202910	23.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells. Occasional sand mason worms and burrowing anemones.
N04A - N05A Pipe Route	ENV_24	05/11/2021	19:15:30	00:12:02	19:27:32	2	22	MARDUT1021_ENV_24_2021_11_05_191449, MARDUT1021_ENV_24_2021_11_05_192450	23.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells and burrowing anemones.
N04A - N05A Pipe Route	ENV_25	05/11/2021	18:31:05	00:12:33	18:43:38	2	22	MARDUT1021_ENV_25_2021_11_05_183024, MARDUT1021_ENV_25_2021_11_05_184025	24.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells, occasional cobbles, sand mason worms and burrowing anemones
N05A Platform Area	ENV_26	05/11/2021	17:43:49	00:09:23	17:53:12	1	30	MARDUT1021_ENV_26_2021_11_05_174308	25.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with sand mason worms and burrowing anemones
N05A Platform Area	ENV_27	05/11/2021	16:48:30	00:10:54	16:59:24	2	32	MARDUT1021_ENV_27_2021_11_05_164749, MARDUT1021_ENV_27_2021_11_05_165750	25.0	SubC Imaging PLE System	High	10	N	N	00:00:41	Rippled sand with shells. Sand mason worms and burrowing anemones.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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

Area	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	Laser Separation (cm)	FOCI/OSPAR present (excluding reef)	Potential Annex I reef?	Camera Time Offset	Notes
																plumose anemones.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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 anemones and sponges.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.

Area	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	Laser Separation (cm)	FOCI/OSPAR present (excluding reef)	Potential Annex I reef?	Camera Time Offset	Notes
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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.
N05A - Riffgat OWF Cable Area	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			
Area	Station	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
N04A Platform Area	ENV_01	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	22	01	08/11/2021	17:22:55	717269	5962912	717267	5962911	ED50	2.8	10	Sand (S)	Y	Y	Y	Polychaeta 2 buckets of MACA.
N04A Platform Area	ENV_01	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	02	08/11/2021	17:46:11	717269	5962912	717269	5962911	ED50	1.4	10	Sand (S)	N	Y	Y	Asteroidea
N04A Platform Area	ENV_02	02	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23	04	08/11/2021	18:32:03	717279	5962381	717280	5962382	ED50	1.2	10	Sandy Gravel (sG)	Y	Y	Y	*Lanice conchilega* Attempt 1 failed due to *L. conchilega* trapping in jaws. Sample retention <2l. Very shelly.
N04A Platform Area	ENV_02	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23	05	08/11/2021	18:45:20	717279	5962381	717280	5962384	ED50	2.9	8	Sandy Gravel (sG)	Y	Y	Y	Polychaetae Very shelly
N04A - N05A Pipe Route	ENV_25	02	PC/MACA	Dual Van Veen	Geo Ocean III	MM	24	07	09/11/2021	07:45:29	721450	5953467	721454	5953466	ED50	3.7	10	Muddy Sandy Gravel (msG)	Y	Y	Y	Attempt 1 failed due to shell in jaws, attemt 2 good sample
N04A - N05A Pipe Route	ENV_25	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	24	08	09/11/2021	08:17:53	721450	5953467	721452	5953468	ED50	2.2	10	Sandy Gravelly Mud (sgM)	Y	Y	Y	Actinopterygii
N04A - N05A Pipe Route	ENV_24	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	63	10/11/2021	19:00:53	721062	5953288	721060	5953288	ED50	1.9	7	Muddy Sand (mS)	Y	Y	Y	-
N04A - N05A Pipe Route	ENV_24	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	64	10/11/2021	19:11:45	721062	5953288	721060	5953288	ED50	2.4	8	Muddy Sand (mS)	Y	Y	Y	-
N04A - N05A Pipe Route	ENV_23	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	65	10/11/2021	19:37:03	720599	5953247	720599	5953245	ED50	1.3	8	Muddy Sand (mS)	Y	Y	Y	-
N04A - N05A Pipe Route	ENV_23	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	66	10/11/2021	19:50:33	720599	5953247	720599	5953246	ED50	1.3	8	Muddy Sand (mS)	Y	Y	Y	-
N04A - N05A Pipe Route	ENV_22	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	67	10/11/2021	20:18:07	720111	5953389	720110	5953389	ED50	0.3	8	Muddy Sand (mS)	Y	Y	Y	-
N04A - N05A Pipe Route	ENV_22	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	68	10/11/2021	20:31:53	720111	5953389	720110	5953391	ED50	2.6	6	Muddy Sand (mS)	Y	Y	Y	*Lanice conchilega*
N04A - N05A Pipe Route	ENV_21	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	25	69	10/11/2021	20:49:35	719901	5953827	719901	5953827	ED50	0.9	8	Gravelly Muddy Sand (gmS)	N	N	N	Shelly
N04A - N05A Pipe Route	ENV_21	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	25	70	10/11/2021	21:03:21	719901	5953827	719905	5953826	ED50	4.6	7	Sandy Mud (sM)	N	N	N	Shelly
N04A - N05A Pipe Route	ENV_19	02	PC/MACA	Dual Van Veen	Geo Ocean III	KB	25	72	10/11/2021	21:29:57	719479	5954140	719482	5954140	ED50	2.6	8	Muddy Sand (mS)	N	N	N	1st attempt gravel trapped in jaws.
N04A - N05A Pipe Route	ENV_19	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	25	73	10/11/2021	21:47:23	719479	5954140	719480	5954139	ED50	1.1	8	Muddy Sand (mS)	N	N	N	Shelly
N04A - N05A Pipe Route	ENV_18	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	74	10/11/2021	22:17:59	719372	5954641	719375	5954640	ED50	3.1	9	Sandy Mud (sM)	Y	Y	N	High density *Lanice conchilega*.
N04A - N05A Pipe Route	ENV_18	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	75	10/11/2021	22:29:57	719372	5954641	719376	5954640	ED50	4.0	9	Sandy Mud (sM)	Y	Y	Y	High density *Lanice conchilega*.
N04A - N05A Pipe Route	ENV_17	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	26	76	11/11/2021	23:44:33	719234	5955116	719238	5955119	ED50	4.8	6	Sandy Mud (sM)	Y	Y	Y	*Lanice conchilega*; Polychaeta
N04A - N05A Pipe Route	ENV_17	01	MACB	Dual Van Veen	Geo Ocean III	MM	26	77	11/11/2021	00:08:51	719234	5955116	719240	5955118	ED50	6.1	6	Sandy Mud (sM)	Y	Y	Y	*Lanice conchilega* One side of grab NS. Only MACB on first attempt
N04A - N05A Pipe Route	ENV_17	02	MACC	Dual Van Veen	Geo Ocean III	MM	26	78	11/11/2021	00:13:51	719234	5955116	719240	5955119	ED50	6.0	5	Sandy Mud (sM)	Y	N	Y	*Lanice conchilega* 1st attempt <5l, One side of grab NS. MACC on second attempt
N04A - N05A Pipe Route	ENV_16	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	26	79	11/11/2021	00:46:09	719122	5955600	719125	5955602	ED50	3.0	7	Gravelly Sand (gS)	Y	Y	Y	Pebbles
N04A - N05A Pipe Route	ENV_16	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	26	80	11/11/2021	01:16:33	719122	5955600	719124	5955603	ED50	2.8	6	Gravelly Sand (gS)	Y	Y	Y	Stones
N04A - N05A Pipe Route	ENV_15	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	24	81	11/11/2021	01:43:27	718971	5956101	718972	5956103	ED50	2.2	7	Gravelly Sand (gS)	Y	Y	Y	Frament shell

Station Details				Sampling Details				Positional Data									Sample Description	Photos			
Area	Station	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
N04A - N05A Pipe Route	ENV_15	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	24	82	11/11/2021	01:59:23	718971	5956101	718972	5956102	ED50	1.3	5	Gravelly Sand (gS)	Y	Y	Y	Decapoda; *Lanice conchilega* Stones
N04A - N05A Pipe Route	ENV_14	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	24	83	11/11/2021	02:29:49	718816	5956615	718816	5956616	ED50	1.2	6	Gravelly Sand (gS)	Y	Y	Y	*Lanice conchilega* Fragment shell
N04A - N05A Pipe Route	ENV_14	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	24	84	11/11/2021	02:52:15	718816	5956615	718816	5956617	ED50	1.3	8	Gravelly Sand (gS)	Y	Y	Y	*Lanice conchilega* Fragment shell
N04A - N05A Pipe Route	ENV_13	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	24	85	11/11/2021	03:26:57	718725	5957072	718725	5957071	ED50	0.6	8	Gravelly Sand (gS)	Y	Y	Y	*Lanice conchilega* Fragment shell
N04A - N05A Pipe Route	ENV_13	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	24	86	11/11/2021	03:44:41	718725	5957072	718727	5957074	ED50	2.7	8	Gravelly Sand (gS)	Y	Y	Y	*Lanice conchilega* Fragment shell
N04A - N05A Pipe Route	ENV_12	02	PC/MACA	Dual Van Veen	Geo Ocean III	MM	24	88	11/11/2021	04:54:19	718572	5957543	718570	5957543	ED50	1.7	8	Gravelly Sand (gS)	Y	Y	Y	*Lanice conchilega* 1st attempt *Lanice conchilega* in jaws.
N04A - N05A Pipe Route	ENV_12	01	MACB	Dual Van Veen	Geo Ocean III	MM	24	87	11/11/2021	04:49:13	718572	5957543	718571	5957543	ED50	0.9	8	Gravelly Sand (gS)	Y	Y	Y	High density *Lanice conchilega*. Used for MACB
N04A - N05A Pipe Route	ENV_12	01	MACC	Dual Van Veen	Geo Ocean III	MM	24	89	11/11/2021	04:54:19	718572	5957543	718569	5957541	ED50	3.4	10	Gravelly Sand (gS)	N	Y	Y	Decapoda and *h*igh density *Lanice conchilega*. Retained sample from first attempt (used for MAC C)
N04A - N05A Pipe Route	ENV_11	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	23	90	11/11/2021	05:49:55	718455	5958013	718454	5958012	ED50	1.4	10	Gravelly Sand (gS)	Y	Y	Y	Gravelly sand with fragments shells
N04A - N05A Pipe Route	ENV_11	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	23	91	11/11/2021	06:07:23	718455	5958013	718450	5958015	ED50	5.3	10	Gravelly Sand (gS)	Y	Y	Y	*Lanice conchilega* Gravelly sand with fragments shells and stones
N04A - N05A Pipe Route	ENV_03	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	25	92	11/11/2021	07:41:29	717495	5961899	717492	5961899	ED50	2.6	5	Sand (S)	Y	Y	Y	Fine sediment fragment shells.
N04A - N05A Pipe Route	ENV_03	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	25	93	11/11/2021	08:00:05	717495	5961899	717491	5961899	ED50	3.1	6	Sand (S)	Y	Y	Y	*Echinocardium cordatum* Fine sediment fragment shells
N04A - N05A Pipe Route	ENV_04	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	24	94	11/11/2021	08:25:01	717489	5961596	717488	5961594	ED50	2.0	5	Sand (S)	Y	Y	Y	*Cylista* sp.; Polychatae Fine sediment fragment shells
N04A - N05A Pipe Route	ENV_04	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	24	95	11/11/2021	08:34:01	717489	5961596	717487	5961594	ED50	2.2	6	Sand (S)	Y	Y	Y	*Lanice conchilega*; Polychaetae Fine sediment fragment shell
N04A - N05A Pipe Route	ENV_10	02	PC/MACA	Dual Van Veen	Geo Ocean III	KB	21	102	11/11/2021	19:27:15	718350	5958362	718348	5958362	ED50	2.5	9	Sand (S)	Y	Y	Y	*Lanice conchilega* 4 triggers at the surface when lowering into the water. 1st Attempt gravel caught in jaws. 2 buckets used. Photographed

Area	Station Details			Sampling Details					Positional Data									Sample Description	Photos			Notes
	Station	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	
																						incorrectly as attempt 1 . Shelly coarse sand.
N04A - N05A Pipe Route	ENV_10	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	21	103	11/11/2021	19:39:39	718350	5958362	718349	5958363	ED50	1.2	9	Sand (S)	Y	Y	Y	*Lanice conchilega* Shelly coarse sand
N04A - N05A Pipe Route	ENV_09	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	22	104	11/11/2021	20:03:13	718171	5958900	718169	5958900	ED50	2.1	9	Sand (S)	Y	Y	N	Shelly sand. 2 buckets used.
N04A - N05A Pipe Route	ENV_09	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23	105	11/11/2021	20:20:03	718171	5958900	718169	5958902	ED50	2.5	9	Sand (S)	Y	Y	Y	Shelly sand
N04A - N05A Pipe Route	ENV_08	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	106	11/11/2021	20:45:41	718086	5959358	718088	5959353	ED50	5.2	9	Sand (S)	Y	N	Y	Shelly sand. 2 buckets used.
N04A - N05A Pipe Route	ENV_08	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	22	107	11/11/2021	21:06:55	718086	5959358	718089	5959353	ED50	6.0	9	Sand (S)	Y	Y	Y	Shelly sand
N04A - N05A Pipe Route	ENV_07	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	21	108	11/11/2021	21:27:33	717938	5959968	717936	5959967	ED50	1.5	9	Sand (S)	Y	Y	Y	Shelly sand. 2 buckets used.
N04A - N05A Pipe Route	ENV_07	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	21	109	11/11/2021	21:40:31	717938	5959968	717938	5959962	ED50	6.0	9	Sand (S)	Y	Y	Y	Shelly sand. MAC B 2x buckets
N04A - N05A Pipe Route	ENV_06	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	22	110	11/11/2021	21:58:41	717804	5960447	717806	5960449	ED50	1.9	9	Sand (S)	Y	Y	Y	Shelly sand.
N04A - N05A Pipe Route	ENV_06	02	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	22	112	11/11/2021	22:23:39	717804	5960447	717807	5960448	ED50	2.5	9	Sand (S)	Y	Y	Y	Shelly sand. MAC B 2x buckets
N04A - N05A Pipe Route	ENV_05	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	23	113	11/11/2021	23:13:07	717582	5961248	717583	5961249	ED50	1.8	6	Gravelly Sand (gS)	N	N	N	shell fragments
N04A - N05A Pipe Route	ENV_05	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	24	114	11/11/2021	23:30:37	717582	5961248	717583	5961248	ED50	1.6	8	Muddy Gravelly Sand (mgS)	N	Y	Y	*Ammodytes* sp. Shell fragments. 2 buckets used for MACB
N05A Platform Area	ENV_26	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	25	09	09/11/2021	09:03:47	721881	5953778	721887	5953776	ED50	5.7	8	Sandy Gravelly Mud (sgM)	Y	Y	Y	*Lanice conchilega*, Polychaeta
N05A Platform Area	ENV_26	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	25	10	09/11/2021	09:31:43	721881	5953778	721888	5953776	ED50	6.5	8	Sandy Gravelly Mud (sgM)	Y	Y	Y	Caridea, *Lanice conchilega*, Pectinariidae, Spatangoida
N05A Platform Area	ENV_27	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	25	11	09/11/2021	10:20:29	722123	5953846	722127	5953845	ED50	4.5	8	Sandy Gravelly Mud (sgM)	Y	Y	Y	Polychaeta, Spatangoida
N05A Platform Area	ENV_27	02	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	25	13	09/11/2021	11:07:21	722123	5953846	722125	5953846	ED50	2.3	8	Muddy Gravelly Sand (mgS)	Y	Y	Y	1st attempt <2 l. Spatangoida.
N05A - Riffgat OWF Cable Area	ENV_28	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	14	09/11/2021	11:45:35	722694	5953622	722698	5953623	ED50	4.2	8	Muddy Gravelly Sand (mgS)	Y	Y	N	-
N05A - Riffgat OWF Cable Area	ENV_28	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	15	09/11/2021	12:01:57	722694	5953622	722695	5953622	ED50	1.6	8	Muddy Gravelly Sand (mgS)	Y	Y	Y	Polychaeta
N05A - Riffgat OWF Cable Area	ENV_37	04	PC/MACA	Dual Van Veen	Geo Ocean III	MM	22	19	10/11/2021	01:31:35	726717	5953412	726718	5953463	ED50	51.0	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*
N05A - Riffgat OWF Cable Area	ENV_37	03	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	22	23	10/11/2021	02:12:31	726717	5953412	726712	5953463	ED50	51.1	5	Gravelly Sand (gS)	Y	Y	Y	1st attempt failed due to stone in jaws, 2nd attempt failed due to mason worms in jaws.

Station Details				Sampling Details					Positional Data									Sample Description	Photos			
Area	Station	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
																						Lanice conchilega, Polychaeta.
N05A - Riffgat OWF Cable Area	ENV_36	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	23	24	10/11/2021	02:45:43	726362	5953211	726360	5953212	ED50	1.9	7	Sand (S)	Y	Y	Y	Sand fine sediment, mason worms
N05A - Riffgat OWF Cable Area	ENV_36	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	23	25	10/11/2021	03:12:07	726362	5953211	726359	5953213	ED50	3.4	7	Sand (S)	Y	Y	Y	Fine sand sediment shells, sand mason, crabs
N05A - Riffgat OWF Cable Area	ENV_44	03	PC/MACA	Dual Van Veen	Geo Ocean III	MM	22	28	10/11/2021	03:54:17	726134	5952885	726132	5952885	ED50	2.0	5	Sand (S)	Y	Y	Y	1st attempt <2 l. *Lanice conchilega*, Spatangoida
N05A - Riffgat OWF Cable Area	ENV_44	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	22	29	10/11/2021	05:02:19	726134	5952885	726122	5952885	ED50	12.3	5	Sandy Mud (sM)	Y	Y	Y	Fine sand, muddy. *Ophiura ophiura*, Polychaeta
N05A - Riffgat OWF Cable Area	ENV_43	02	PC/MACA	Dual Van Veen	Geo Ocean III	MM	22	31	10/11/2021	05:48:59	725775	5952715	725770	5952714	ED50	5.2	5	Sandy Mud (sM)	Y	Y	Y	1st attempt <2l, 2nd attempt good, fine sand & mud, *Lanice conchilega*, Spatangoida
N05A - Riffgat OWF Cable Area	ENV_43	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	22	32	10/11/2021	06:15:17	725775	5952715	725772	5952715	ED50	3.6	5	Sandy Mud (sM)	Y	Y	Y	Fine sand, mud, *Lanice conchilega*, *Ophiura ophiura*, Pectinariidae
N05A - Riffgat OWF Cable Area	ENV_35	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	23	33	10/11/2021	06:55:39	725808	5953207	725803	5953206	ED50	4.5	7	Sand (S)	Y	Y	Y	Fine sediment fragment shell, *Lanice conchilega*
N05A - Riffgat OWF Cable Area	ENV_35	01	MACB/MACC	Dual Van Veen	Geo Ocean III	MM	23	34	10/11/2021	07:19:25	725808	5953207	725806	5953206	ED50	2.5	6	Sandy Gravel (sG)	Y	Y	Y	Gravelly sand with sand mason worms, *Lanice conchilega*, Ophiuroidea
N05A - Riffgat OWF Cable Area	ENV_34	01	PC/MACA	Dual Van Veen	Geo Ocean III	MM	24	36	10/11/2021	07:58:27	725298	5953207	725297	5953208	ED50	1.5	5	Muddy Sand (mS)	Y	Y	Y	Fine muddy sand
N05A - Riffgat OWF Cable Area	ENV_34	01	MACB	Dual Van Veen	Geo Ocean III	MM	24	35	10/11/2021	07:51:49	725298	5953207	725298	5953206	ED50	1.6	5	Muddy Sand (mS)	N	Y	Y	Fine muddy sand
N05A - Riffgat OWF Cable Area	ENV_34	01	MACC	Dual Van Veen	Geo Ocean III	MM	24	37	10/11/2021	08:24:02	725298	5953207	725304	5953207	ED50	6.2	7	Muddy Sand (mS)	N	Y	Y	Fine muddy sand, *Lanice conchilega*, Polychaeta
N05A - Riffgat OWF Cable Area	ENV_42	02	PC	Dual Van Veen	Geo Ocean III	MM	22	39	10/11/2021	09:07:36	725410	5952700	725413	5952699	ED50	3.1	5	Sandy Mud (sM)	Y	Y	Y	1st attempt <5l, muddy sand, dark sediment, smelly
N05A - Riffgat OWF Cable Area	ENV_42	03	MACA	Dual Van Veen	Geo Ocean III	MM	22	40	10/11/2021	09:22:00	725410	5952700	725411	5952701	ED50	0.9	6	Sandy Mud (sM)	N	Y	Y	1st and 2nd attempt < 5l, muddy sand, dark sediment, smelly. *Cylista* sp., Lanice conchilega.
N05A - Riffgat OWF Cable Area	ENV_42	01	MACB	Dual Van Veen	Geo Ocean III	MM	22	41	10/11/2021	09:26:40	725410	5952700	725411	5952701	ED50	1.0	6	Sandy Mud (sM)	Y	Y	Y	Muddy sand, dark sediment, smelly. Bivalvia, *Lanice conchilega*, *Ophiura ophiura*, Polychaeta
N05A - Riffgat OWF Cable Area	ENV_42	01	MACC	Dual Van Veen	Geo Ocean III	MM	22	42	10/11/2021	09:39:28	725410	5952700	725414	5952650	ED50	50.0	8	Sandy Mud (sM)	Y	Y	Y	Station moved 50 m to the south. *Lanice conchilega*, Polychaeta

Station Details				Sampling Details					Positional Data									Sample Description	Photos			
Area	Station	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
N05A - Riffgat OWF Cable Area	ENV_41	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	43	10/11/2021	11:24:04	724865	5952851	724867	5952850	ED50	2.9	8	Muddy Sand (mS)	Y	Y	Y	Lanice conchilega
N05A - Riffgat OWF Cable Area	ENV_41	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	44	10/11/2021	11:32:02	724865	5952851	724867	5952850	ED50	2.6	8	Muddy Sand (mS)	Y	Y	Y	Black layering in sediment.
N05A - Riffgat OWF Cable Area	ENV_33	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	21	45	10/11/2021	12:02:36	724757	5953171	724760	5953173	ED50	3.2	8	Muddy Sand (mS)	Y	Y	Y	Shelly. *Lanice conchilega*, Ophiuroidea
N05A - Riffgat OWF Cable Area	ENV_33	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	21	46	10/11/2021	12:13:38	724757	5953171	724758	5953172	ED50	1.0	8	Muddy Sand (mS)	Y	Y	Y	Hig density sand mason worms. Shelly. *Lanice conchilega*, Ophiuroidea, Polychaeta.
N05A - Riffgat OWF Cable Area	ENV_32	03	PC/MACA	Dual Van Veen	Geo Ocean III	KB	22	49	10/11/2021	12:47:54	724234	5953077	724233	5953080	ED50	04	08	Sandy Mud (sM)	Y	Y	Y	Black colour to sediment and annoxic smell. *Lanice conchilega*.
N05A - Riffgat OWF Cable Area	ENV_32	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	22	50	10/11/2021	13:06:54	724234	5953077	724234	5953079	ED50	02	08	Sandy Mud (sM)	Y	Y	Y	Black colour to sediment and annoxic smell. *Cylista* sp., Polychaeta.
N05A - Riffgat OWF Cable Area	ENV_40	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23	51	10/11/2021	13:35:08	724291	5952706	724292	5952706	ED50	01	08	Sandy Mud (sM)	Y	Y	Y	Lanice conchilega, Polychaeta
N05A - Riffgat OWF Cable Area	ENV_40	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23	52	10/11/2021	13:48:48	724291	5952706	724289	5952705	ED50	01	08	Sandy Mud (sM)	Y	Y	Y	Clumps of clay/mud, *Lanice conchilega*, Polychaeta
N05A - Riffgat OWF Cable Area	ENV_30	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	53	10/11/2021	14:22:11	724151	5953716	724151	5953716	ED50	00	08	Muddy Sandy Gravel (msG)	Y	Y	Y	Shelly
N05A - Riffgat OWF Cable Area	ENV_30	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	54	10/11/2021	14:34:41	724151	5953716	724150	5953716	ED50	01	08	Muddy Gravelly Sand (mgS)	Y	Y	Y	Shelly
N05A - Riffgat OWF Cable Area	ENV_29	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	22	55	10/11/2021	15:10:39	723749	5953719	723747	5953720	ED50	03	08	Muddy Gravelly Sand (mgS)	Y	Y	Y	*Lanice conchilega*, Polychaeta
N05A - Riffgat OWF Cable Area	ENV_29	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	22	56	10/11/2021	15:21:11	723749	5953719	723749	5953721	ED50	02	08	Sandy Gravelly Mud (sgM)	Y	N	Y	-
N05A - Riffgat OWF Cable Area	ENV_31	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23	57	10/11/2021	16:05:49	723784	5953009	723783	5953011	ED50	02	06	Sandy Mud (sM)	Y	Y	Y	Polychaeta
N05A - Riffgat OWF Cable Area	ENV_31	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23	58	10/11/2021	17:03:31	723784	5953009	723783	5953010	ED50	02	07	Sandy Mud (sM)	Y	Y	Y	Polychaeta
N05A - Riffgat OWF Cable Area	ENV_38	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	23	59	10/11/2021	17:23:47	723270	5952703	723270	5952702	ED50	01	07	Sand (S)	Y	Y	Y	-
N05A - Riffgat OWF Cable Area	ENV_38	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	23	60	10/11/2021	17:40:01	723270	5952703	723269	5952702	ED50	02	07	Sand (S)	Y	Y	Y	-
N05A - Riffgat OWF Cable Area	ENV_39	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	61	10/11/2021	18:09:59	722979	5953224	722977	5953224	ED50	02	08	Muddy Sand (mS)	Y	Y	Y	*Lanice conchilega*
N05A - Riffgat OWF Cable Area	ENV_39	01	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	62	10/11/2021	18:21:55	722979	5953224	722978	5953224	ED50	00	05	Muddy Sand (mS)	Y	Y	Y	*Cylista* sp., *Lanice conchilega*, Spatangoida
N05A - Riffgat OWF Cable Area	ENV_20	01	PC/MACA	Dual Van Veen	Geo Ocean III	KB	24	96	11/11/2021	17:08:55	725295	5953419	725293	5953419	ED50	02	08	Gravelly Muddy Sand (gmS)	Y	Y	Y	-
N05A - Riffgat OWF Cable Area	ENV_20	04	MACB/MACC	Dual Van Veen	Geo Ocean III	KB	24	100	11/11/2021	17:41:23	725295	5953419	725334	5953450	ED50	50	08	Gravelly Muddy Sand (gmS)	Y	Y	Y	All 3 attempts gravel caught in jaws. Moved station 50 m.

Appendix B. Methodology

B.1 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.

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 TOC and 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).

B.2 Sample Analysis

Physico-chemical and faunal samples were analysed by the following laboratories:

- Sediment hydrocarbon, metals, TOM and TOC analyses were carried out by SOCOTEC, Burton-on Trent, Staffordshire, UK;
- Benthic macrofaunal identification and PSA was carried out by Ocean Ecology, Epney, Gloucester, UK.

SOCOTEC is a United Kingdom Accreditation Service accredited for TOC, PAH parent compounds and metals (Al, As, Ba, Cd, Cr, Cu, Ni, Pb, Sn, V, Zn). Ocean Ecology participates in the National Marine Biological Association Quality Control scheme (NMBAQC) for PSA and macrofaunal analysis.

B.3 Particle size analysis

PSA was conducted for each sediment sample, according to NMBAQC protocols as described in Mason (2016). Due to the mixed nature of the sediments, samples were analysed using a combination of wet and dry sieving, through sieves of Wentworth half phi intervals, and laser diffraction using an in-house Beckman Coulter LS13 320 particle sizing analyser.

B.4 Total Organic Cabron and Total Organic Matter

B.4.1 Total Organic Carbon

A portion of air-dried and ground sample was mixed with concentrated sulphurous acid. This was warmed to 40°C for an extended period of time. The resultant mixture was then heated to dryness at 100°C. The dried residue was analysed for carbon content using an Eltra induction furnace fitted with an NDIR cell. The total quantity of carbon liberated was calculated and reported as a percentage of the original mass of sample.

B.4.2 Total Organic Matter by Loss on Ignition

A portion of air-dried and ground sample was digested in sulphurous acid at a temperature of 40°C overnight. Following this, the remaining liquid was driven off at 100°C to leave a dry residue. This was then weighed into an ash crucible and placed in a muffle. The temperature was then raised to 450°C for 4.5 hrs. The crucible was then taken out and allowed to cool and then reweighed and the loss on ignition was then calculated.

B.5 Hydrocarbon Concentrations

B.5.1 Total Petroleum Hydrocarbons

Methanol and DCM were added to a portion of the as received sample and mixed on a magnetic stirring plate. The solvent extract was then water partitioned and concentrated to a low volume. A clean-up stage was employed to remove contaminants that may have interfered with the analysis. Analysis was carried out by GC/FID and quantified by comparison with a solution containing diesel hydrocarbons.

This method covers the determination of total petroleum hydrocarbons nC_{10}– nC_{37} and the individual n-Alkanes of hydrocarbons $nC_{10–nC37}$, pristane and phytane.

B.5.2 Polycyclic Aromatic Hydrocarbons

Methanol and DCM were added to a portion of the as received sample and mixed on a magnetic stirring plate. The solvent extract was then water partitioned and concentrated to a low volume. A double clean-up stage was employed to remove contaminants that may have interfered with the analysis. The extract was analysed by GC-MS and quantified by comparing the results against a calibration curve for each of the target analytes.

B.6 Metals

The air-dried and ground sediment sample was digested in a two stage process by microwave. The first stage digestion occurred with concentrated hydrofluoric acid, nitric acid and hydrogen peroxide

in a Teflon digestion vessel microwaved at 190 °C for approximately 20 minutes. For the second stage digestion, Boric acid was added to the digest and microwaved on a second program at 160 °C. The digest was made up to 100 ml in a Gradplex flask. The digest was then analysed directly by ICPOES and ICPMS with matrix matched standards.

B.7 Macrofaunal Analysis

Macrofaunal analysis was carried out on MFA and MFB sample replicates for each of the 44 stations. Macrofaunal samples were sieved in the field over a 500 µm mesh. Macrofaunal samples were then processed in laboratory in accordance with NMBAQC guidelines for processing marine microbenthic invertebrate samples (Worsford & Hall, 2017) and nomenclature was in accordance with Howson and Picton (1997).

The resulting macrofauna data set was rationalised according to the JAMP Agreement 2010-12, Technical Annex 2 (soft bottom macrozoobenthos) per OSPAR Commission (OSPAR, 2017) guidelines. Species falling into planktonic organisms such as copepods and mysids and meiofaunal taxa such as Nematoda, together with fish were excluded from the calculations of the community indices and multivariate analyses of community structure. Juveniles were recorded separately in the fauna dataset (Appendix H) and analyses were performed separately on both full and adult datasets when juveniles ranked within the top 10 most abundant species. Damaged species which unequivocally represented the presence of an entire organism was identified to the lowest taxonomic level and recorded and included with other counts of that species.

In order to make comparison between this survey's macrofauna results and those from the previous survey, the raw data supplied in the 2019 EBS report (GEOxyz, 2019) was rationalised in the same manner.

B.8 Statistical Analysis

B.8.1 Hydrocarbon indices

Carbon Preference Index

CPI in this report is the sum of the odd n-alkanes divided by the sum of the even n-alkanes. For the practice of environmental oil analysis, n-alkanes are examined within their full span ($nC_{10\text{-}37}$). The CPI is a key diagnostic parameter to determine the relative importance of biogenic and anthropogenic alkane sources to the ambient environment (Yue & Fraser, 2004). CPI values near 1.0 suggest a mainly petrogenic source of hydrocarbons, while CPI values greater than 1 suggests abundant land plant organic components including leaf waxes (Wang *et al.*, 2009). In contrast, CPI values >2 suggests mainly biologic hydrocarbons.

$$CPI = \frac{(\text{the sum of odd n} - \text{alkanes})}{(\text{the sum of even n} - \text{alaknes})}$$

Pristane Phytane Ratio

Further insight into the origin of hydrocarbons in marine sediments can be gained through the Pristane (Pr) and Phytane (Ph) ratio. Pr is primarily biogenic in origin (Muniz *et al.*, 2004) while Ph is rarely produced biogenically but is a common component of crude oil (Steinhauer & Boehm, 1992). Therefore, Ph is generally absent or only present at low levels in uncontaminated natural systems (Blumer & Snyder, 1965). Concentrations of pristane and phytane, and their ratio to each other have, therefore, been used as an indicator of petrogenic contamination (Berthou & Friocourt, 1981).

B.8.2 Univariate Macrofaunal indices

Univariate community analyses were conducted using PRIMER (version 7) software. Diversity indices can be broadly divided into two types: those that assess species richness (how many types are there) and those that assess species evenness or dominance (how individual organisms are distributed among species).

Margalef's Richness Index

This index is a simple species diversity index that emphasizes species richness. It attempts to correct for the increasing number of species collected with greater number of organisms sampled by dividing the species count by the natural log of the number of sampled organisms (Clifford & Stevenson, 1975). Despite this, the index still suffers from a dependence between species diversity and number of organisms. However, it remains a widely used index of diversity.

$$D_{Mg} = \frac{S - 1}{\log (\mathrm{N})}$$

where DMg = Margalef's Richness, S = total number of species, N = total number of individuals

Shannon-Wiener's Diversity Index

This index is a widely used measure of diversity providing an integrated index of species richness and relative abundance (Clarke & Warwick, 2006). The index is a measure of the uncertainty of predicting the identity of an individual based on overall community composition.

$$H' = -\sum_{i=1}^{S} pi \log pi$$

where H'= Shannon-Wiener Diversity Index, p_i = the proportion of individuals belonging to the i^{th} species

Simpson's dominance index

This index is used to quantify the biodiversity of a habitat by taking into account the number of species present as well as the abundance of each species. The Simpson's index is a dominance index because it gives more weight to common or dominant species.

$$\lambda = \sum Pi^2$$

where λ = Simpson's Dominance index, p_i = the proportion of individuals belonging to the i^{th} species.

Peilou's Evenness

Evenness expresses how uniformly individuals are distributed between species in a sample. If all species in samples are represent by an equal number of individuals then J' = 1 while if one species strongly dominated J' will be close to 0. It is a component of, and calculated using, a theoretical diversity measure.

$$J = \frac{H'}{logS}$$

where *J* = Pielou's Evenness Index, *H*' = Shannon-Wiener Index, *S*= total number of species.

B.8.3 Species Accumulation Curves

Species accumulation curves are concerned with accumulation rates of new species over the sampled area and evaluates the benefits of additional sampling. Two species accumulation curves are presented in this report. First is the Sobs curve (species observed), which incrementally pools samples in their label order. The second is the UGE (Ugland Gray Ellingsen) curve is smooth as it is an averaged output based on the samples being added in random order 999 times (Ugland *et al.*, 2003).

B.8.4 Species Ranking

Species ranking was conducted using R statistical environment to determine the most abundant species within the full and adult data sets. Species rank was performed using the function rankabundance in the 'BiodiversityR: Package for Community Ecology and Sustainability Analysis' package (version 2.14-1).

B.8.3 Multivariate Analyses

Multivaraite analyses were performed on the faunal and physico-chemical data sets using the PRIMER v7 software package (Clarke & Warwick, 2006). Multivariate analysis reduces ecological datasets to an appropriate triangular matrix representing the resemblance of every pair of samples, in terms of their assemblages or physico-chemical environment. Because several variables can be considered simultaneously, interpretations can be made that are not possible in univariate statistics. There are 3 main categories of multivariate analysis that are common and include; clustering , ordination and statistical tests of hypotheses.

B.8.4 Cluster Analysis and SIMPROF

Cluster analysis organises samples into groups, or clusters, on the basis of how closely similar they are. The SIMPROF test is then important in deciding which groups in the hierarchical group-average cluster analysis (UPGMA) can be interpreted as significantly distinguishable clusters.

B.8.5 non-Metric Multidimensional Scaling

Multidimensional scaling is a method used to visualise the level of similarity between samples or in other words the pairwise distances between samples in a 2 or 3 dimensional plot. Therefore the configuration of the samples on the plot is a reflection of their similarity, with greater distances between samples representing greater dissimilarity.

Naturally, the illustration of a multidimensional space on a 2- or 3- dimensional plot will result in some distortion (stress). Stress values generally increase with reducing dimensionality but also with increasing quantity of data. The stress value is therefore a good indication of the usefulness of the plot and as suggested by Clarke and Warwick (2006) can be interpreted as follows:

Stress <0.05: Almost perfect representation of rank similarities
Stress <0.1: Good representation
Stress <0.2: Still useful
Stress <0.3: Should be treated with a great deal of scepticism

B.8.6 SIMPER

The similarity percentages (SIMPER) analysis breaks down the contribution of species or variables to the observed similarity (or dissimilarity) between samples. The method uses the Bray-Curtis or Euclidean distance measure, comparing in turn, each sample in 1 cluster to that of samples in another cluster. Therefore the mean similarity/distance between clusters can be obtained for each species or physico-chemical variable, and ranks them in decreasing order of their contribution to overall dissimilarity.

B.8.7 RELATE

The RELATE test of PRIMER calculates the rank similarity of 2 specified data matrices. It can be used to provide an indication of the effect of the removal of a subset of taxa (e.g. juveniles) on the structure of the data set overall.

B.8.8 BIOENV

The BIOENV procedure (Clarke & Ainsworth, 1993) is a similarity-based and exploratory method concerned with identifying the subset of environmental variables whose Euclidean distance correlates maximally with the Bray-Curtis similarity matrix.

B.8.9 Spearman's Rank Correlation

Spearman's rank correlation was performed to determine the degree of association between physico-chemical variables. A spearman's rank correlation matrix, comparing many of the environmental variables, was calculated using the function rcorr in Hmisc package (version 4.6-0) in R statistical environment version 4.1.2.

B.8.10 Grubb's Test

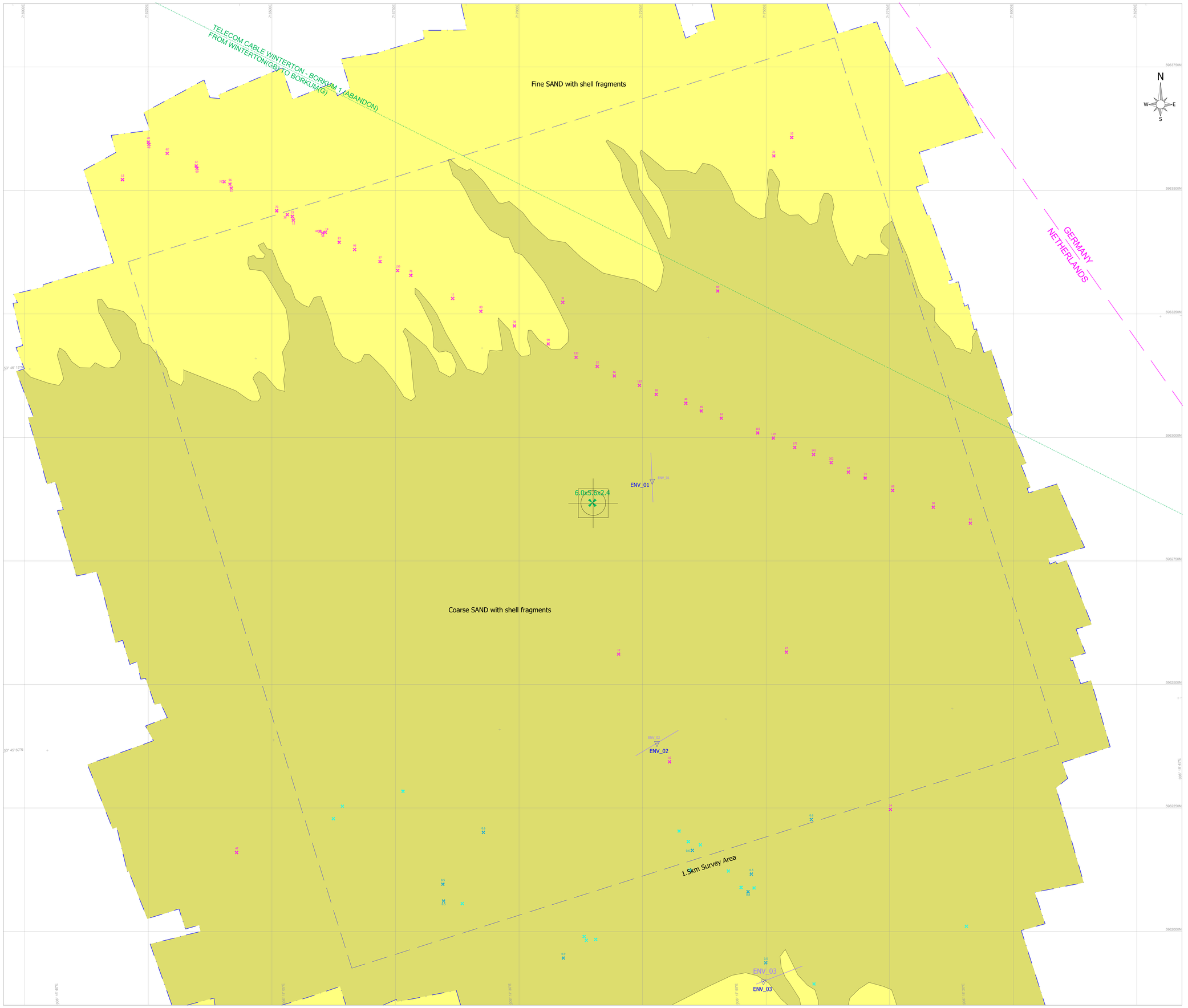
Grubbs' test (Grubbs, 1950) was performed to detect if there were any high or low outliers. The Grubbs' test was performed using the function grubbs.test in the package outliers (version 0.14) in R statistical environment. The Grubbs' test for minimum (i) and maximum (ii) outliers id defines as:

$$\text{(i)} \qquad G = \frac{\hat{Y} - Ymin}{s}$$

$$\text{(ii)} \qquad G = \frac{Ymax - \hat{Y}}{s}$$

where $\hat{Y}$ = sample mean, s = standard deviation

Appendix C. Seabed Features Charts



LEGEND

Proposed new location for N04-A Platform

U.T.M. grid

Geographical grid

SCALE 1:2500

0 25 50 75 100 125 250 meters

0 160 320 640 1280 feet

Survey Boundary (2021)

Survey Boundary (2019)

Existing Infrastructure

EEZ Boundary

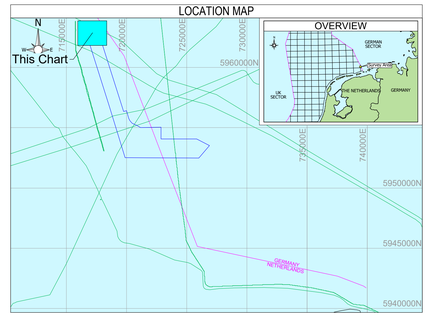
SEABED FEATURES:

- Side scan sonar contact from 2019 survey. >0.3m (Height removed for clarity)
- 0.3 — Side scan sonar contact from 2019 survey with height in metres. >0.5m
- Side scan sonar contact from 2021 survey. >0.3m (Height removed for clarity)
- 0.3 — Side scan sonar contact from 2021 survey with height in metres. >0.5m
- 42 — Magnetic anomaly from 2019 survey with anomaly size in nanoTeslas
- 2 — Magnetic anomaly from 2021 survey with anomaly size in nanoTeslas
- 1.4 x 0.5 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_38 — 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.	N04-A Proposed platform Location	717 150.00 mE 5 962 867.00 mN	53° 46' 04.519" N 06° 17' 41.464" 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 TR1675D
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

Platform Area - N04a

Site Survey

ENVIRONMENTAL SEABED FEATURES CHART

Chart:	Scale:	
002/004	1/2500	LAT

Drawing made by:

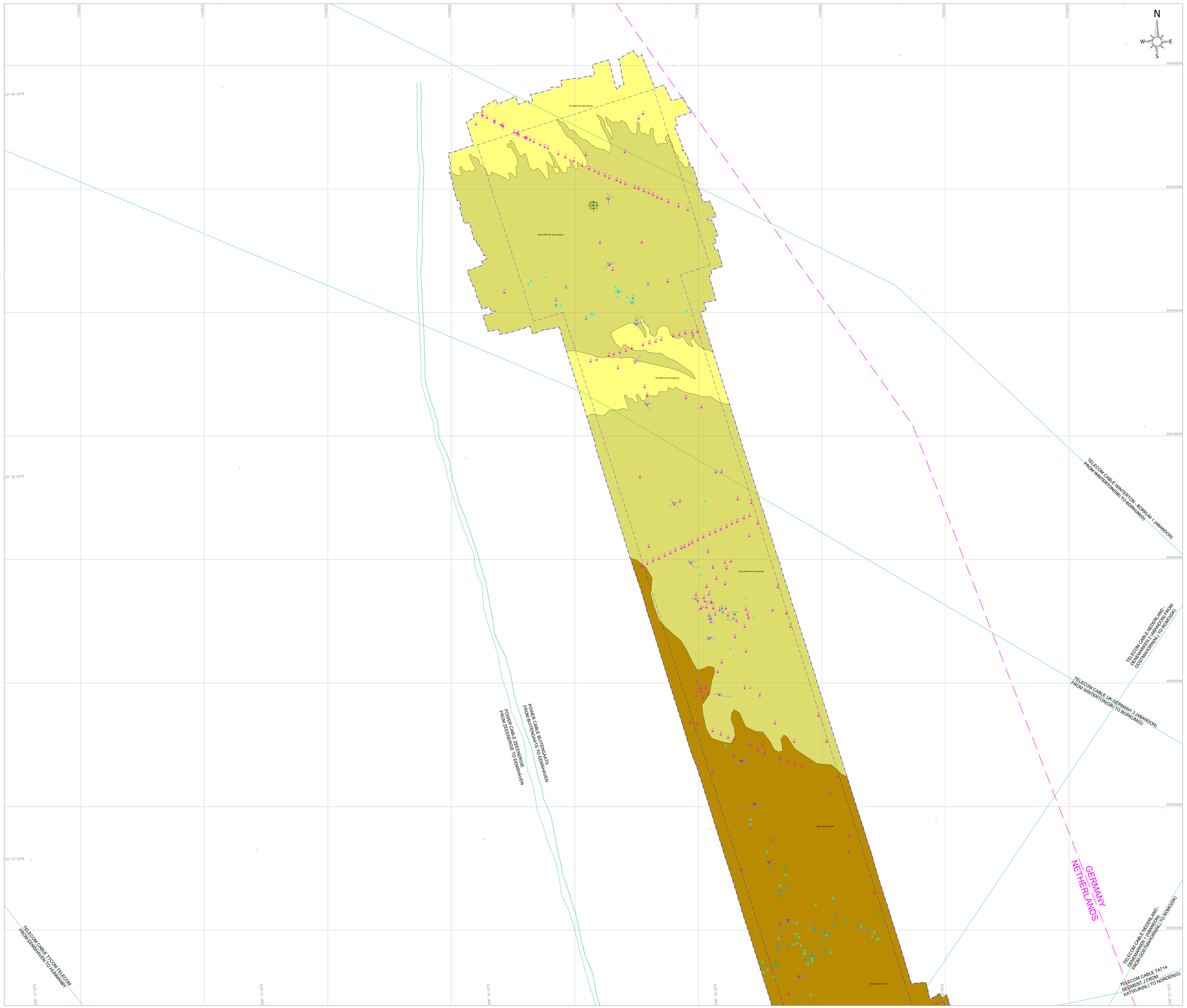
GEOXYZ
2 Route D'Arlon
Windhof Business center block A
L-8388 WINDHOF
Luxembourg

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:	Datum:	Description:	Drawn:	Checked:
00	06-01-2022	First internal review	KMc	CA
01	07-01-2022	Issued with Report	KMc	CA

ONE Dyas Drawing No.	N04A-7-50-0-72004-01_SBF	GEOxyz Drawing No.	NL4658H-553-DR-002



LEGEND

- Proposed new location for N04-A Platform
- U.T.M. grid
- Geographical grid
- Survey Boundary
- Existing Infrastructure
- EEZ Boundary
- Shipping Lane
- Monopile location Riffgat

SCALE 1:10000

0 100 200 300 400 500 1000 meters

0 400 800 1600 3200 feet

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
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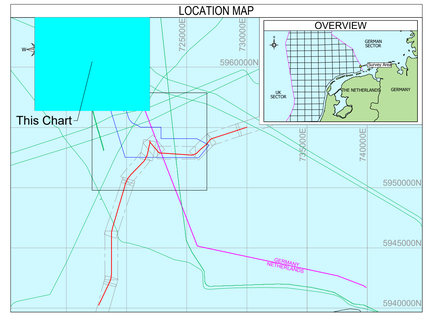
- 42 — Magnetic anomaly from 2021 survey with anomaly size in nanoTeslas
- 1.4 x 0.8 x 0.3 — Debris item from 2019 survey with dimensions (length x width x height) in meters
- 2.4x0.7x0.6 — Debris item from 2021 survey with dimensions (length x width x height) in meters
- 37.2x10.9x1.3 — Wreck from 2021 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
- BW_38 — 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)
- Area of dredging scars

ONE INFORMATION PANEL

1.	N04-A Platform Location	717 150.00 mE 5 962 867.00 mN	53° 46' 04.519" N 06° 17' 41.464" E

LOCATION MAP



SURVEY EQUIPMENT

Positioning:	Fugro seastar 9205
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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 TR1075D
Seismic source:	GSO 180 Sparker

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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

N04a-N05a Pipeline Route

Pipeline Route Survey

ENVIRONMENTAL SEABED FEATURES CHART - NORTH

Chart:	Scale:	
003/006	1/10000	LAT

Drawing made by:

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

Client:

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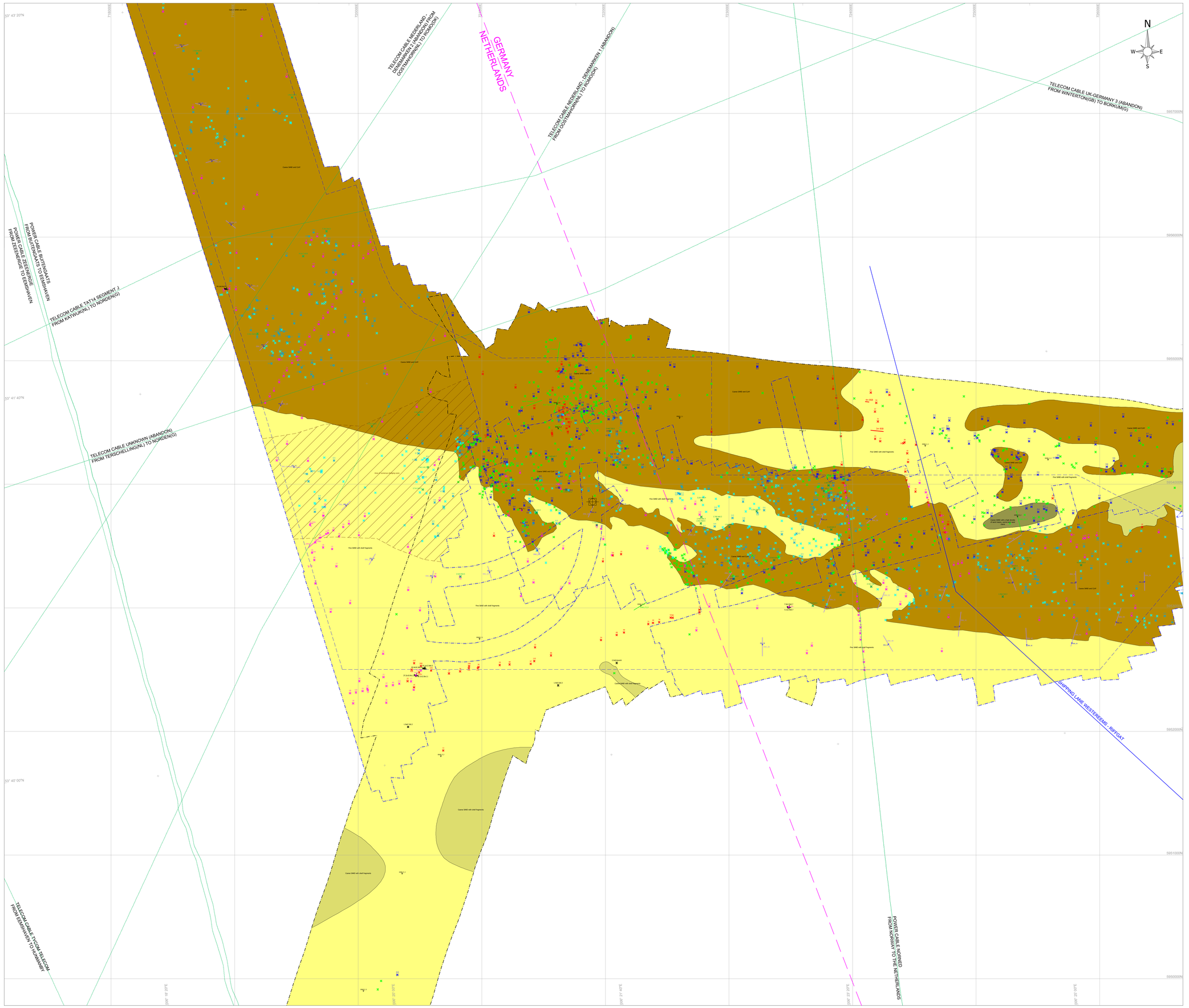
Issue no:	Date:	Description:	Drawn:	Checked:
00	06-01-2022	First internal review	KMc	CA
01	10-01-2022	Issued with Report	KMc	CA
02	18-01-2021	Final Issue	KMc	CA
03	25-01-2021	Final Issue - cable database information addition	KMc	CA

ONE Dyas Drawing No.	N04A-7-50-0-72008-01	**GEOxyz Drawing No.**	NL4658H-553-DR-010



LEGEND

- Proposed new location for N05-A Platform
- U.T.M. grid
- Geographical grid
- Survey Boundary
- Existing Infrastructure
- EEZ Boundary
- Shipping Lane
- Monopile location Riffgat

SCALE 1:10000

0 100 200 300 400 500 1000 meters

0 400 800 1600 3200 feet

SEABED FEATERS:

- Side scan sonnar contact from 2019 survey. >0.3m (Height removed for clarity)
- 2.3 — 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)
- 2.3 — Side scan sonnar contact from 2021 survey with height in metres. >0.5m
- 76 — Magnetic anomaly from 2019 survey with anomaly size in nanoTeslas
- 42 — 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
- 37.2x10.9x1.3 — Wreck 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
- SNV_38 — 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)
- Area of dredging scars

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 TR1075D
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

N04a-N05a Pipeline Route

Pipeline Route Survey

ENVIRONMENTAL SEABED FEATURES CHART - SOUTH

Chart:	Scale:	
004/006	1/10000	LAT

Drawing made by:

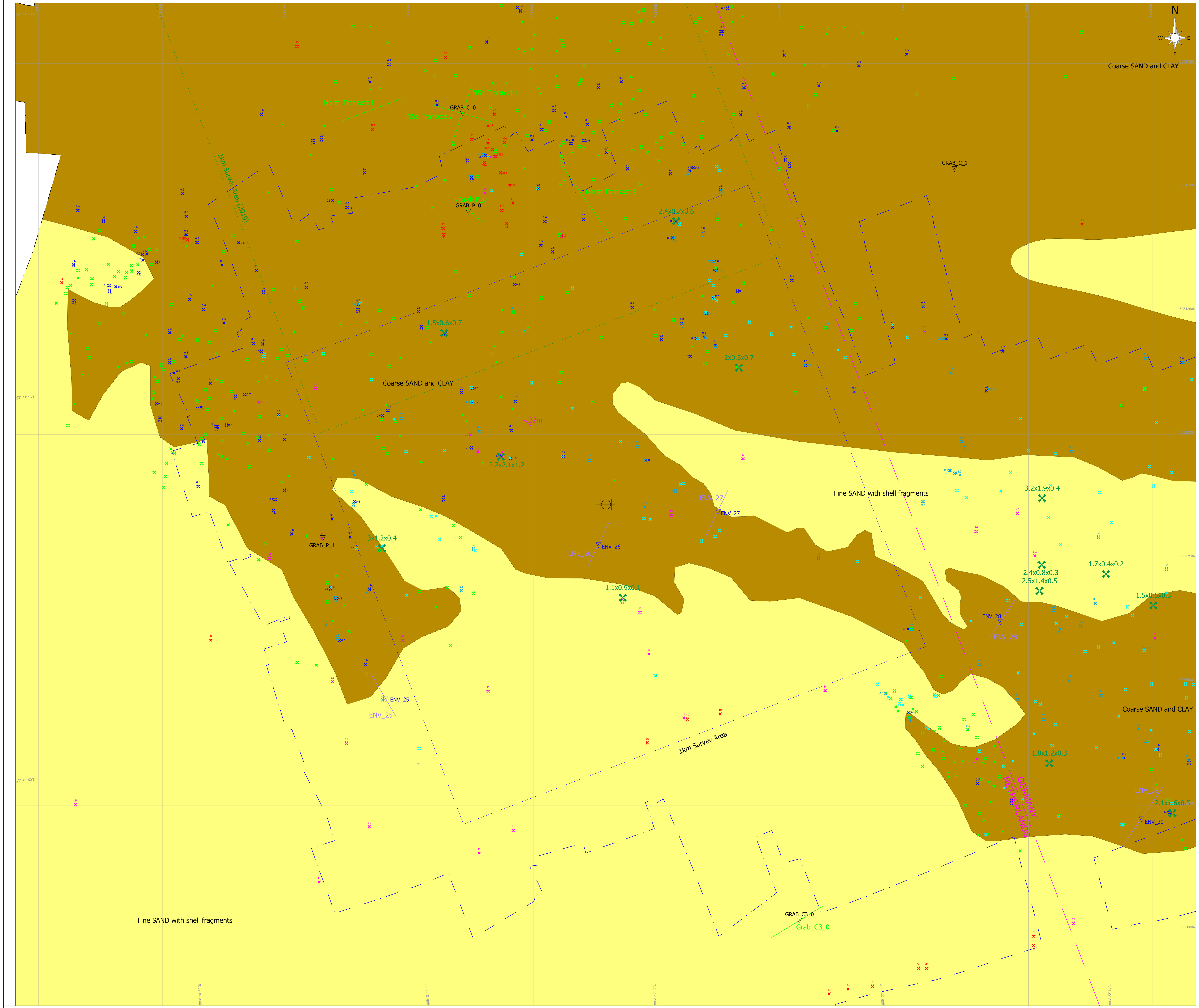
GEOXYZ
2 Route D'Arlon
Windhof Business center block A
L-8388 WINDHOF
Luxembourg

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	06-01-2022	First internal review	KMc	CA
01	10-01-2022	Issued with Report	KMc	CA
02	18-01-2021	Final Issue	KMc	CA
03	25-01-2021	Final Issue - cable database information addition	KMc	CA

ONE Dyas Drawing No.	N04A-7-50-0-72011-01	**GEOxyz Drawing No.**	NL4658H-553-DR-028



LEGEND

- Proposed new location for N05-A Platform
- U.T.M. grid
- Geographical grid
- SCALE 1:2500 — 0, 25, 50, 75, 100, 125, 250 meters; 0, 160, 320, 640, 1280 feet
- Survey Boundary (2021)
- Survey Boundary (2019)
- Existing Infrastructure
- EEZ Boundary

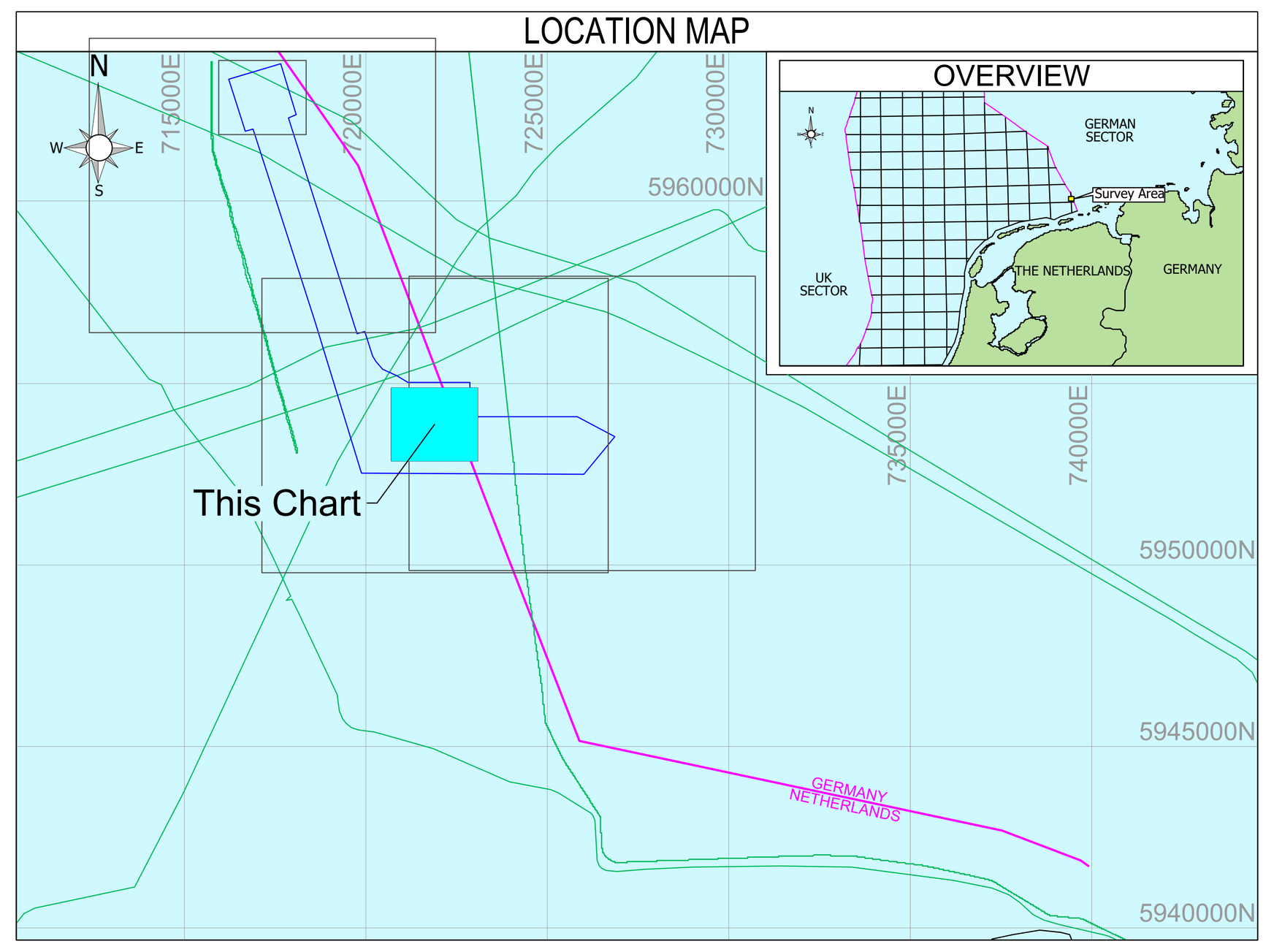
SEABED FEATERS:

- Side scan sonar contact from 2019 survey. >0.3m (Height removed for clarity)
- 0.3 — Side scan sonar contact from 2019 survey with height in metres. >0.5m
- Side scan sonar contact from 2021 survey. >0.3m (Height removed for clarity)
- 0.3 — Side scan sonar contact from 2021 survey with height in metres. >0.5m
- 16 — Magnetic anomaly from 2019 survey with anomaly size in nanoTeslas
- 16 — Magnetic anomaly from 2021 survey with anomaly size in nanoTeslas
- 1.4 x 0.5 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_P_12 — Grab sample from 2019 survey with identification
- ENV_38 — Grab sample from 2021 survey with identification
- Fine SAND with shell fragments
- Coarse SAND with shell fragments
- Coarse SAND and CLAY
- Coarse SAND with high density of sand mason, worms and razor clams

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 TR1075D
Seismic source:	GSO 180 Sparker

SURVEY DATES

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

Geo Ocean III: 20/10/2021 untill 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

Platform Area - N05a

Site Survey

ENVIRONMENTAL SEABED FEATURES CHART

Chart: 002/005	Scale: 1/2500	LAT

Drawing made by:

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

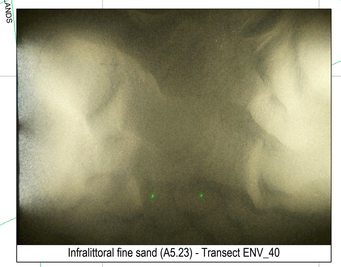
Client:

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:	Datum:	Description:	Drawn:	Checked:
00	15-12-2021	First internal review	KMc	CA
01	20-12-2021	Issued with Report	KMc	CA

ONE Dyas Drawing No.	N05A-7-50-0-72035-01	**GEOxyz Drawing No.**	NL4658H-553-DR-006



Infralittoral fine sand (A5.23) - Transect ENV_40

Infralittoral mixed sediment (A5.43) - Transect ENV_29

Infralittoral coarse sediment (A5.13) - Transect ENV_30

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)
- 0.5 — 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	53° 41' 06.322" N
		5 953 858.00 mN	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

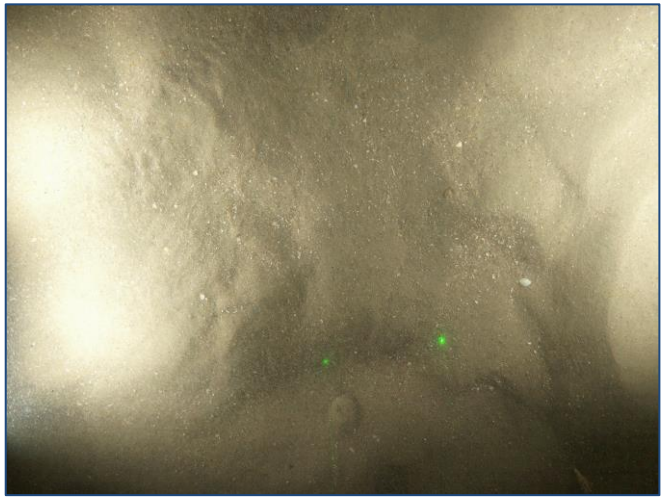
Client:

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

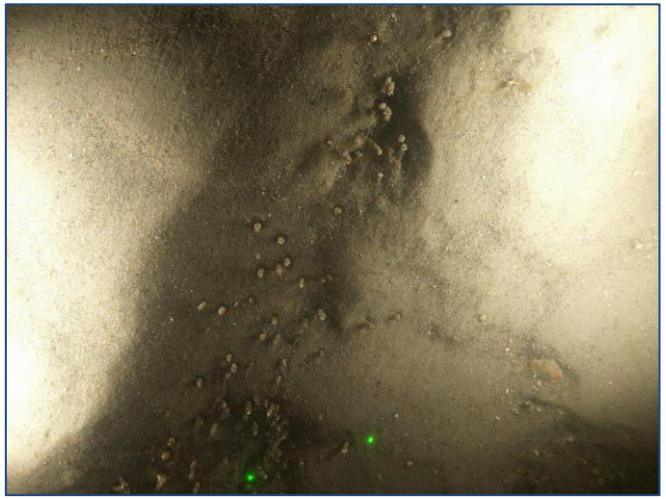
Issue no:	Date:	Description:	Drawn:	Checked:
00	16-11-2021	Preliminary Chart	CA	SC
01	30-11-2021	Draft Issue	CA	SC
02	08-12-2021	SSS contact interpretation updated / environmental sediment descriptions added	CA	SC
03	16-12-2021	Issued with Report	KMc	CA

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

Appendix D. Sampling and Seabed Photographs



Fix: 347 E: 717267.4 N: 5962862 Depth: 23.7 m



Fix: 357 E: 717265.9 N: 5962911.4 Depth: 23.5 m

Area: N04A Platform Area

Station: ENV01

Image 1: MARDUT1021_ENV_01_2021_11_08_165013

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Anthozoa; *Lanice conchilega*

Image 2: MARDUT1021_ENV_01_2021_11_08_165350

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Decapoda; *Lanice conchilega*

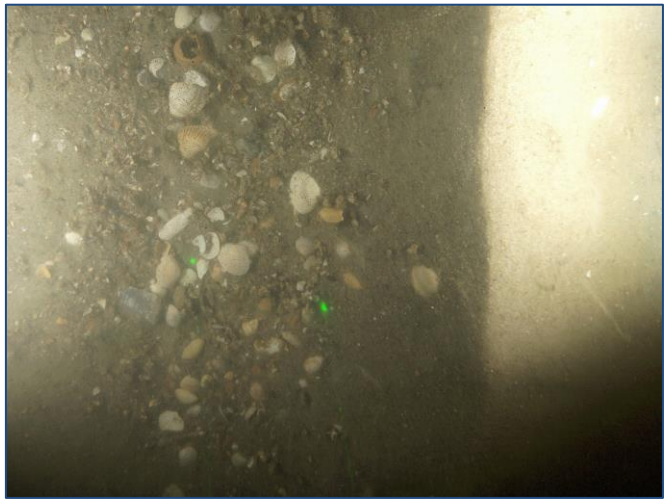
Fix: 1 E: 717266.7 N: 5962911.4 Depth: 22 m

Fix: 1 E: 717266.7 N: 5962911.4 Depth: 22 m

Station: ENV01
Sample: MACA

Sediment Description: Sand (S)
Faunal Description: Polychaeta

Fix: 321 E: 717238.3 N: 5962362.5 Depth: 24.2 m



Fix: 341 E: 717317.7 N: 5962404.9 Depth: 24.1 m

Area: N04A Platform Area

Station: ENV02

Image 1: MARDUT1021_ENV_02_2021_11_08_154447

Sediment Description: Rippled coarse sand with few shell fragments

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_02_2021_11_08_155101

Sediment Description: Rippled coarse sand with shell fragments and granules

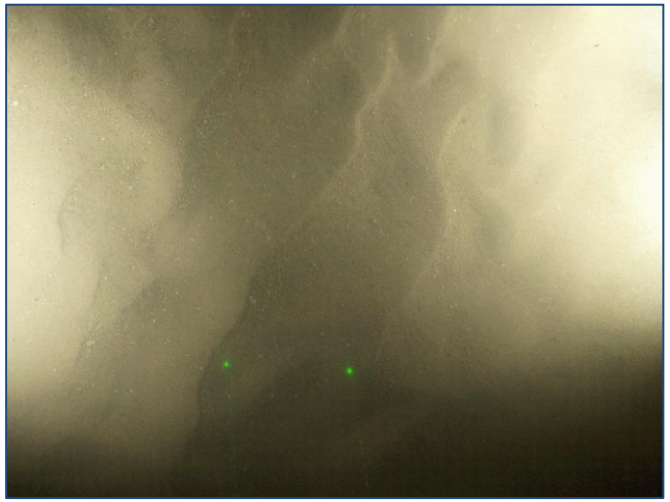
Faunal Description: *Lanice conchilega*.

Fix: 4 E: 717279.9 N: 5962381.9 Depth: 23 m

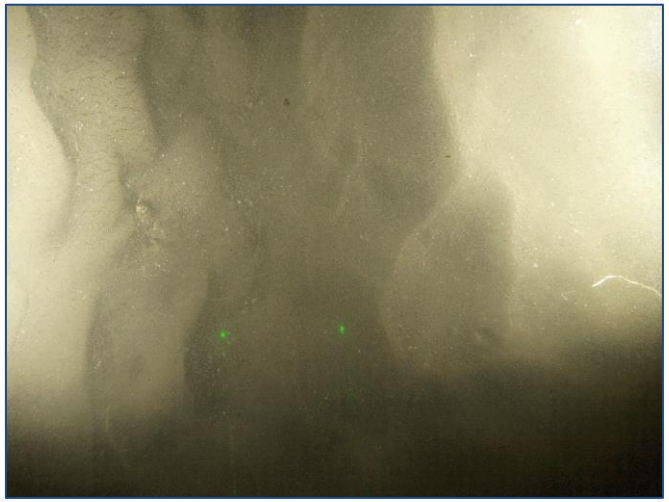
Fix: 4 E: 717279.9 N: 5962381.9 Depth: 23 m

Station: ENV02
Sample: MACA

Sediment Description: Sandy Gravel (sG)
Faunal Description: *Lanice conchilega*



Fix: 379 E: 717485.6 N: 5961896.4 Depth: 24.9 m



Fix: 390 E: 717540 N: 5961917.7 Depth: 24.9 m

Area: N04A - N05A Pipeline

Station: ENV03

Image 1: MARDUT1021_ENV_03_2021_11_08_193137

Sediment Description: Rippled sand with few shell fragments

Faunal Description: No visible fauna

Image 2: MARDUT1021_ENV_03_2021_11_08_193537

Sediment Description: Rippled sand with shell fragments

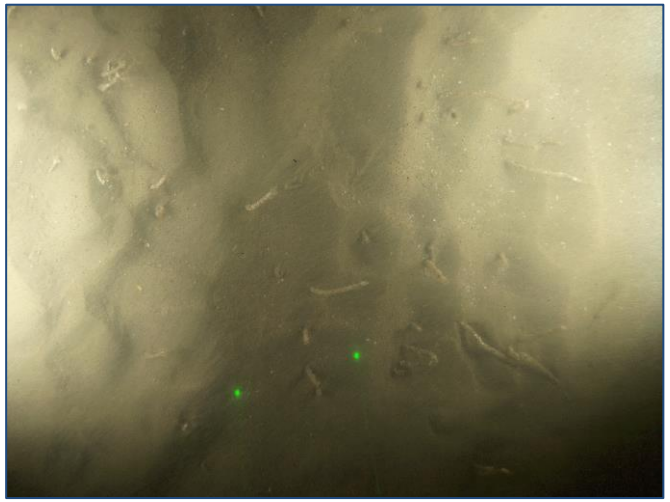
Faunal Description: *Lanice conchilega*

Fix: 92 E: 717492 N: 5961898.7 Depth: 24.2 m

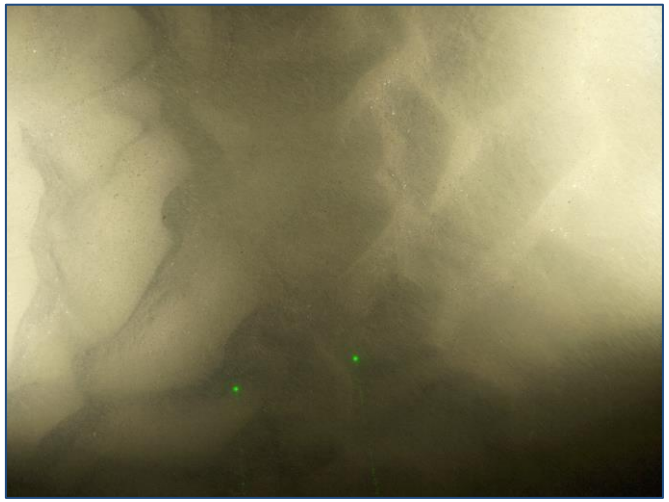
Fix: 92 E: 717492 N: 5961898.7 Depth: 24.2 m

Station: ENV03
Sample: MACA

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



Fix: 403 E: 717487.7 N: 5961588.4 Depth: 24 m



Fix: 409 E: 717506 N: 5961618 Depth: 24.5 m

Area: N04A - N05A Pipeline

Station: ENV04

Image 1: MARDUT1021_ENV_04_2021_11_08_200228

Sediment Description: Rippled sand with shell fragments

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_04_2021_11_08_200443

Sediment Description: Rippled sand with shell fragments

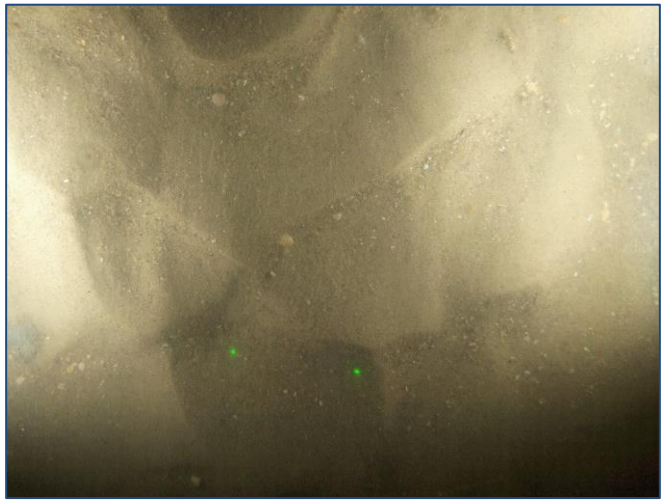
Faunal Description: No visible fauna

Fix: 94 E: 717487.6 N: 5961594.4 Depth: 24.6 m

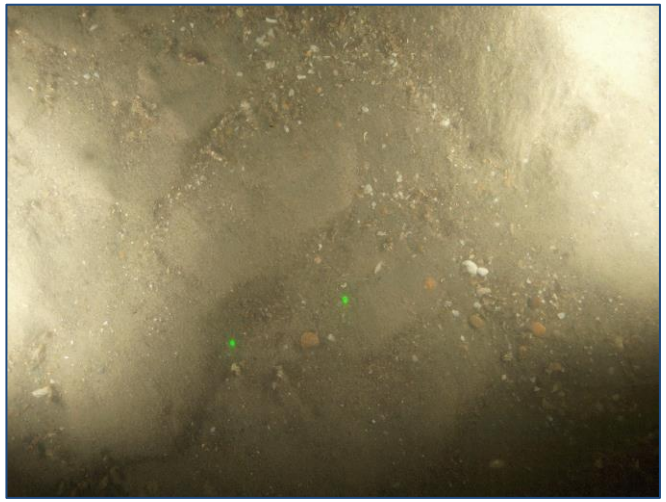
Fix: 94 E: 717487.6 N: 5961594.4 Depth: 24.6 m

Station: ENV04
Sample: MACA

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



Fix: 424 E: 717619.3 N: 5961197.5 Depth: 22.1 m



Fix: 438 E: 717576.4 N: 5961255.8 Depth: 22.4 m

Area: N04A - N05A Pipeline

Station: ENV05

Image 1: MARDUT1021_ENV_05_2021_11_08_205227

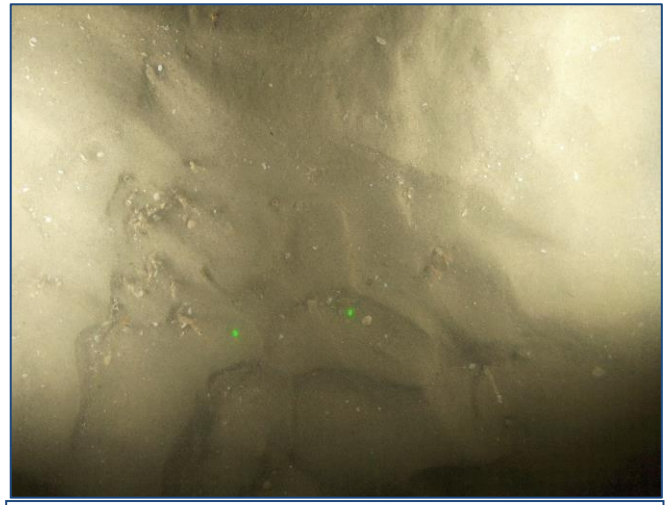
Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_05_2021_11_08_205723

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Lanice conchilega*



Fix: 442 E: 717564.1 N: 5961274.3 Depth: 22.3 m

Fix: 114 E: 717583.5 N: 5961248.3 Depth: 24.9 m

Station: ENV05

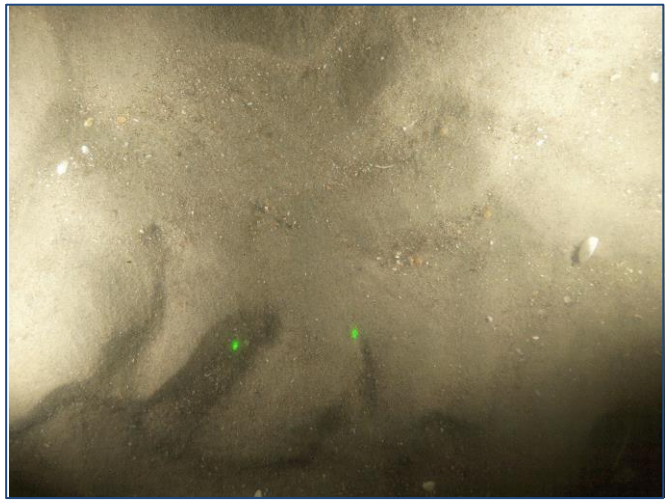
Image 3: MARDUT1021_ENV_05_2021_11_08_205848

Sediment Description: Rippled sand with shell fragments

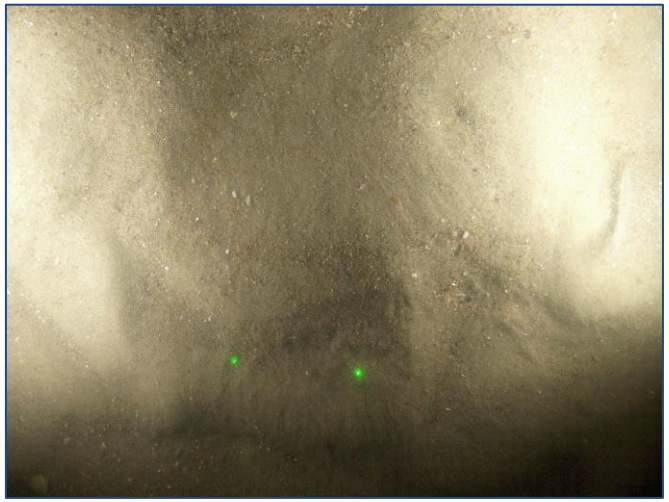
Faunal Description: *Lanice conchilega*

Sample: MACB

Sediment Description: Muddy Gravelly Sand (mgS)
Faunal Description: Ammodytes



Fix: 453 E: 717831.9 N: 5960419.7 Depth: 21.8 m



Fix: 468 E: 717769.9 N: 5960488.5 Depth: 21.8 m

Area: N04A - N05A Pipeline

Station: ENV06

Image 1: MARDUT1021_ENV_06_2021_11_08_213626

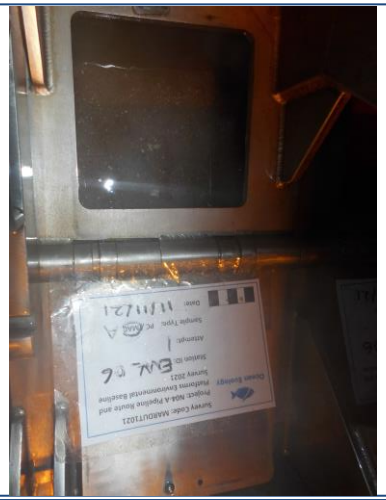
Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Caridea

Image 2: MARDUT1021_ENV_06_2021_11_08_214208

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Trachiniformes

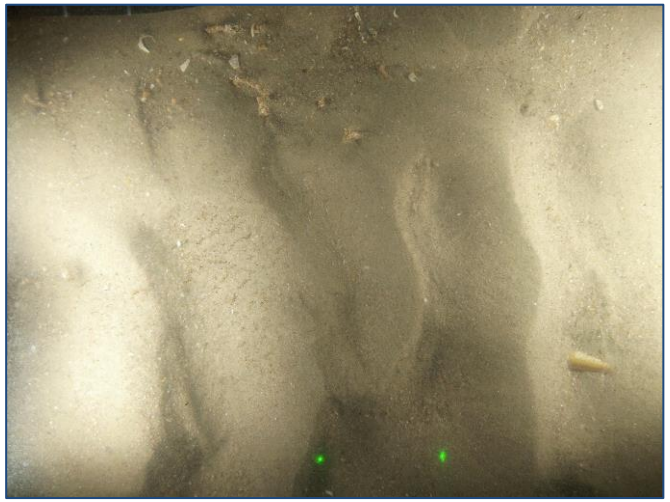


Fix: 110 E: 717805.8 N: 5960448.8 Depth: 23.9 m

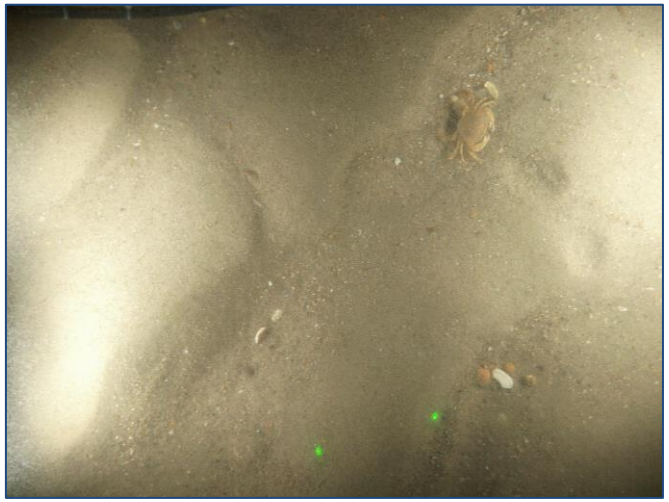
Fix: 110 E: 717805.8 N: 5960448.8 Depth: 23.9 m

Station: ENV06
Sample: MACA

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



Fix: 473 E: 717984.1 N: 5959914.9 Depth: 21.3 m



Fix: 490 E: 717922.2 N: 5959990.1 Depth: 21.5 m

Area: N04A - N05A Pipeline

Station: ENV07

Image 1: MARDUT1021_ENV_07_2021_11_08_231925

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Actinopterygii; *Lanice conchilega*

Image 2: MARDUT1021_ENV_07_2021_11_08_232621

Sediment Description: Rippled coarse sand with shell fragments

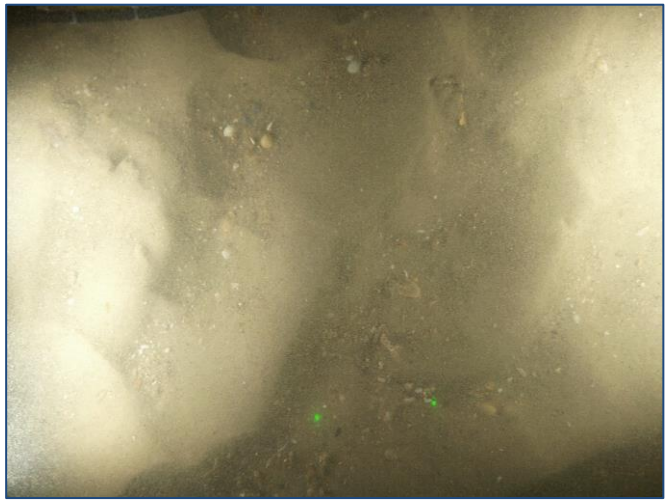
Faunal Description: *Liocarcinus* sp.

Fix: 108 E: 717936.4 N: 5959967.4 Depth: 21.9 m

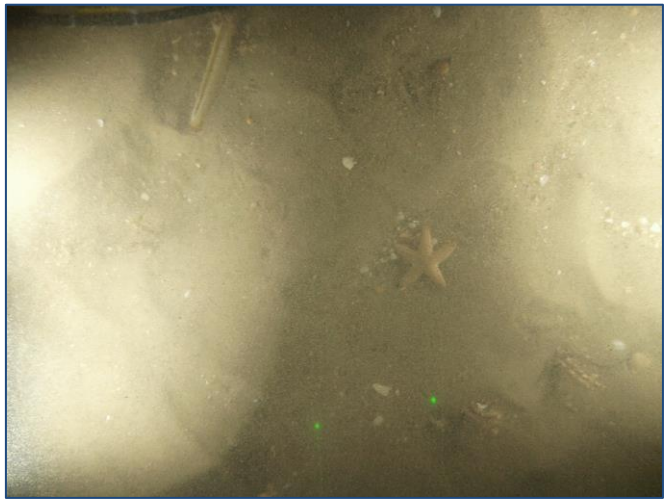
Fix: 108 E: 717936.4 N: 5959967.4 Depth: 21.9 m

Station: ENV07
Sample: MACA

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



Fix: 499 E: 718148.9 N: 5959376.4 Depth: 21.2 m



Fix: 501 E: 718146.3 N: 5959376.1 Depth: 21.2 m

Area: N04A - N05A Pipeline

Station: ENV08

Image 1: MARDUT1021_ENV_08_2021_11_09_000911

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Actinopterygii; *Lanice conchilega*

Image 2: MARDUT1021_ENV_08_2021_11_09_000926

Sediment Description: Rippled coarse sand with shell fragments

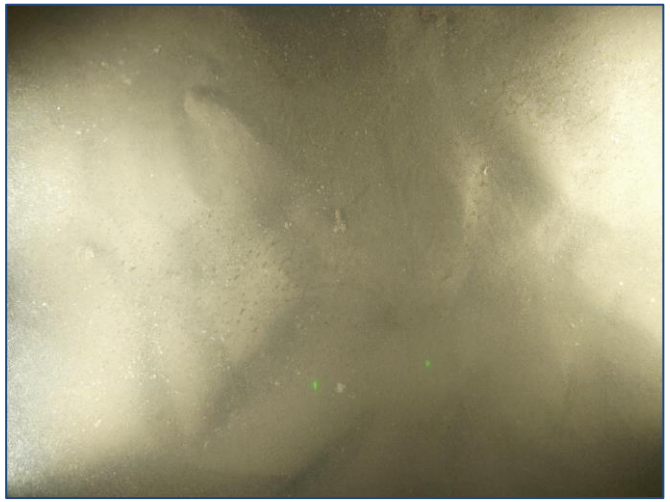
Faunal Description: *Astropecten irregularis*; *Lanice conchilega*

Fix: 106 E: 718087.7 N: 5959352.9 Depth: 22.9 m

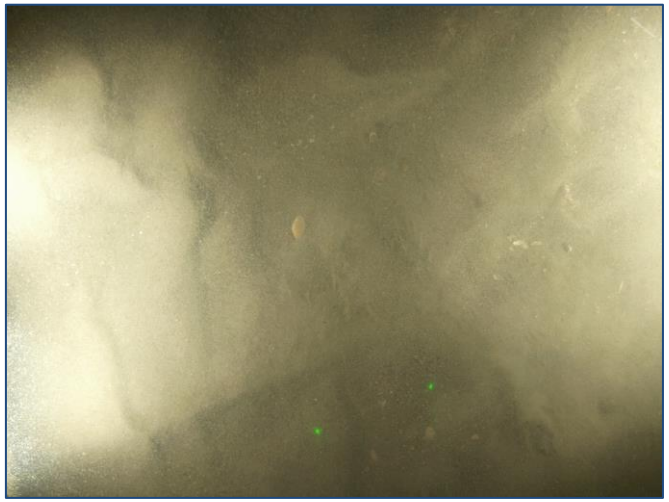
Fix: 106 E: 718087.7 N: 5959352.9 Depth: 22.9 m

Station: ENV08
Sample: MACA

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



Fix: 521 E: 718244.7 N: 5958884.6 Depth: 21.4 m



Fix: 535 E: 718176 N: 5958900.2 Depth: 21.4 m

Area: N04A - N05A Pipeline

Station: ENV09

Image 1: MARDUT1021_ENV_09_2021_11_09_004107

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_09_2021_11_09_004559

Sediment Description: Coarse sand with shell fragments and cobbles

Faunal Description: *Lanice conchilega*

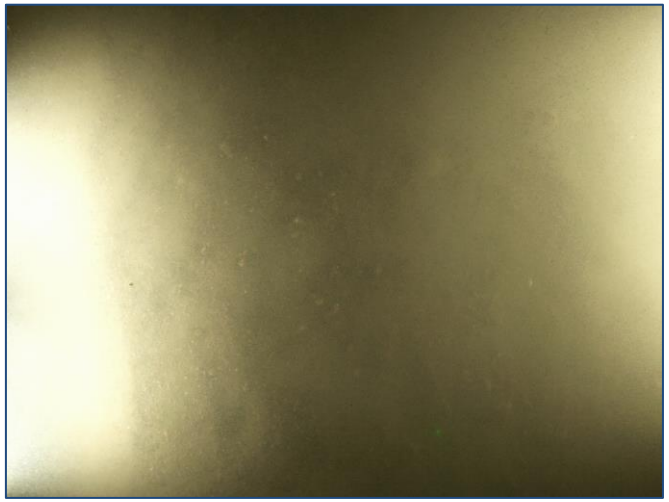
Fix: 105 E: 718168.6 N: 5958901.8 Depth: 22.2 m

Fix: 105 E: 718168.6 N: 5958901.8 Depth: 22.2 m

Station: ENV09
Sample: MACB

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

Fix: 544 E: 718404.7 N: 5958406.7 Depth: 21.8 m



Fix: 552 E: 718351.2 N: 5958362.9 Depth: 22.2 m

Area: N04A - N05A Pipeline

Station: ENV10

Image 1: MARDUT1021_ENV_10_2021_11_09_011308

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_10_2021_11_09_012025

Sediment Description: Rippled coarse sand with shell fragments

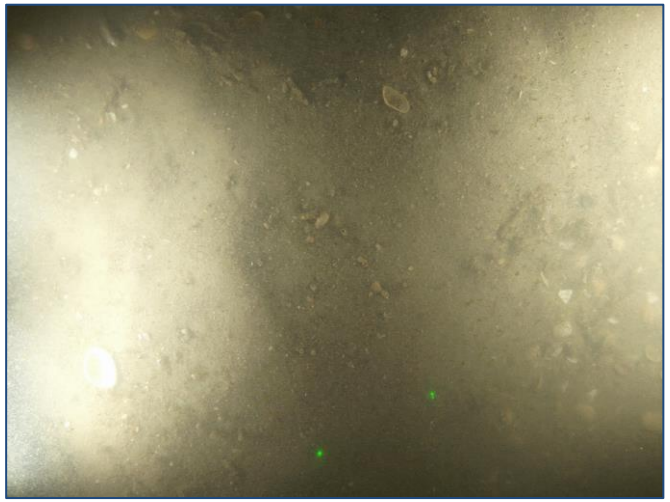
Faunal Description: Decapoda; *Lanice conchilega*

Fix: 102 E: 718347.6 N: 5958362.2 Depth: 22 m

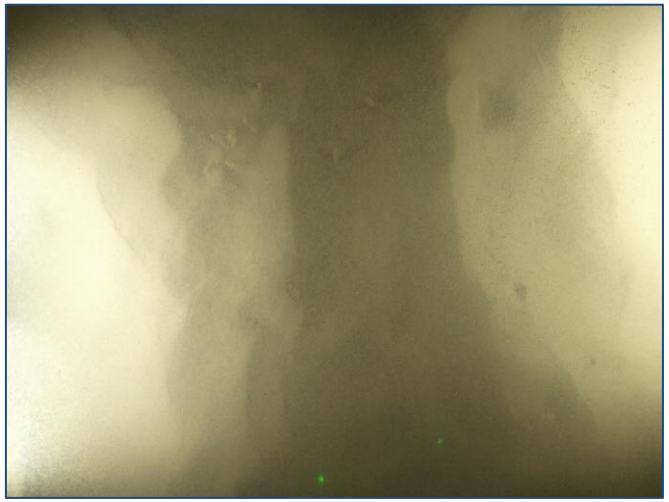
Fix: 102 E: 718347.6 N: 5958362.2 Depth: 22 m

Station: ENV10
Sample: MACA

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



Fix: 562 E: 718520.9 N: 5958037 Depth: 22.5 m



Fix: 581 E: 718406.5 N: 5957997.2 Depth: 22.7 m

Area: N04A - N05A Pipeline

Station: ENV11

Image 1: MARDUT1021_ENV_11_2021_11_09_014303

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Decapoda; *Lanice conchilega*

Image 2: MARDUT1021_ENV_11_2021_11_09_015109

Sediment Description: Rippled coarse sand

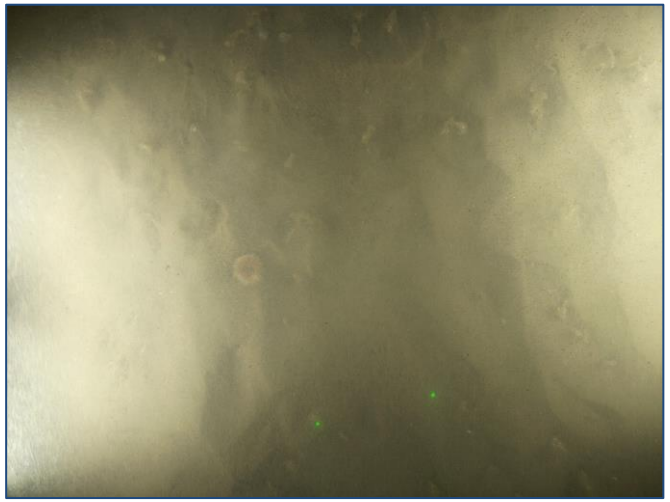
Faunal Description: *Lanice conchilega*

Fix: 90 E: 718453.9 N: 5958012.4 Depth: 23.4 m

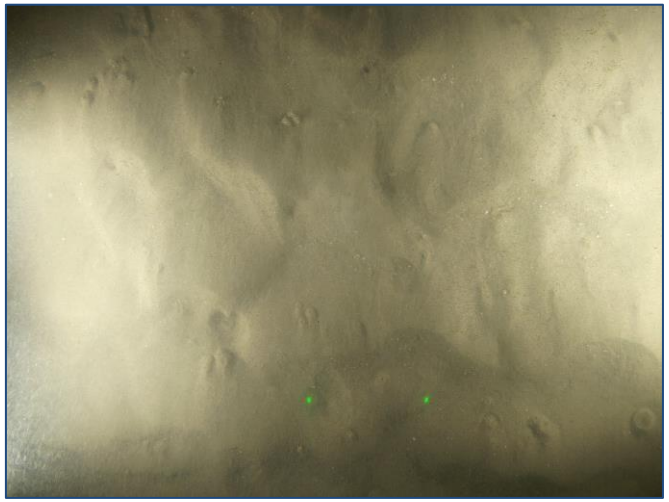
Fix: 90 E: 718453.9 N: 5958012.4 Depth: 23.4 m

Station: ENV11
Sample: MACA

Sediment Description: Gravelly sand (gS)
Faunal Description: *Lanice conchilega*



Fix: 591 E: 718530.9 N: 5957532.5 Depth: 24.2 m



Fix: 606 E: 718615.2 N: 5957554.4 Depth: 23.6 m

Area: N04A - N05A Pipeline

Station: ENV12

Image 1: MARDUT1021_ENV_12_2021_11_09_022503

Sediment Description: Rippled coarse sand with shell fragments

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

Image 2: MARDUT1021_ENV_12_2021_11_09_023315

Sediment Description: Rippled coarse sand with shell fragments

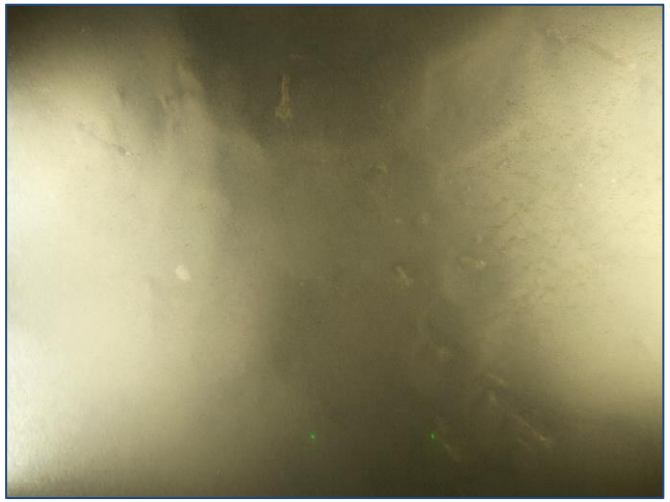
Faunal Description: Bivalve siphon; *Cylista* sp.; *Lanice conchilega*

Fix: 88 E: 718570.2 N: 5957542.5 Depth: 23.7 m

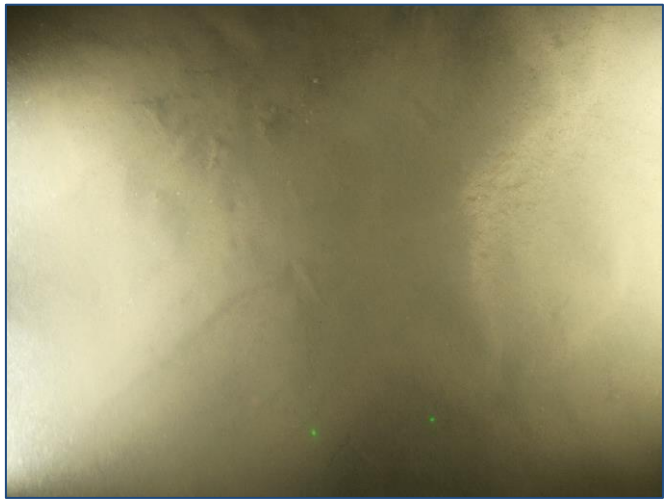
Fix: 88 E: 718570.2 N: 5957542.5 Depth: 23.7 m

Station: ENV12
Sample: MACA

Sediment Description: Gravelly sand (gS)
Faunal Description: *Lanice conchilega*



Fix: 613 E: 718660.9 N: 5957086.6 Depth: 24.4 m



Fix: 625 E: 718740.4 N: 5957067.7 Depth: 24.2 m

Area: N04A - N05A Pipeline

Station: ENV13

Image 1: MARDUT1021_ENV_13_2021_11_09_025651

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Animalia tube; Caridea; *Lanice conchilega*;

Image 2: MARDUT1021_ENV_13_2021_11_09_030243

Sediment Description: Rippled coarse sand with shell fragments

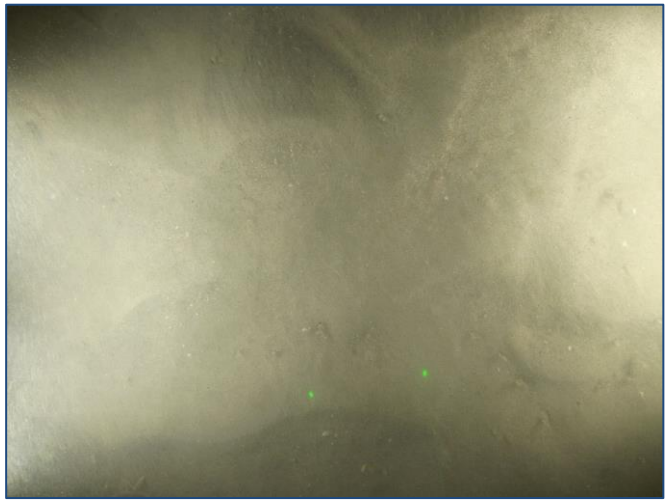
Faunal Description: Actinopterygii; *Lanice conchilega*

Fix: 85 E: 718724.9 N: 5957071.1 Depth: 21.8 m

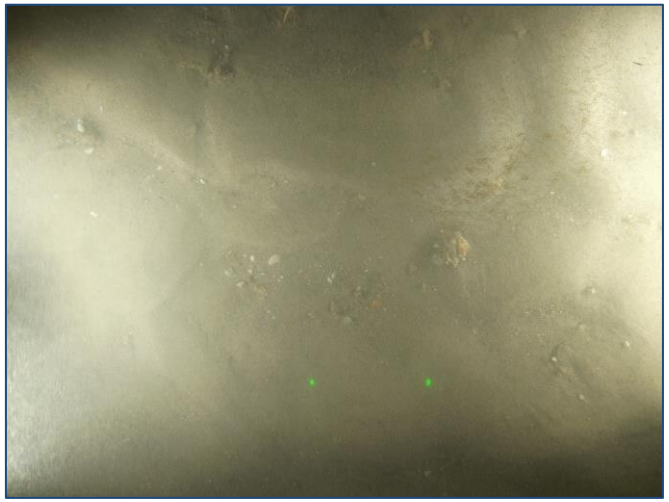
Fix: 85 E: 718724.9 N: 5957071.1 Depth: 21.8 m

Station: ENV13
Sample: MACA

Sediment Description: Gravelly sand (gS)
Faunal Description: *Lanice conchilega*



Fix: 636 E: 718750 N: 5956598.2 Depth: 23.7 m



Fix: 656 E: 718874.2 N: 5956632.2 Depth: 23.7 m

Area: N04A - N05A Pipeline

Station: ENV14

Image 1: MARDUT1021_ENV_14_2021_11_09_033135

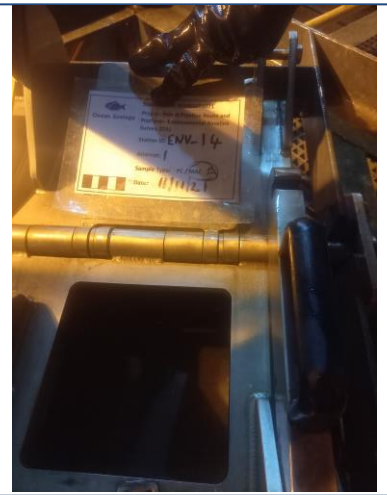
Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Asteroidea; *Lanice conchilega*

Image 2: MARDUT1021_ENV_14_2021_11_09_034041

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: Asteroidea; *Lanice conchilega*



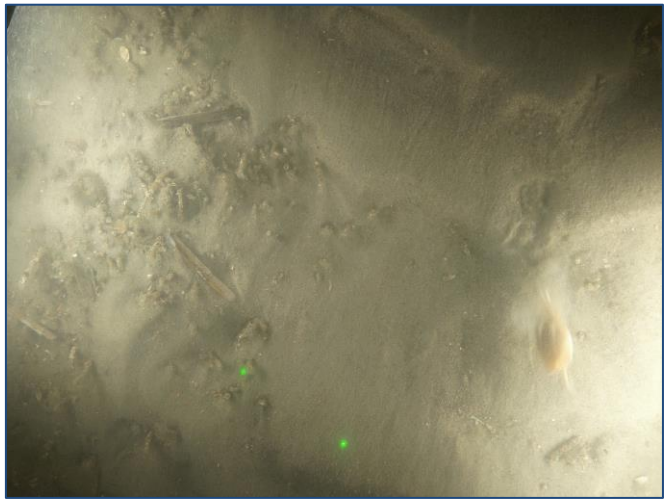
Fix: 83 E: 718816.4 N: 5956616.3 Depth: 21.9 m

Fix: 83 E: 718816.4 N: 5956616.3 Depth: 21.9 m

Station: ENV14
Sample: MACA

Sediment Description: Gravelly sand (gS)
Faunal Description: *Lanice conchilega*

Fix: 659 E: 718906.5 N: 5956149.5 Depth: 23.4 m



Fix: 675 E: 718999.9 N: 5956076.2 Depth: 23.7 m

Area: N04A - N05A Pipeline

Station: ENV15

Image 1: MARDUT1021_ENV_15_2021_11_09_053734

Sediment Description: Rippled coarse sand with shell fragments

Faunal Description: *Asterias rubens; Astropecten irregularis; Lanice conchilega*

Image 2: MARDUT1021_ENV_15_2021_11_09_054550

Sediment Description: Rippled coarse sand with shell fragments

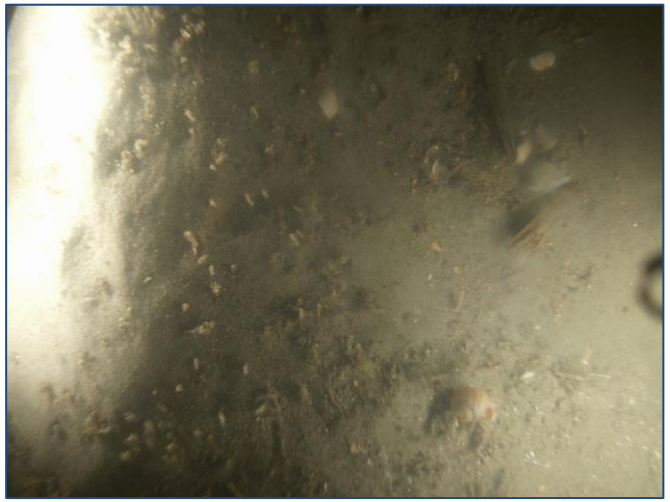
Faunal Description: *Cylista* sp.; *Decapoda; Lanice conchilega*; *Liocarcinus sp.*

Fix: 81 E: 718972.4 N: 5956102.6 Depth: 24 m

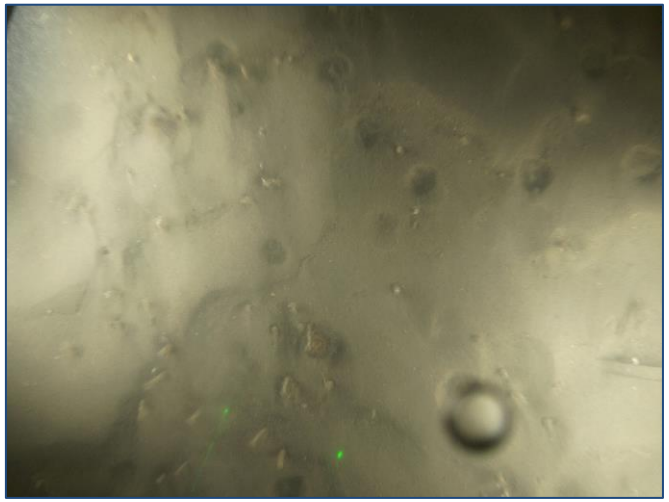
Fix: 81 E: 718972.4 N: 5956102.6 Depth: 24 m

Station: ENV15
Sample: MACA

Sediment Description: Gravelly sand (gS)
Faunal Description: No visible fauna



Fix: 681 E: 719078.7 N: 5955632.9 Depth: 25.4 m



Fix: 695 E: 719150.7 N: 5955577 Depth: 25.4 m

Area: N04A - N05A Pipeline

Station: ENV16

Image 1: MARDUT1021_ENV_16_2021_11_09_060857

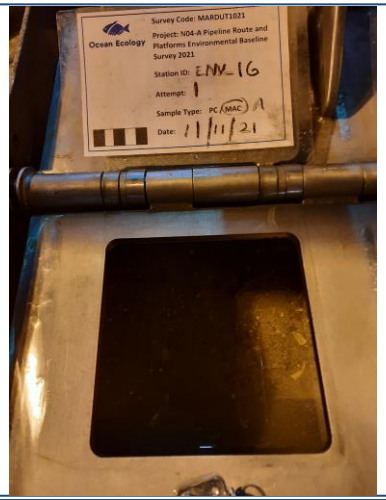
Sediment Description: Fine sand with ripples, small shell fragments and Lanice tubes

Faunal Description: *Lanice conchilega*; Paguroidea

Image 2: MARDUT1021_ENV_16_2021_11_09_061508

Sediment Description: Fine sand with ripples, small shell fragments and Lanice tubes

Faunal Description: Cylista sp.; *Lanice conchilega*

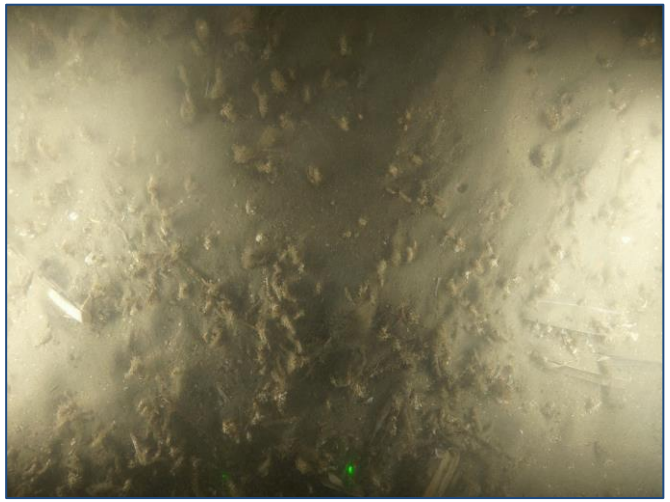


Fix: 79 E: 719124.7 N: 5955602.3 Depth: 21 m

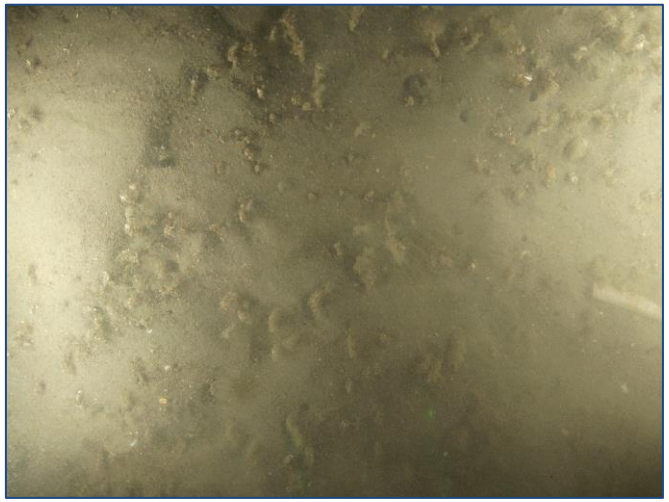
Fix: 79 E: 719124.7 N: 5955602.3 Depth: 21 m

Station: ENV16
Sample: MACA

Sediment Description: Gravelly sand (gS)
Faunal Description: No visible fauna



Fix: 314 E: 719264.4 N: 5955156.3 Depth: 26.1 m



Fix: 708 E: 719240.3 N: 5955122 Depth: 26.0 m

Area: N04A - N05A Pipeline

Station: ENV17

Image 1: MARDUT1021_ENV_17_2021_11_06_004557

Sediment Description: Fine sand with ripples, small shell fragments and Lanice tubes

Faunal Description: Actiniaria; *Lanice conchilega*

Image 2: MARDUT1021_ENV_17(2)_2021_11_09_063843

Sediment Description: Fine sand with ripples, small shell fragments and Lanice tubes

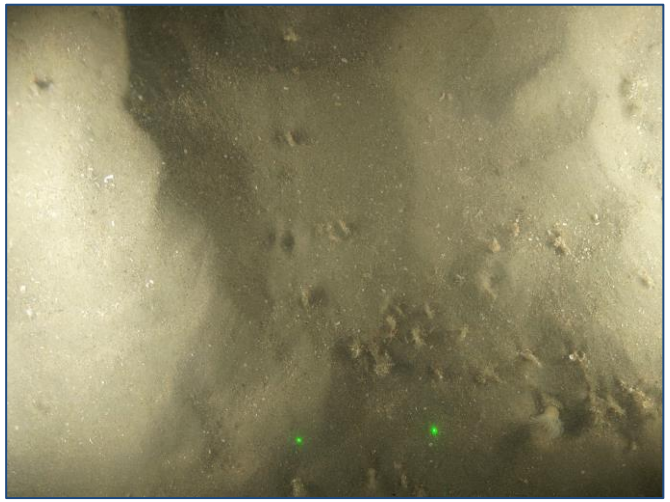
Faunal Description: *Cylista* sp.; *Lanice conchilega*

Fix: 76 E: 719238.4 N: 5955118.6 Depth: 22.4 m

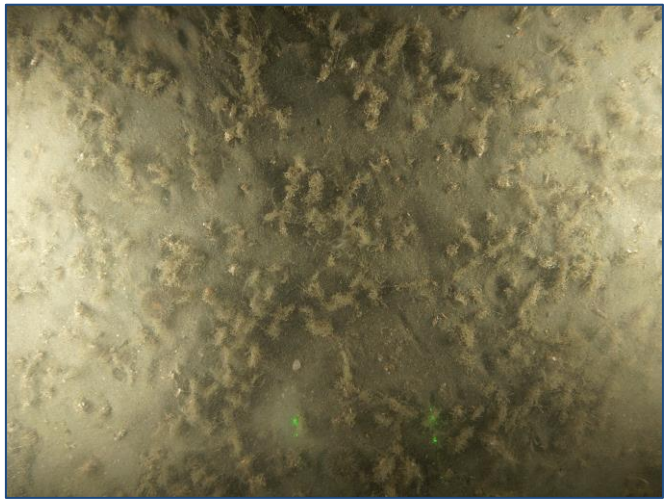
Fix: 76 E: 719238.4 N: 5955118.6 Depth: 22.4 m

Station: ENV17
Sample: MACA

Sediment Description: Sandy mud (sM)
Faunal Description: *Lanice conchilega*; Polychaetae



Fix: 260 E: 719357 N: 5954609.6 Depth: 26.5 m



Fix: 289 E: 719369 N: 5954630.2 Depth: 26.6 m

Area: N04A - N05A Pipeline

Station: ENV18

Image 1: MARDUT1021_ENV_18_2021_11_05_230700

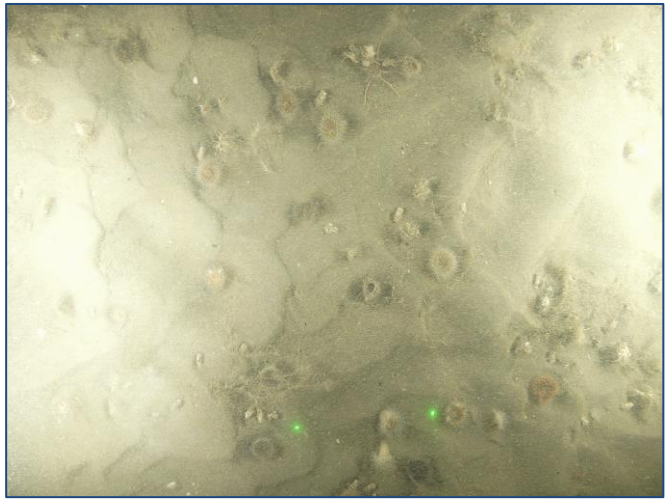
Sediment Description: Fine sand with ripples, small shell fragments and Lanice tubes

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

Image 2: MARDUT1021_ENV_18(2)_2021_11_05_235856

Sediment Description: Fine sand with ripples, small shell fragments and Lanice tubes

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



Fix: 306 E: 719349.6 N: 5954584.5 Depth: 26.2 m

Fix: 75 E: 719376.2 N: 5954640.1 Depth: 24.0 m

Area: N04A - N05A Pipeline

Station: ENV18

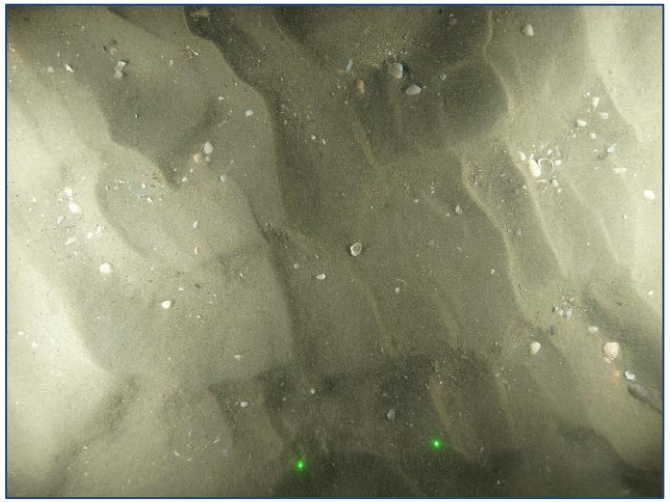
Image 3: MARDUT1021_ENV_18(2)_2021_11_06_000708

Sediment Description: Fine sand with ripples, small shell fragments and Lanice tubes

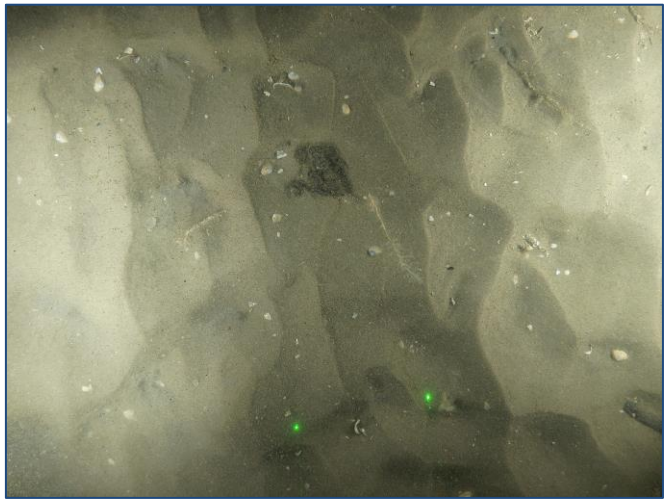
Faunal Description: *Cylista* sp.; *Lanice conchilega*; Opiuroidea

Sample: MACB

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



Fix: 223 E: 719521.4 N: 5954136.7 Depth: 25.4 m



Fix: 230 E: 719485.7 N: 5954139 Depth: 25.2 m

Area: N04A - N05A Pipeline

Station: ENV19

Image 1: MARDUT1021_ENV_19_2021_11_05_222256

Sediment Description: Fine sand with ripples and small shell fragments

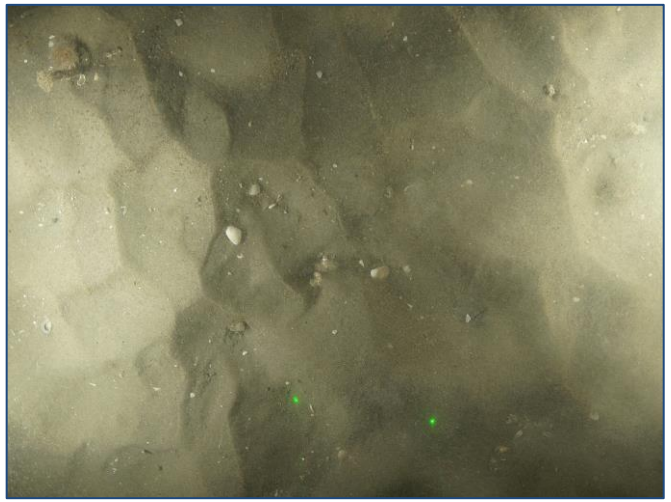
Faunal Description: Actinopterygii

Image 2: MARDUT1021_ENV_19_2021_11_05_222517

Sediment Description: Fine sand with ripples and small shell fragments

Faunal Description: Hydrozoa; *Lanice conchilega*

Fix: 236 E: 719457.6 N: 5954138.6 Depth: 24.8 m



Fix: 248 E: 719404 N: 5954146.1 Depth: 24.9 m

Area: N04A - N05A Pipeline

Station: ENV19

Image 3: MARDUT1021_ENV_19_2021_11_05_222716

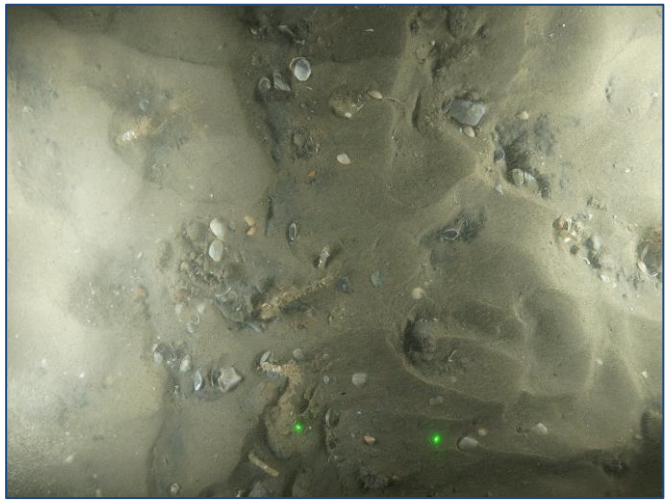
Sediment Description: Fine sand with ripples and small shell fragments

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

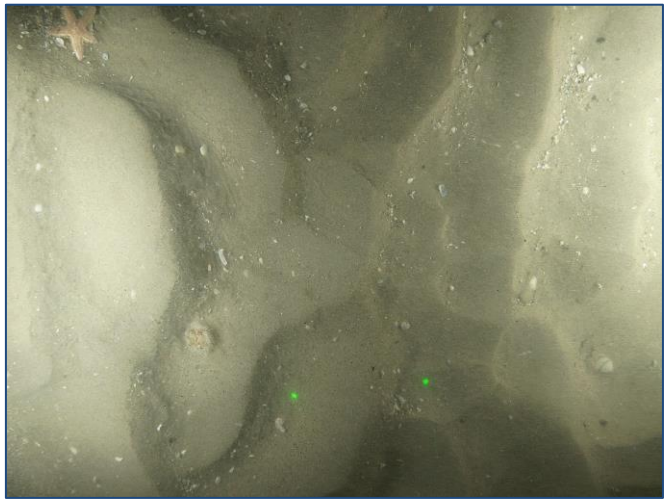
Image 4: MARDUT1021_ENV_19_2021_11_05_223043

Sediment Description: Fine sand with ripples and small shell fragments

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



Fix: 203 E: 719882.2 N: 5953812.4 Depth: 24.2 m



Fix: 204 E: 719884.7 N: 5953816.2 Depth: 24.3 m

Area: N04A - N05A Pipeline

Station: ENV21

Image 1: MARDUT1021_ENV_21_2021_11_05_214143

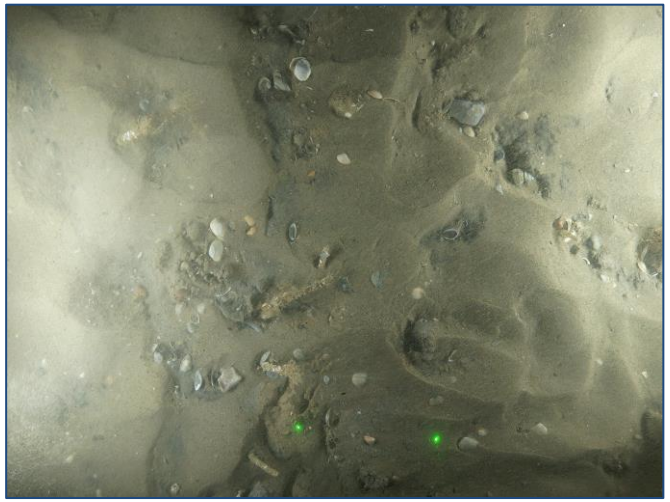
Sediment Description: Fine sand with ripples, pebbles and shell hash

Faunal Description: *Lanice conchilega*; Paguroidea

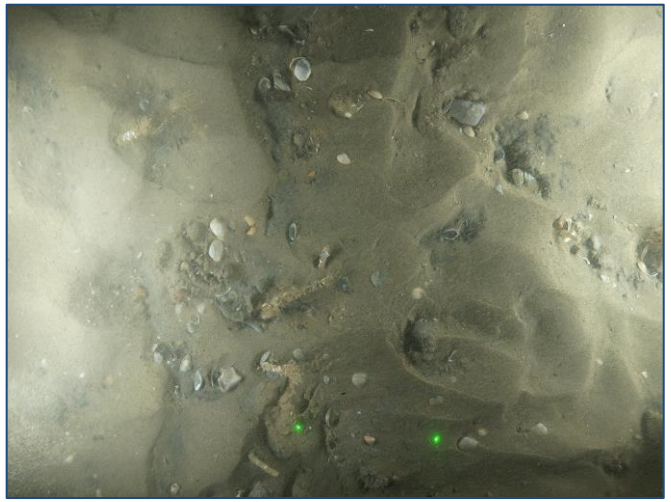
Image 2: MARDUT1021_ENV_21_2021_11_05_214200

Sediment Description: Fine sand with ripples and small shell fragments

Faunal Description: *Astropecten irregularis*; *Cylista* sp.



Fix: 211 E: 719917.2 N: 5953852.6 Depth: 24.7 m



Fix: 214 E: 719928.4 N: 5953862.7 Depth: 24.8 m

Area: N04A - N05A Pipeline

Station: ENV21

Image 3: MARDUT1021_ENV_21_2021_11_05_214459

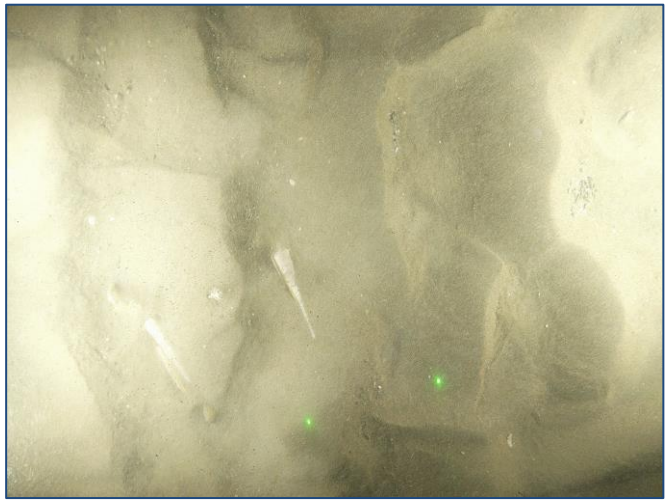
Sediment Description: Fine sand with ripples and small shell fragments

Faunal Description: Paguroidea

Image 4: MARDUT1021_ENV_21_2021_11_05_214617

Sediment Description: Fine sand with ripples and small shell fragments

Faunal Description: *Cylista* sp.



Fix: 169 E: 720087.4 N: 5953353 Depth: 23.0 m

Fix: 196 E: 720137.9 N: 5953443.8 Depth: 23.4 m

Area: N04A - N05A Pipeline

Station: ENV22

Image 1: MARDUT1021_ENV_22_2021_11_05_210605

Sediment Description: Fine sand with ripples and small shell fragments

Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_22_2021_11_05_211326

Sediment Description: Fine sand with ripples and small shell fragments

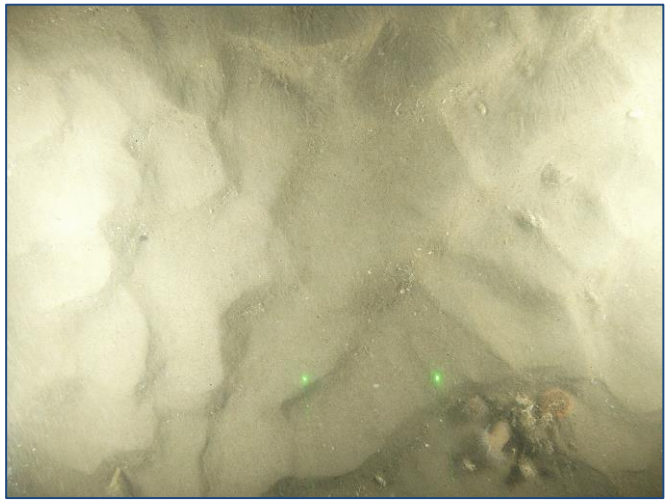
Faunal Description: *Cylista* sp.

Fix: 67 E: 720110.2 N: 5953388.9 Depth: 23.4 m

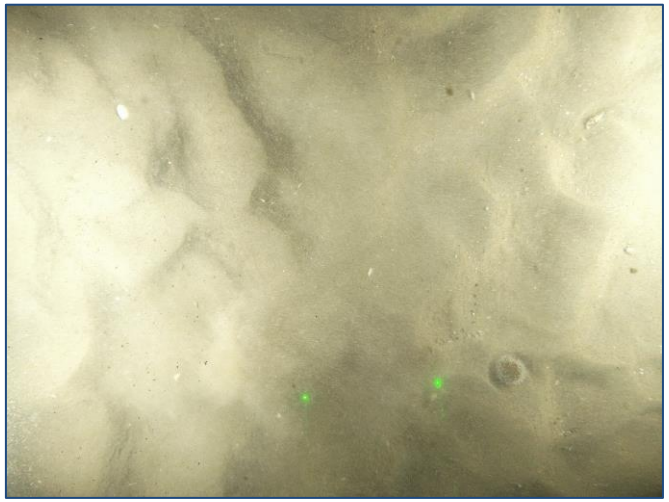
Fix: 67 E: 720110.2 N: 5953388.9 Depth: 23.4 m

Station: ENV22
Sample: MACA

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



Fix: 147 E: 720596.3 N: 5953217.1 Depth: 22.8 m



Fix: 165 E: 720609.4 N: 5953321.4 Depth: 23.4 m

Area: N04A - N05A Pipeline

Station: ENV23

Image 1: MARDUT1021_ENV_23_2021_11_05_202222

Sediment Description: Fine sand with ripples and small shell fragments

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

Image 2: MARDUT1021_ENV_23_2021_11_05_202912

Sediment Description: Fine sand with ripples and small shell fragments

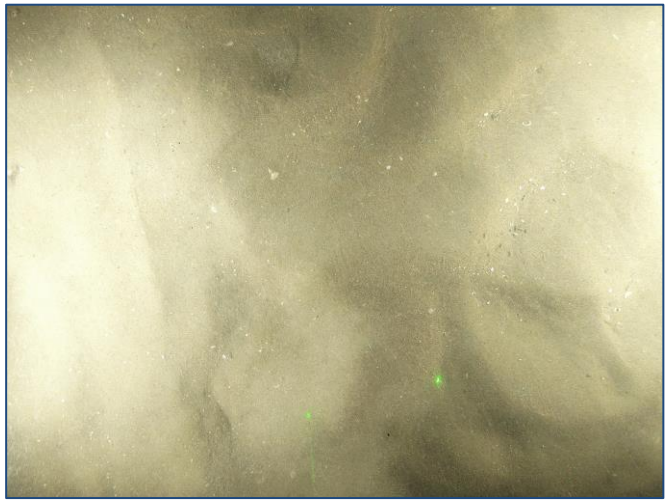
Faunal Description: *Cylista* sp.

Fix: 65 E: 720599.3 N: 5953245.5 Depth: 24.0 m

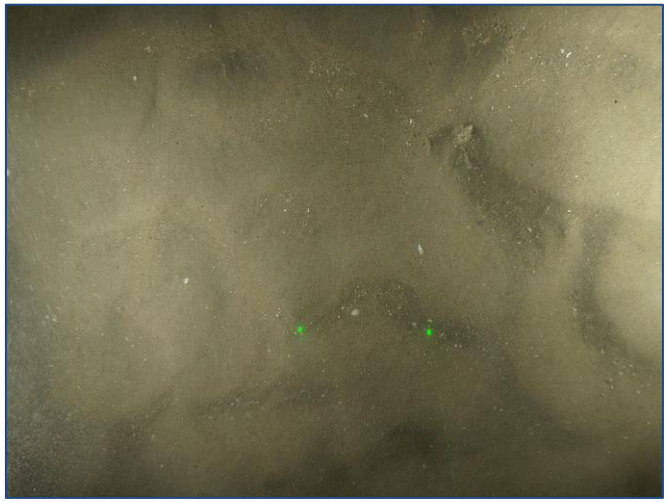
Fix: 65 E: 720599.3 N: 5953245.5 Depth: 24.0 m

Station: ENV23
Sample: MACA

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



Fix: 125 E: 721086.2 N: 5953247.5 Depth: 23.4 m



Fix: 133 E: 721067 N: 5953286.1 Depth: 23.5 m

Area: N04A - N05A Pipeline

Station: ENV24

Image 1: MARDUT1021_ENV_24_2021_11_05_191818

Sediment Description: Fine sand with ripples and small shell fragments

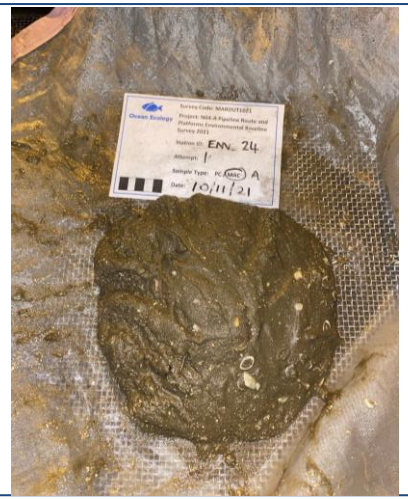
Faunal Description: *Lanice conchilega*

Image 2: MARDUT1021_ENV_24_2021_11_05_192156

Sediment Description: Fine sand with ripples and small shell fragments

Faunal Description: *Lanice conchilega*

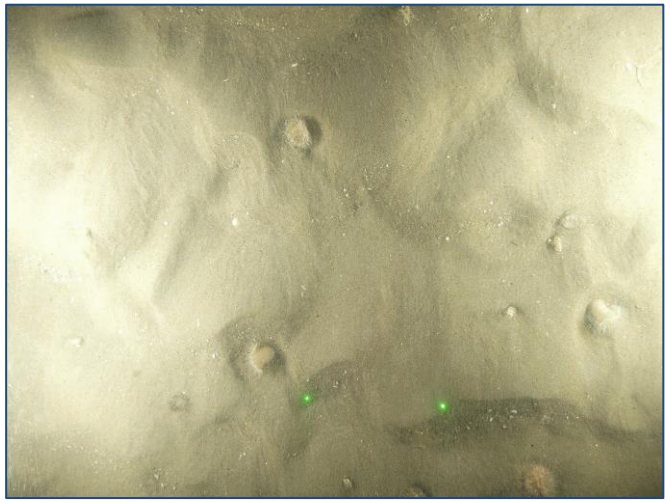
Fix: 63 E: 721060.1 N: 5953287.8 Depth: 23.6 m



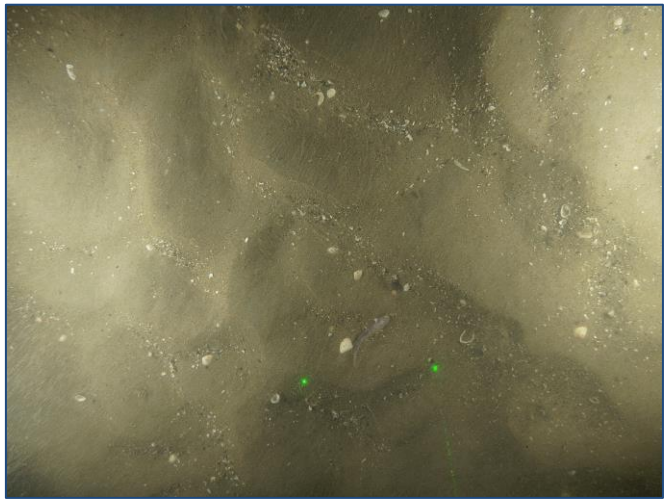
Fix: 63 E: 721060.1 N: 5953287.8 Depth: 23.6 m

Station: ENV24
Sample: MACA

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



Fix: 101 E: 721477.6 N: 5953429.8 Depth: 24.4 m



Fix: 111 E: 721450.4 N: 5953465.9 Depth: 24.6 m

Area: N04A - N05A Pipeline

Station: ENV25

Image 1: MARDUT1021_ENV_25_2021_11_05_183230

Sediment Description: Rippled sand with few small shell fragments

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

Image 2: MARDUT1021_ENV_25_2021_11_05_183652

Sediment Description: Rippled sand with few small shell fragments

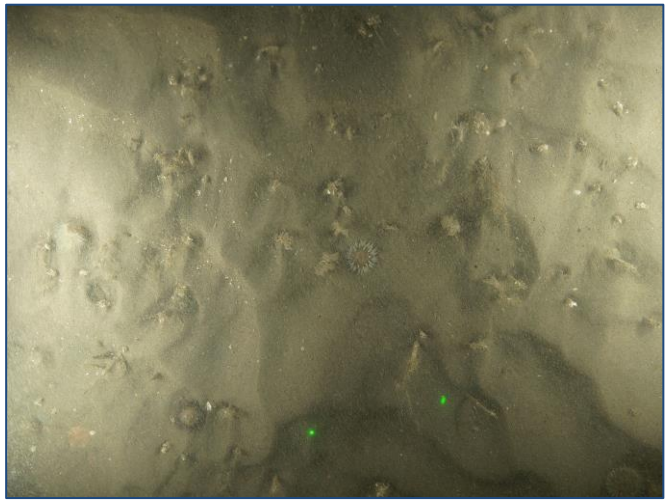
Faunal Description: Actinopterygii

Fix: 7 E: 721454.2 N: 5953466.5 Depth: 24 m

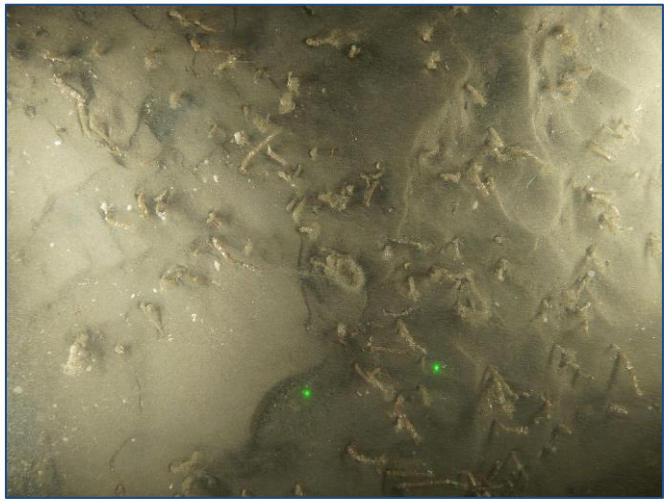
Fix: 7 E: 721454.2 N: 5953466.5 Depth: 24 m

Station: ENV25
Sample: MACA

Sediment Description: Muddy sandy gravel (msG)
Faunal Description: No visible fauna



Fix: 71 E: 721859.6 N: 5953724.6 Depth: 25.8 m



Fix: 84 E: 721881.8 N: 5953779.1 Depth: 25.5 m

Area: N05A Platform Area

Station: ENV 26

Image 1: MARDUT1021_ENV_26_2021_11_05_174350

Sediment Description: Rippled sand with few small shell fragments

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

Image 2: MARDUT1021_ENV_26_2021_11_05_174846

Sediment Description: Rippled sand with few small shell fragments.

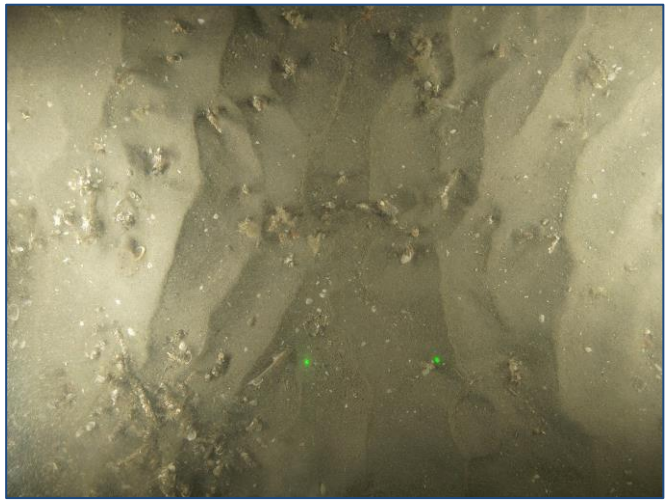
Faunal Description: *Cylista* sp.; *Lanice conchilega.*

Fix: 9 E: 721881.4 N: 5953777.6 Depth: 25 m

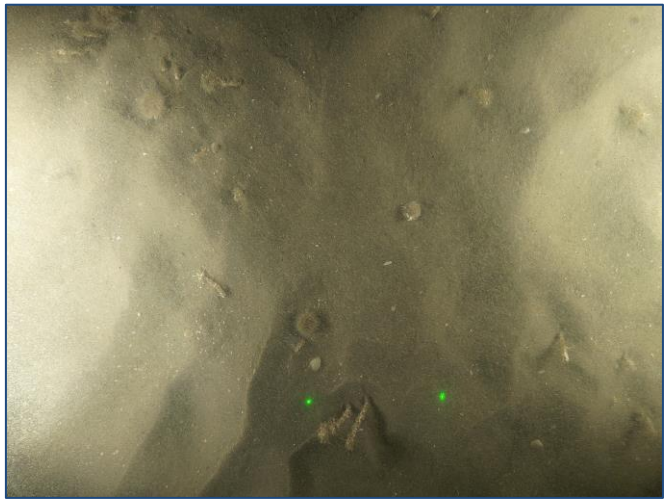
Fix: 9 E: 721881.4 N: 5953777.6 Depth: 25 m

Station: ENV26
Sample: MACA

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



Fix: 51 E: 722112.3 N: 5953827.8 Depth: 24.7 m



Fix: 59 E: 722124.5 N: 5953852.6 Depth: 24.8 m

Area: N05A Platform Area

Station: ENV 27

Image 1: MARDUT1021_ENV_27_2021_11_05_165259

Sediment Description: Rippled sand with scattered shell fragments

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

Image 2: MARDUT1021_ENV_27_2021_11_05_165509

Sediment Description: Rippled sand with shell fragments

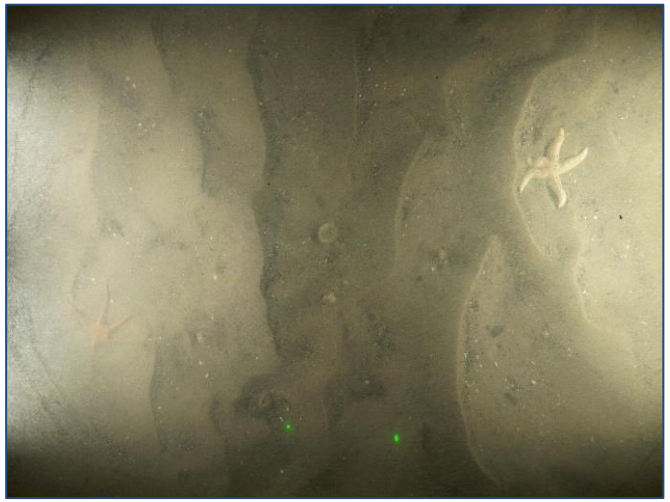
Faunal Description: *Cylista* sp.; *Lanice conchilega*.

Fix: 11 E: 722127.5 N: 5953845.1 Depth: 25 m

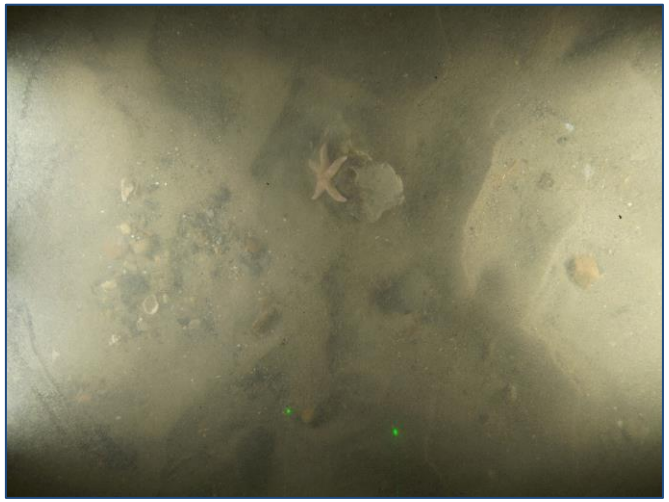
Fix: 11 E: 722127.5 N: 5953845.1 Depth: 25 m

Station: ENV27
Sample: MACA

Sediment Description: Sandy Gravelly Mud (sgM)
Faunal Description: *Lanice conchilega,* Polychaeta, Spatangoida



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



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

Area: N05A - Riffgat OWF

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

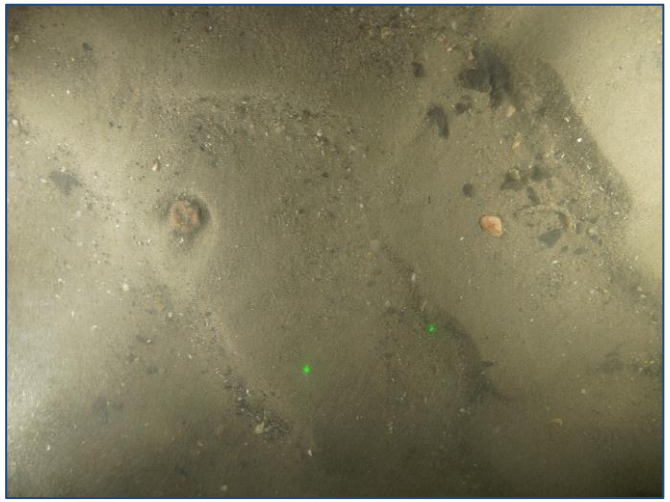
Faunal Description: *Asterias rubens*; *Lanice conchilega*; Ophiuroidea

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

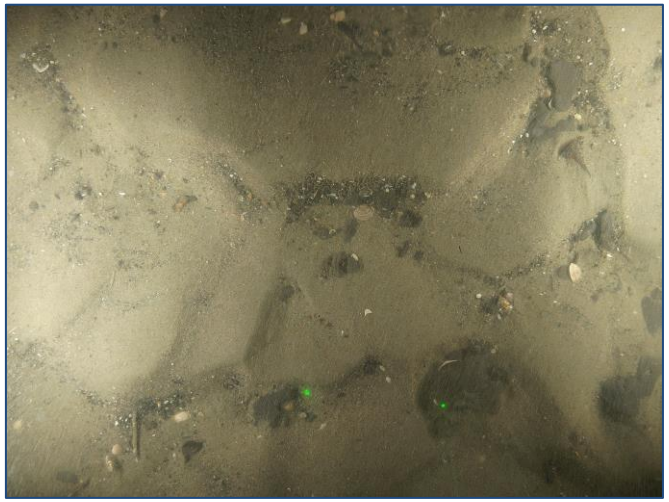
Fix: 96 E: 725293.1 N: 5953418.8 Depth: 23.6 m

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

Area: N05A - Riffgat OWF

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

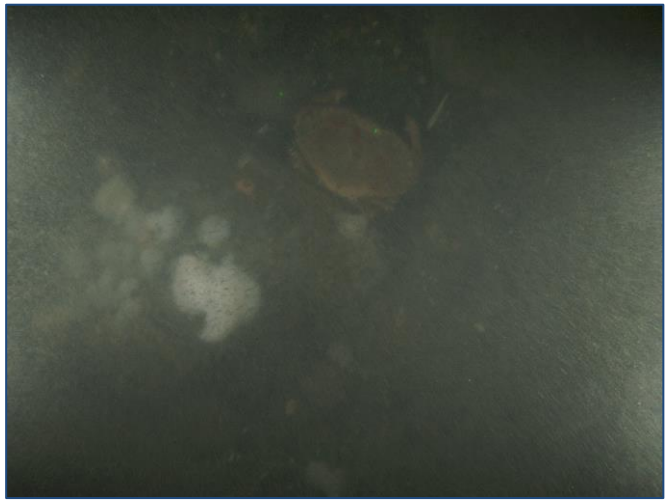
Faunal Description: Actinopterygii; *Lanice conchilega*

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

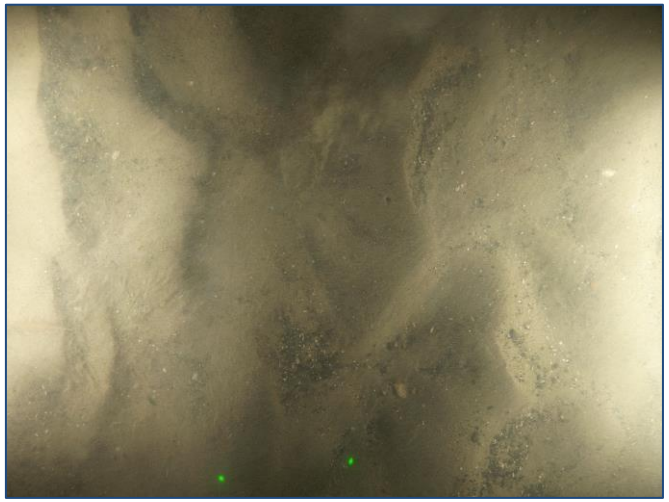
Fix: 14 E: 722697.9 N: 5953622.6 Depth: 23.9 m

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

Area: N05A - Riffgat OWF

Station: ENV 29

Image 1: MARDUT1021_ENV_29_2021_11_09_145252

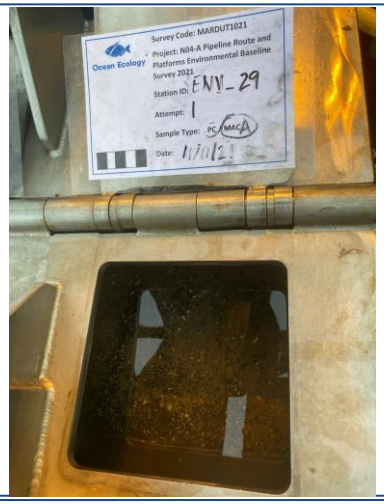
Sediment Description: Coarse sand with boulder

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

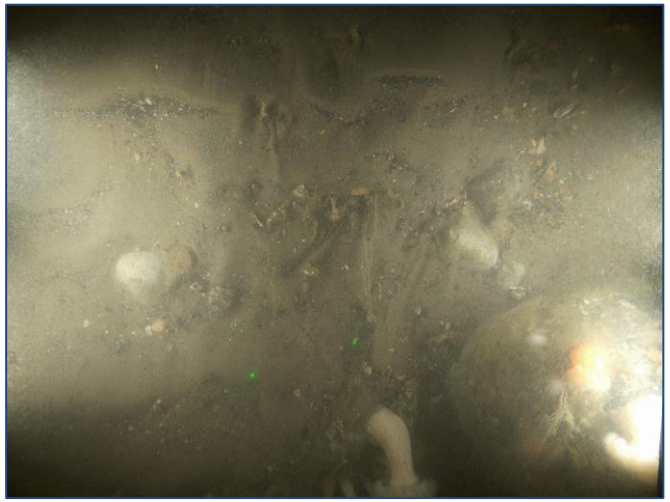


Fix: 55 E: 723746.6 N: 5953720.2 Depth: 21.5 m

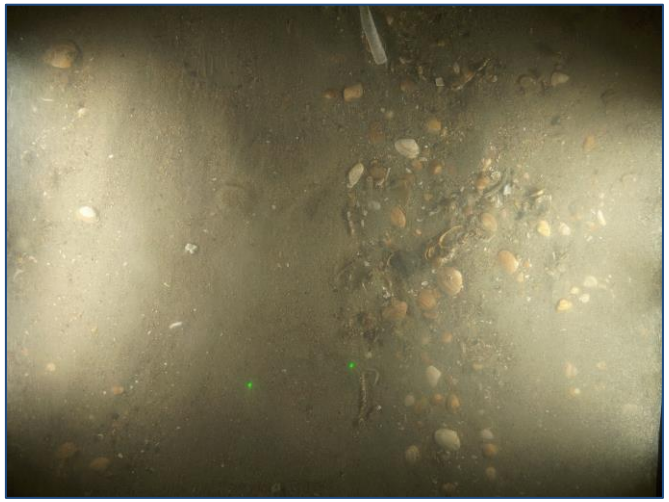
Fix: 55 E: 723746.6 N: 5953720.2 Depth: 21.5 m

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

Area: N05A - Riffgat OWF

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

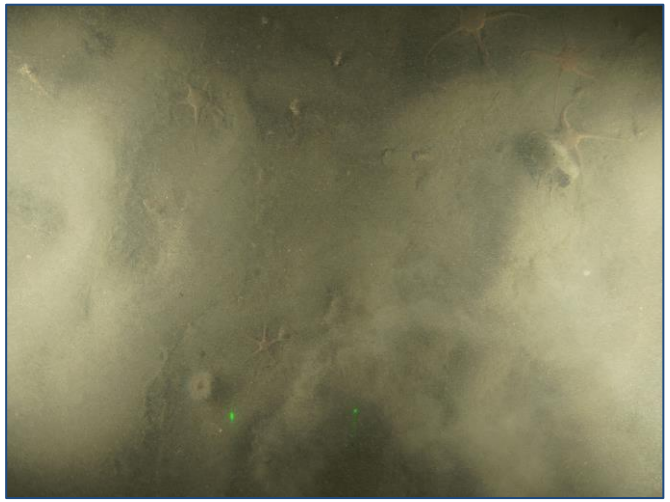
Faunal Description: *Cylista* sp.; Hydrozoa; *Lanice conchilega*

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

Area: N05A - Riffgat OWF

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

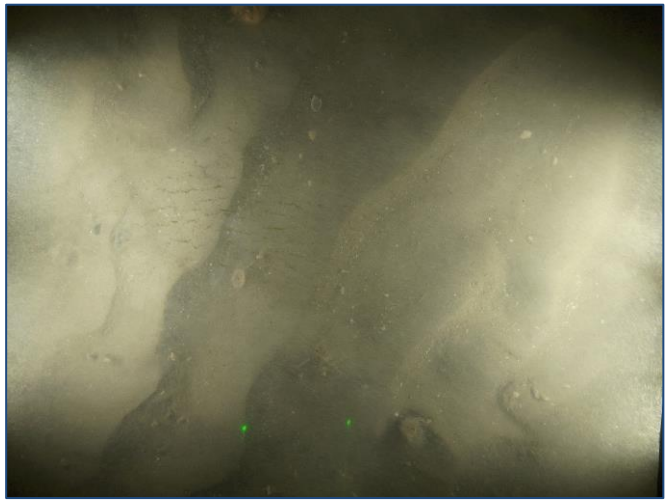
Faunal Description: Cylista sp.; *Lanice conchilega*; *Ophiura albida*; *Ophiura ophiura*

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

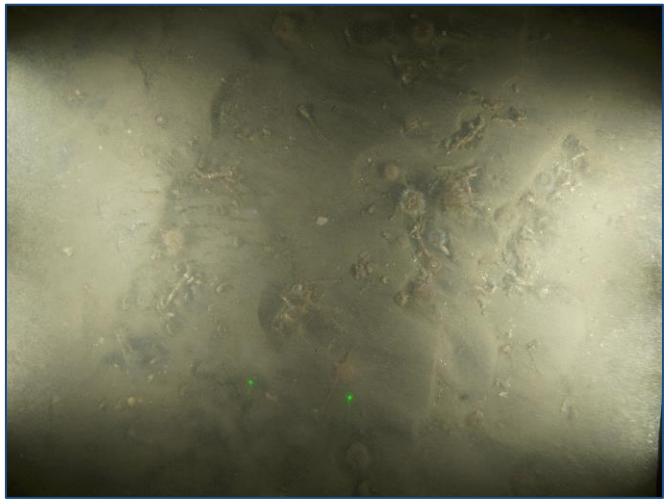
Fix: 57 E: 723783 N: 5953010.6 Depth: 26.0 m

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

Area: N05A - Riffgat OWF

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

Area: N05A - Riffgat OWF

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

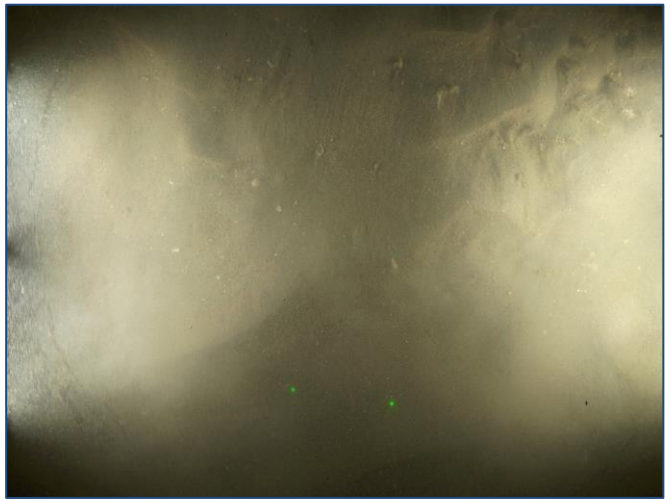
Sediment Description: Coarse sand with scattered shell fragments and cobbles
Faunal Description: Asteroidea; Caridea; *Cylista* sp.; Hydrozoa; *Lanice conchilega*; *Metridium dianthus*; Paguroidea; Plumulariidae

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

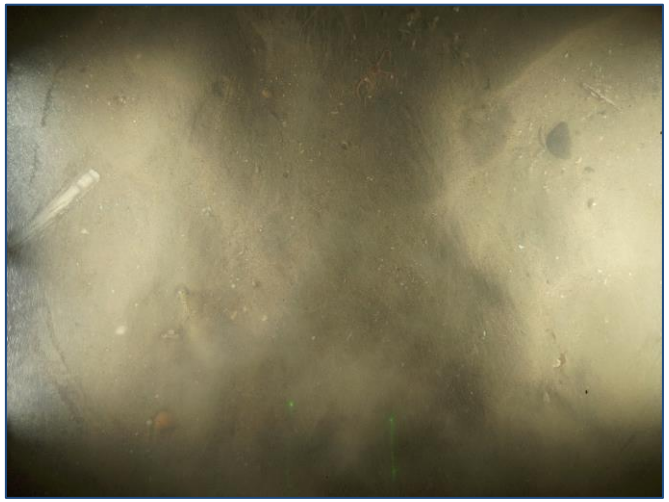
Fix: 45 E: 724760.2 N: 5953172.7 Depth: 23.6 m

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

Area: N05A - Riffgat OWF

Station: ENV 34

Image 1: MARDUT1021_ENV_34_2021_11_09_203614

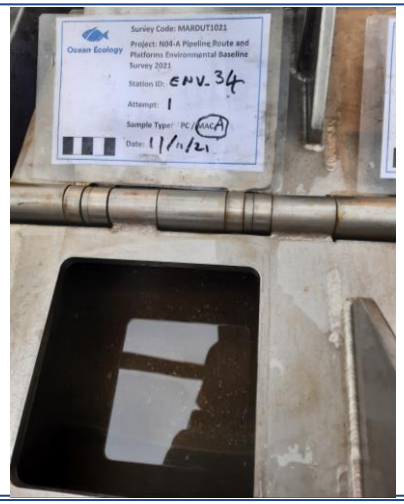
Sediment Description: Rippled coarse sand with shell fragments

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*

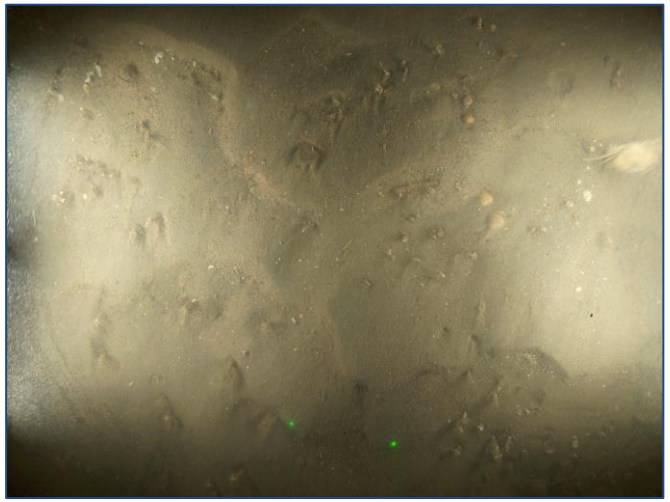


Fix: 36 E: 725296.8 N: 5953208.2 Depth: 24.2 m

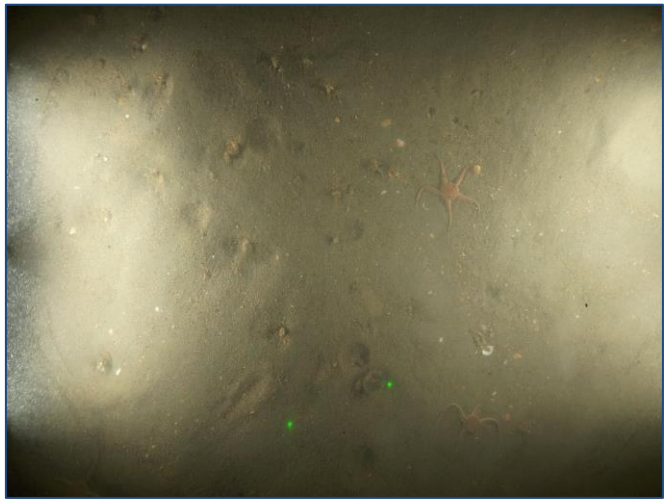
Fix: 36 E: 725296.8 N: 5953208.2 Depth: 24.2 m

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

Area: N05A - Riffgat OWF

Station: ENV 35

Image 1: MARDUT1021_ENV_35_2021_11_09_213732

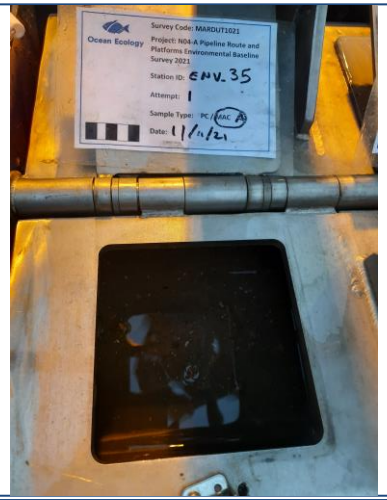
Sediment Description: Rippled coarse sand with shell fragments

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

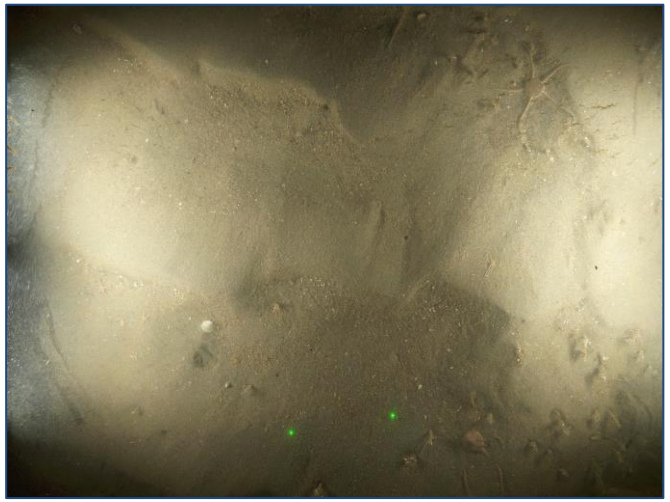


Fix: 33 E: 725803.4 N: 5953205.6 Depth: 23.9 m

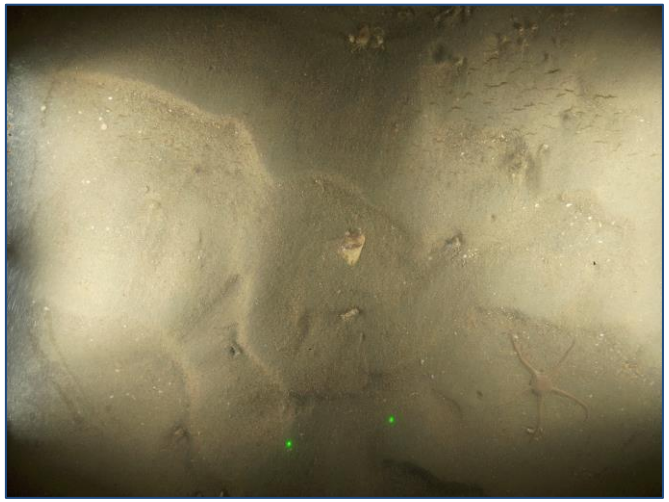
Fix: 33 E: 725803.4 N: 5953205.6 Depth: 23.9 m

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

Area: N05A - Riffgat OWF

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

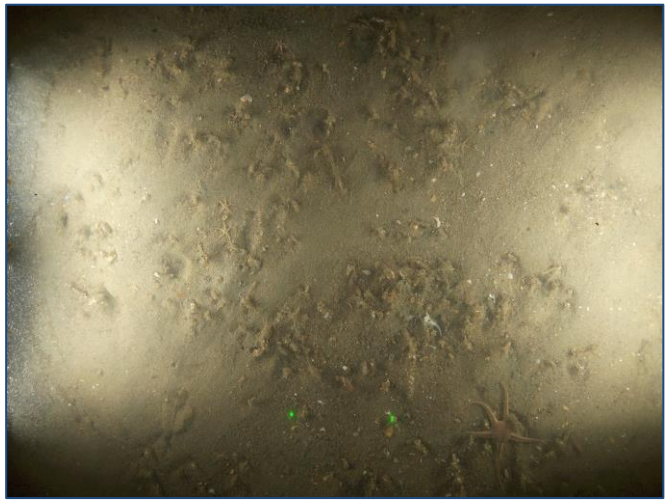
Faunal Description: Actinopterygii; *Lanice conchilega*; *Ophiura ophiura*; Portunidae

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

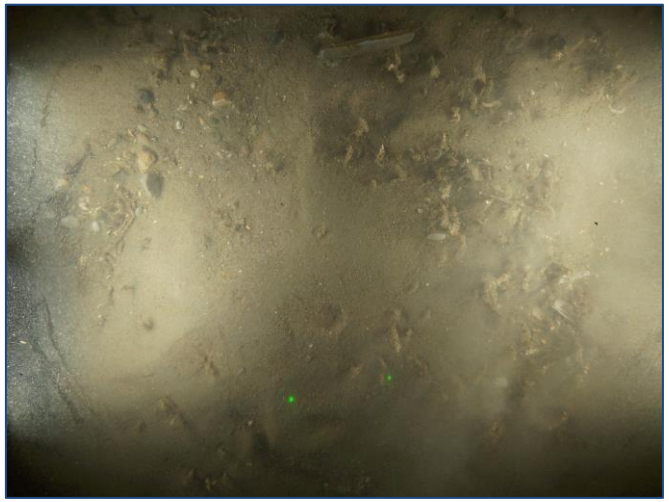
Fix: 24 E: 726360.2 N: 5953211.9 Depth: 22.8 m

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

Area: N05A - Riffgat OWF

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

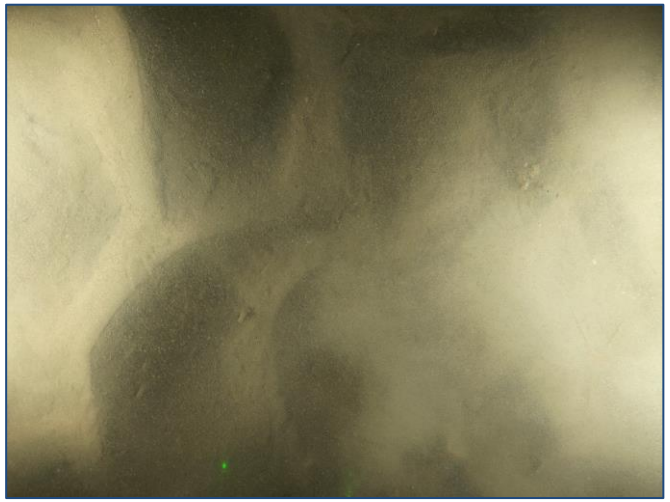
Faunal Description: *Cylista* sp.; *Lanice conchilega*

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

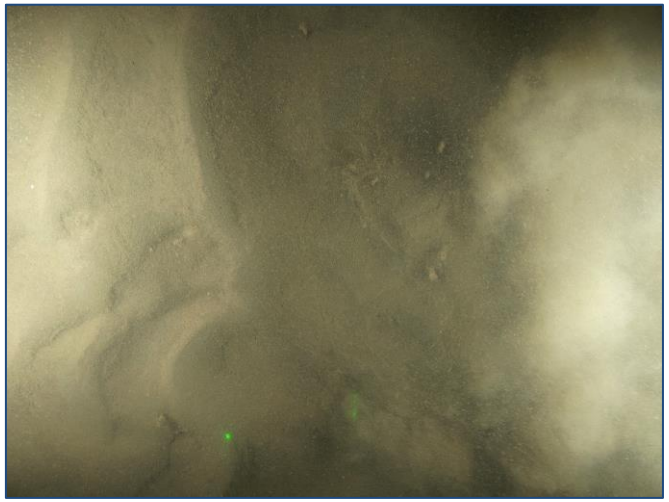
Fix: 19 E: 726717.6 N: 5953462.7 Depth: 24.9 m

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

Area: N05A - Riffgat OWF

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

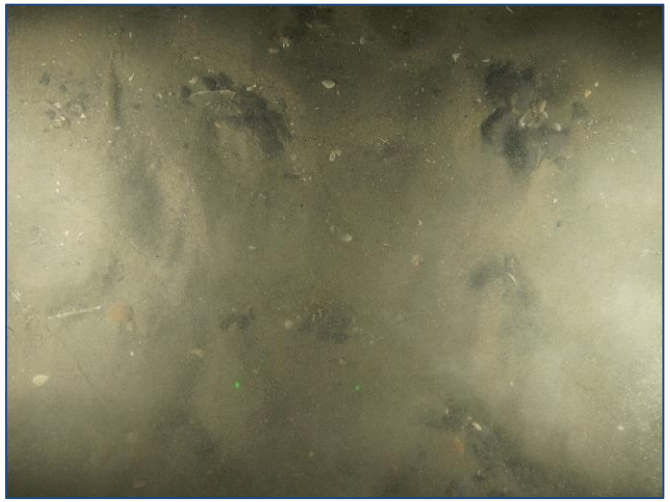
Faunal Description: *Lanice conchilega*

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

Area: N05A - Riffgat OWF

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

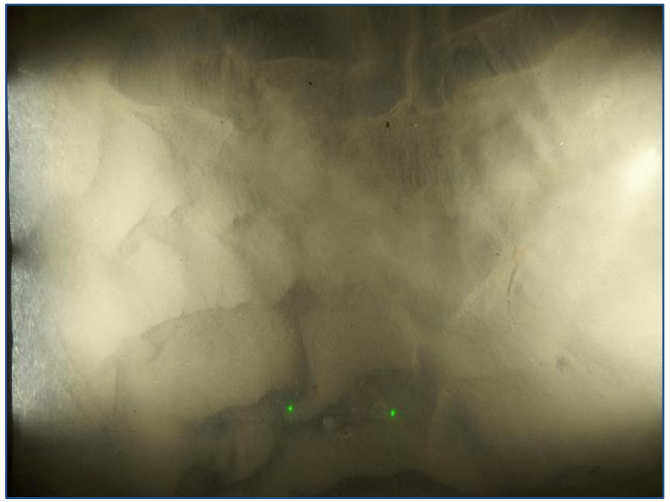
Faunal Description: *Astropecten irregularis*; *Cylista* sp.; *Lanice conchilega*; *Ophiura albida*

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

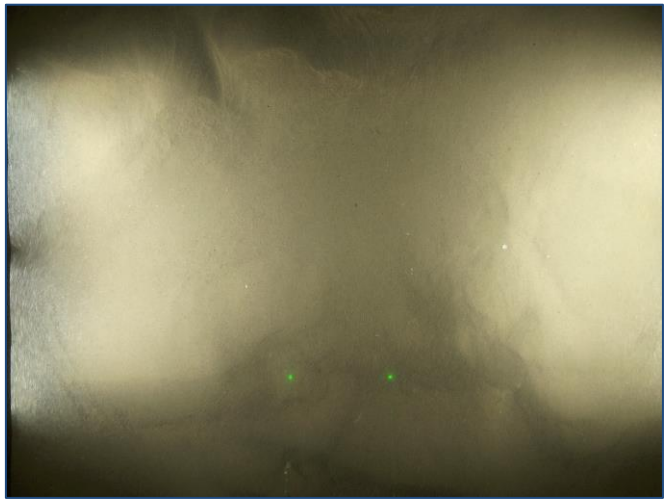
Fix: 61 E: 722977.2 N: 5953224.4 Depth: 23.6 m

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

Area: N05A - Riffgat OWF

Station: ENV 40

Image 1: MARDUT1021_ENV_40_2021_11_09_173349

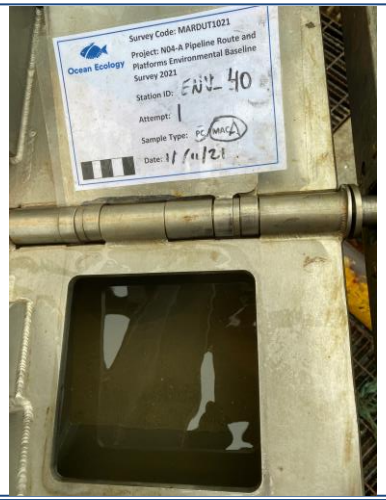
Sediment Description: Rippled sand with rare shell fragments

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*

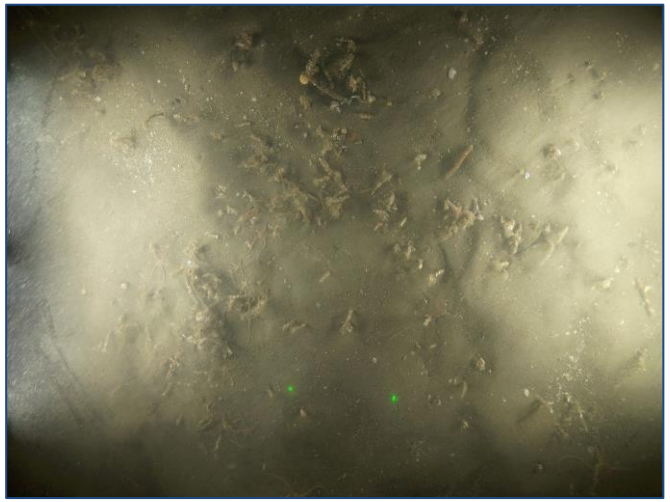


Fix: 51 E: 724292.0 N: 5952706.2 Depth: 21.0 m

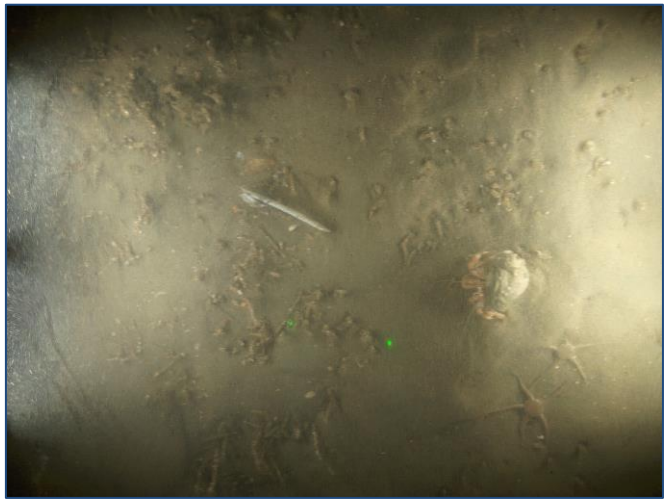
Fix: 51 E: 724292.0 N: 5952706.2 Depth: 21.0 m

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

Area: N05A - Riffgat OWF

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

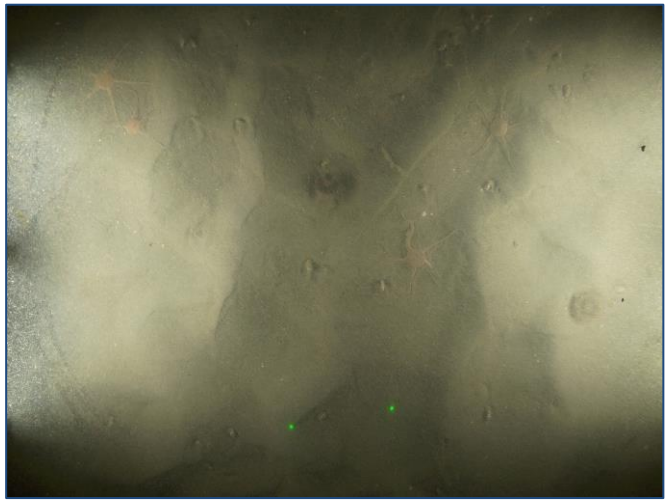
Faunal Description: *Lanice conchilega*; Ophiuroidea; Paguroidea

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

Area: N05A - Riffgat OWF

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

Area: N05A - Riffgat OWF

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

Area: N05A - Riffgat OWF

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

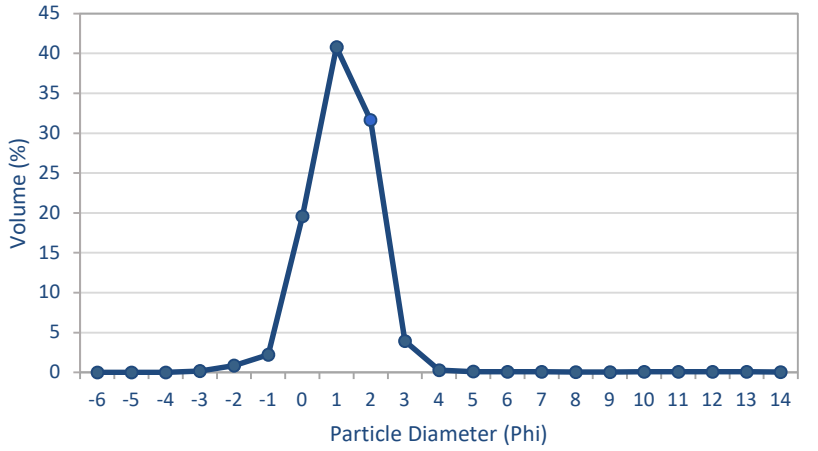
Station: ENV 44
Sample: MACA

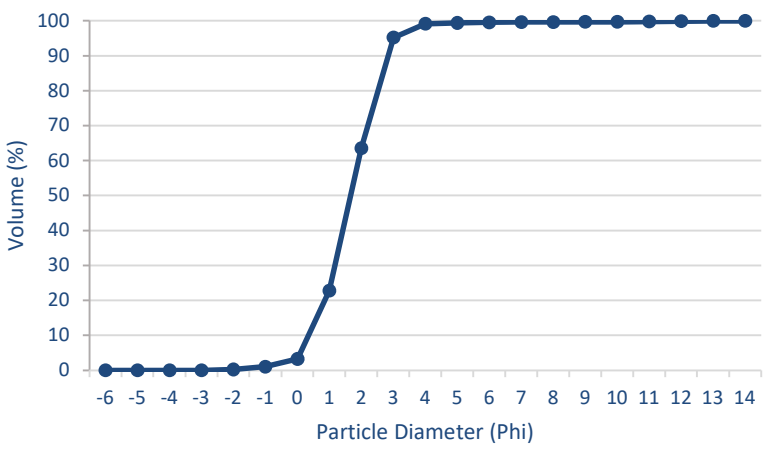
Sediment Description: Sand (S)
Faunal Description: No visible fauna

Appendix E. Particle Size Analysis

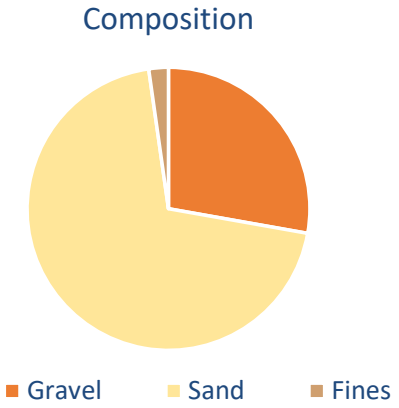
ENV01

N04a Platform Area

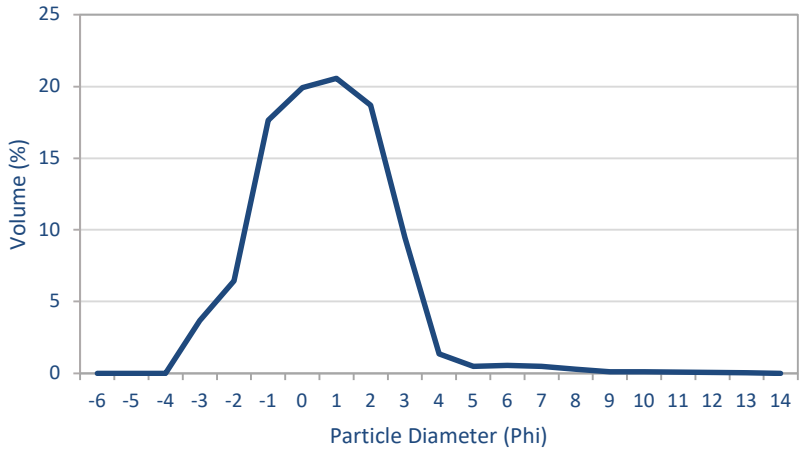


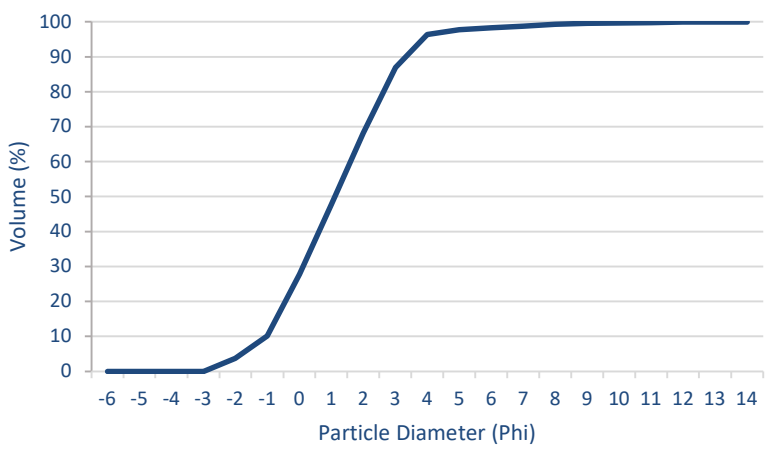


Graphic Folk and Ward	
Mean µm	922.314
Mean phi	0.117
Sorting Coefficient	1.698
Skewness	-0.026
Kurtosis	0.914
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	28%
Sand	70%
Fines	2%

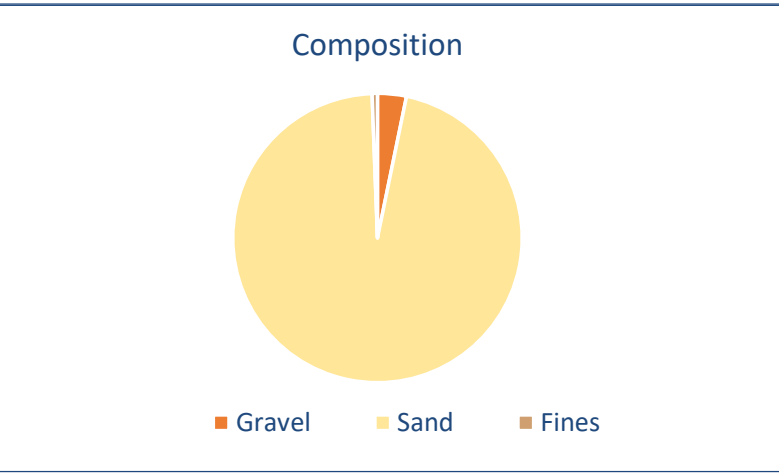


ENV02 **N04a Platform Area**

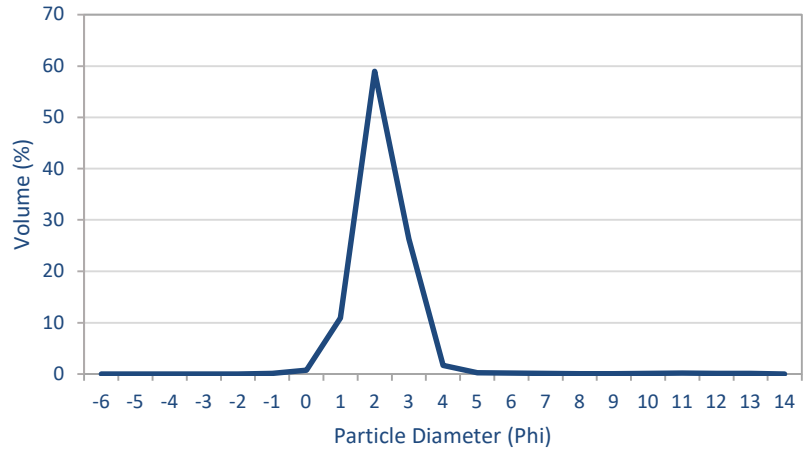


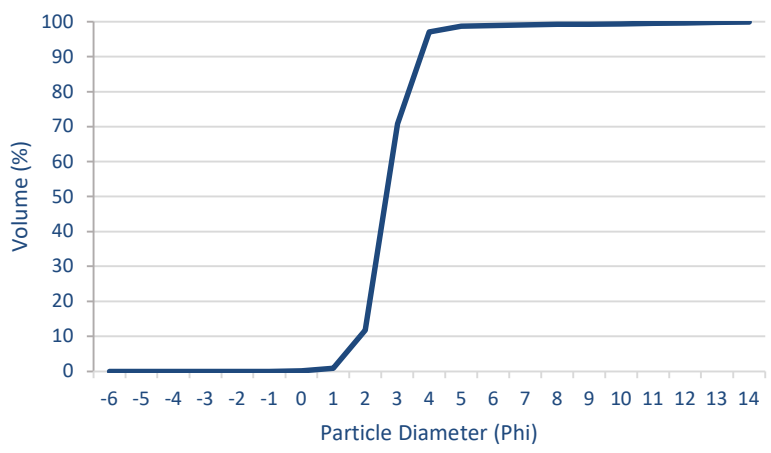


Graphic Folk and Ward	
Mean µm	632.651
Mean phi	0.661
Sorting Coefficient	0.853
Skewness	-0.064
Kurtosis	0.935
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	3%
Sand	96%
Fines	1%

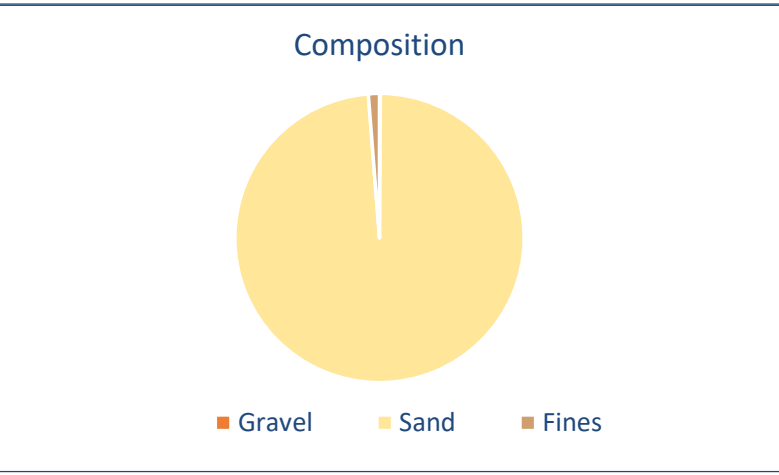


ENV03 **N04a-N05a Pipe Route**

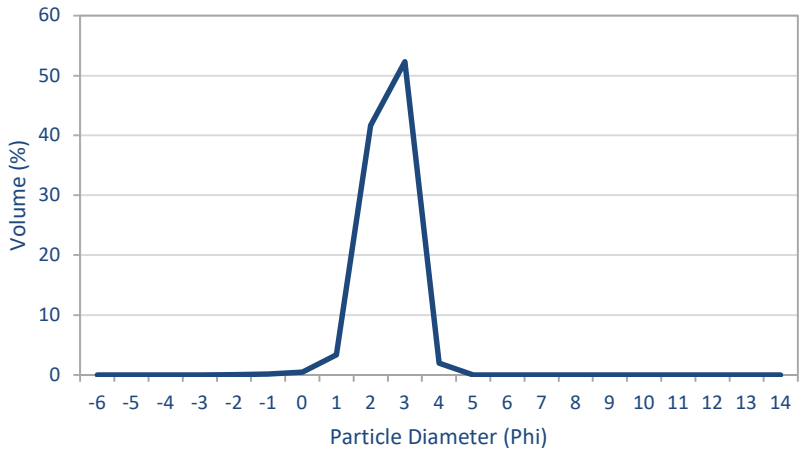


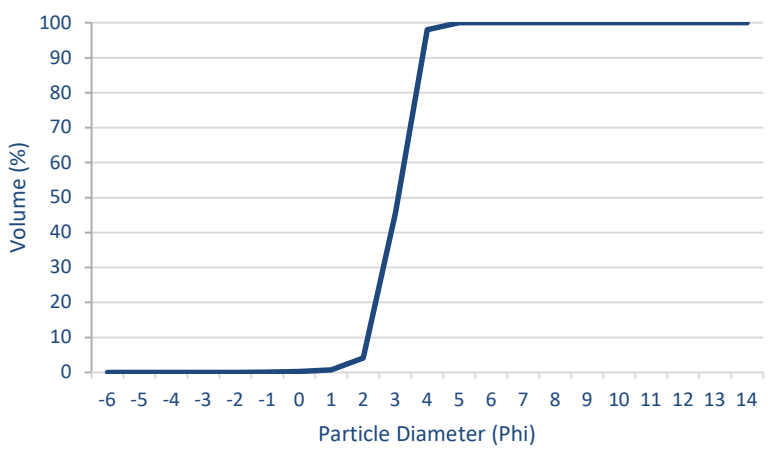


Graphic Folk and Ward	
Mean µm	308.272
Mean phi	1.698
Sorting Coefficient	0.648
Skewness	0.043
Kurtosis	1.058
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	0%
Sand	99%
Fines	1%

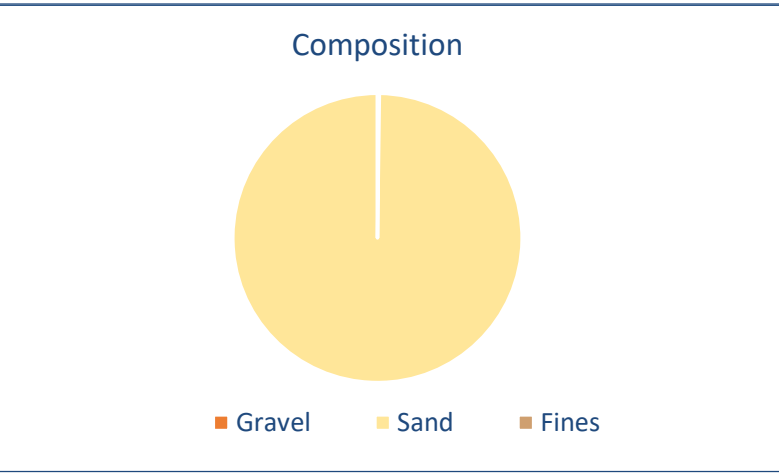


ENV04 **N04a-N05a Pipe Route**



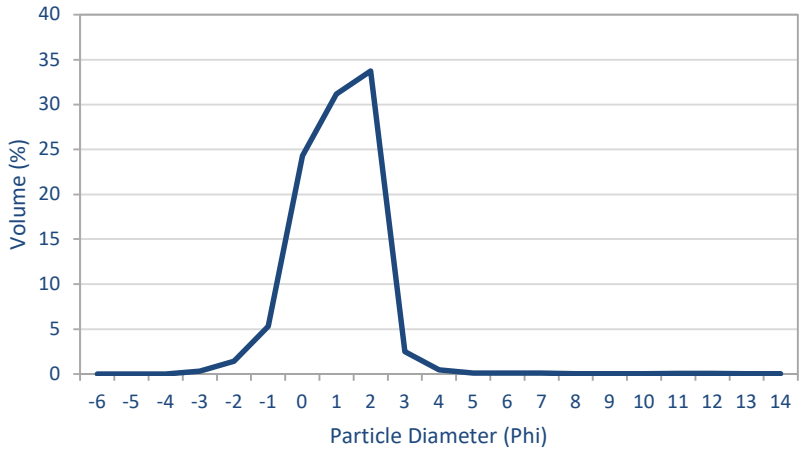


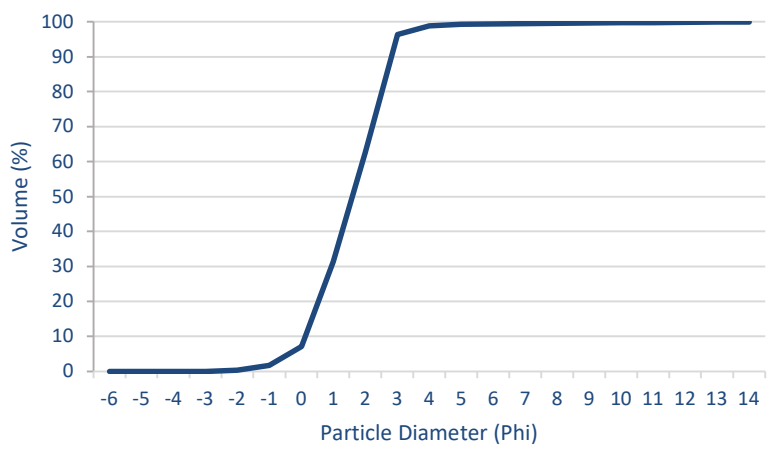
Graphic Folk and Ward	
Mean µm	242.926
Mean phi	2.041
Sorting Coefficient	0.534
Skewness	-0.070
Kurtosis	1.051
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	100%
Fines	0%



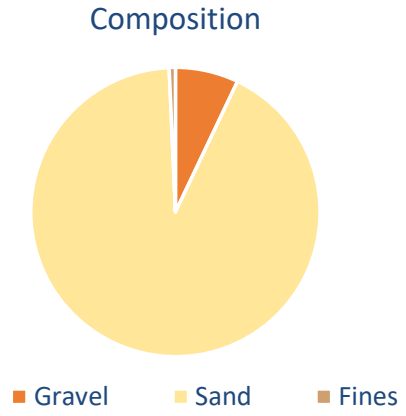
ENV05

N04a-N05a Pipe Route



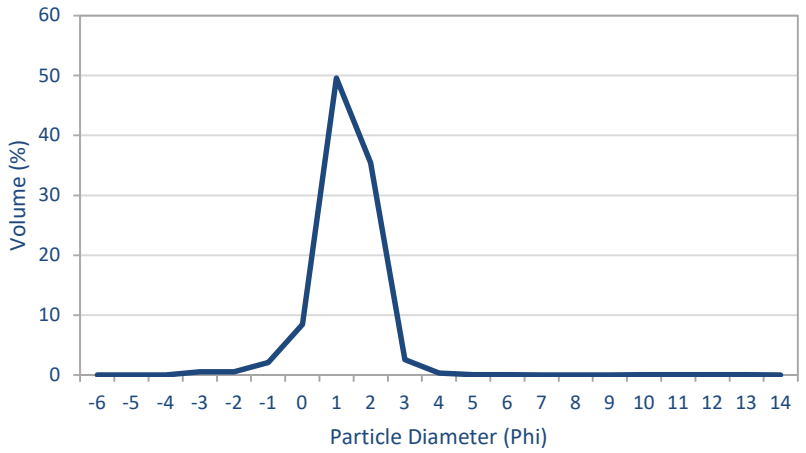


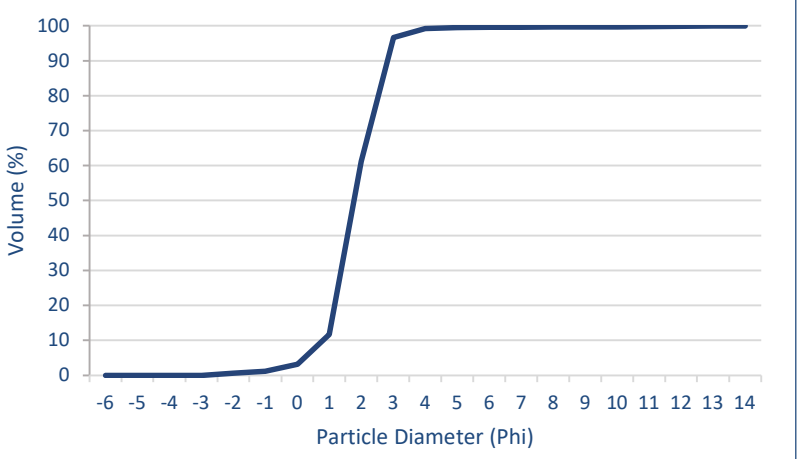
Graphic Folk and Ward	
Mean µm	674.495
Mean phi	0.568
Sorting Coefficient	0.984
Skewness	-0.175
Kurtosis	0.895
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	7%
Sand	92%
Fines	1%



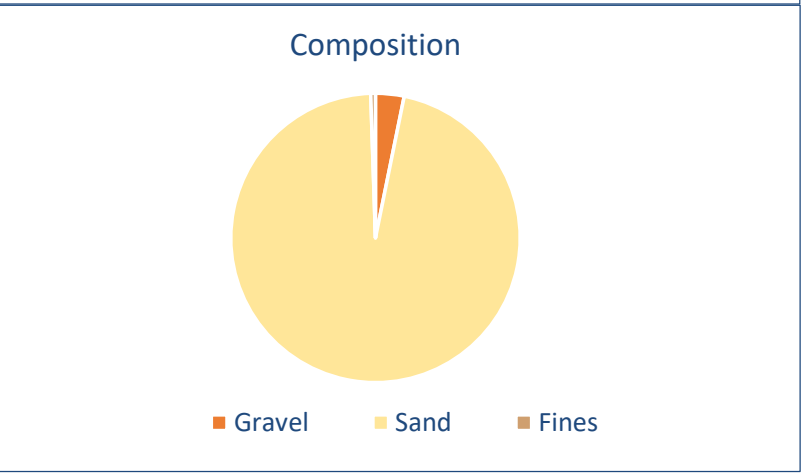
ENV06

N04a-N05a Pipe Route



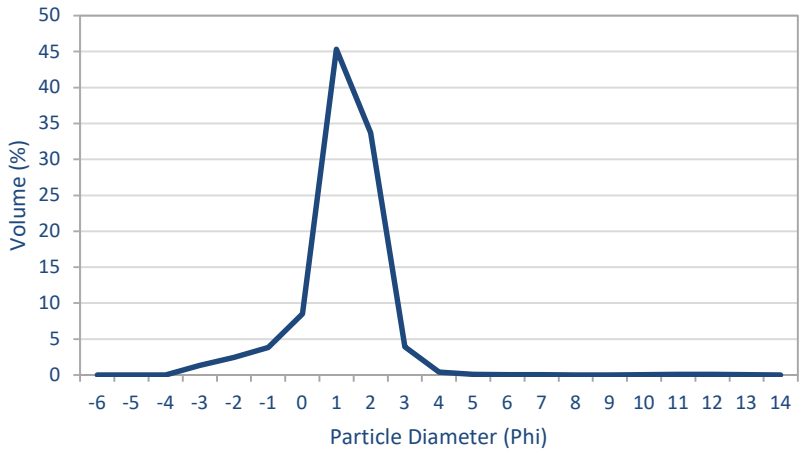


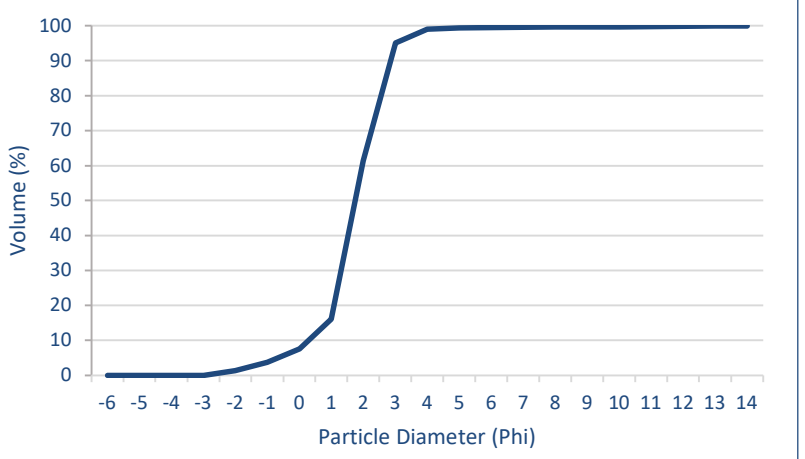
Graphic Folk and Ward	
Mean µm	576.878
Mean phi	0.794
Sorting Coefficient	0.722
Skewness	-0.116
Kurtosis	1.202
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	3%
Sand	96%
Fines	1%



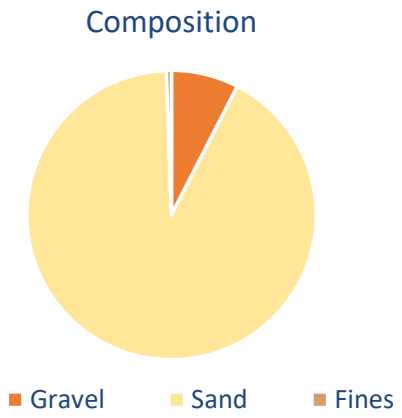
ENV07

N04a-N05a Pipe Route



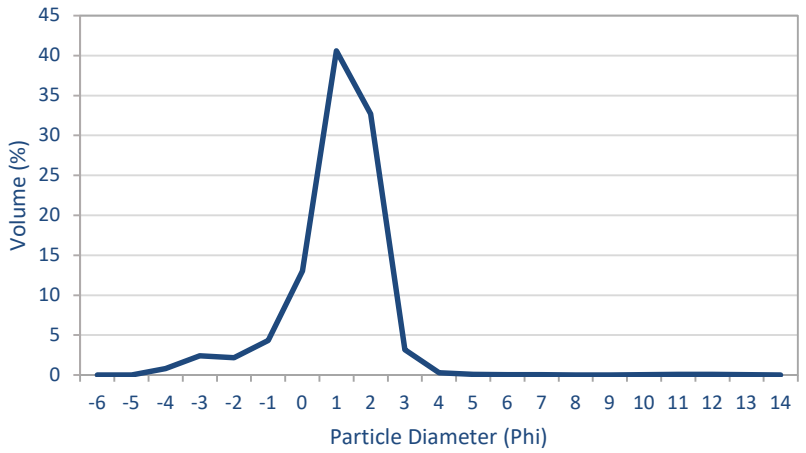


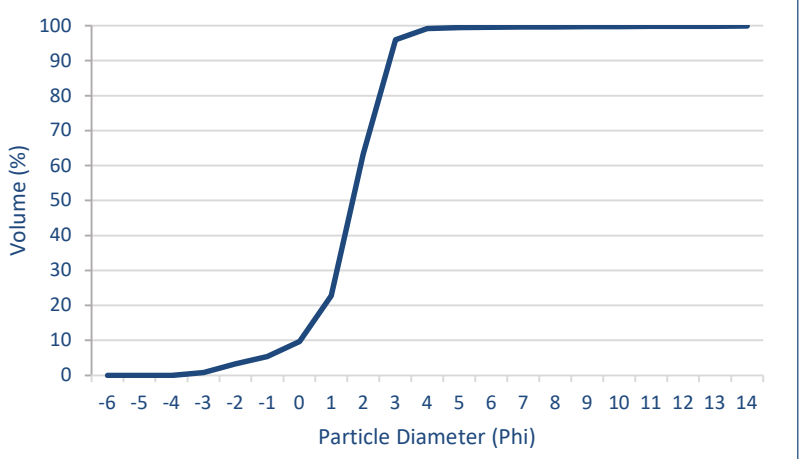
Graphic Folk and Ward	
Mean µm	591.199
Mean phi	0.758
Sorting Coefficient	0.920
Skewness	-0.216
Kurtosis	1.465
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	8%
Sand	92%
Fines	1%



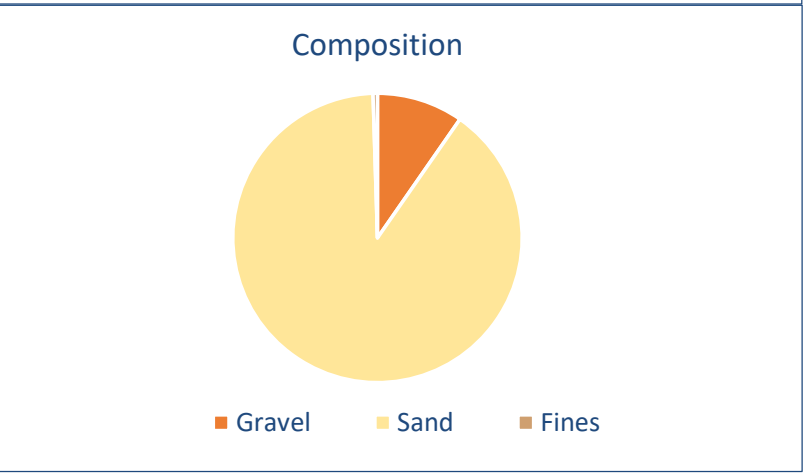
ENV08

N04a-N05a Pipe Route



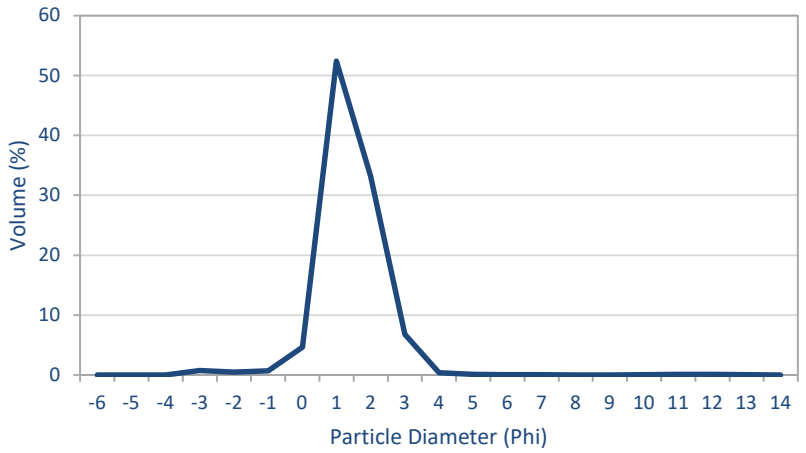


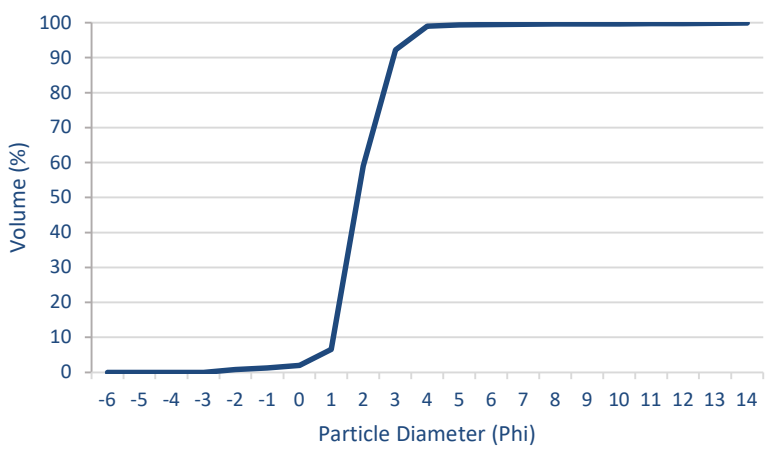
Graphic Folk and Ward	
Mean µm	668.416
Mean phi	0.581
Sorting Coefficient	1.095
Skewness	-0.336
Kurtosis	1.422
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	10%
Sand	90%
Fines	0%



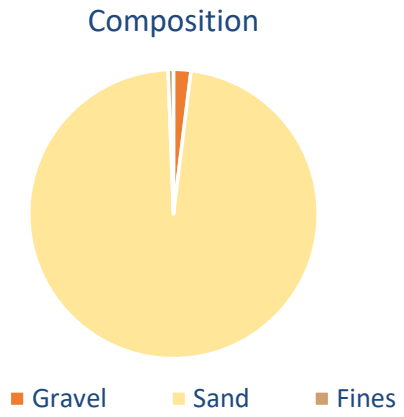
ENV09

N04a-N05a Pipe Route

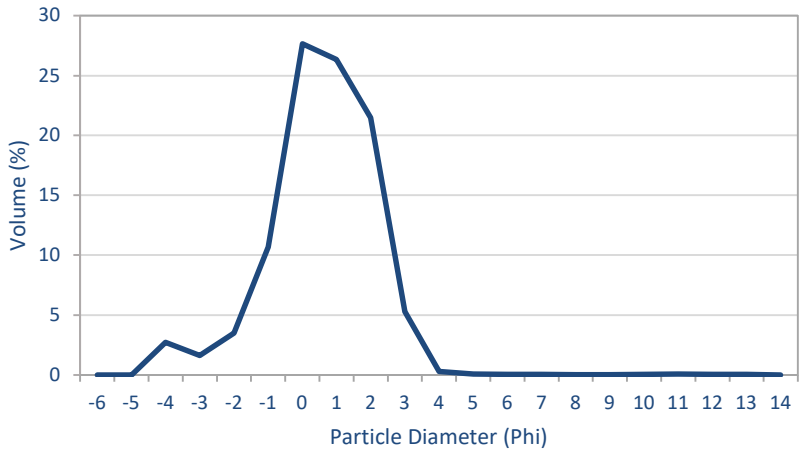


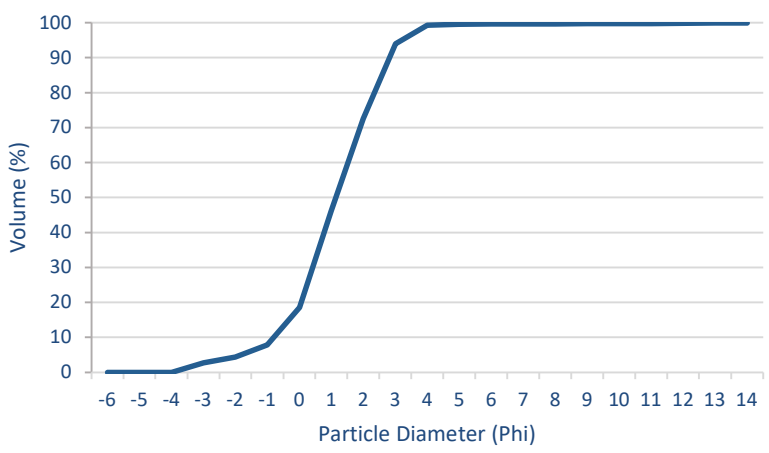


Graphic Folk and Ward	
Mean µm	536.758
Mean phi	0.898
Sorting Coefficient	0.726
Skewness	0.115
Kurtosis	1.110
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	2%
Sand	97%
Fines	1%

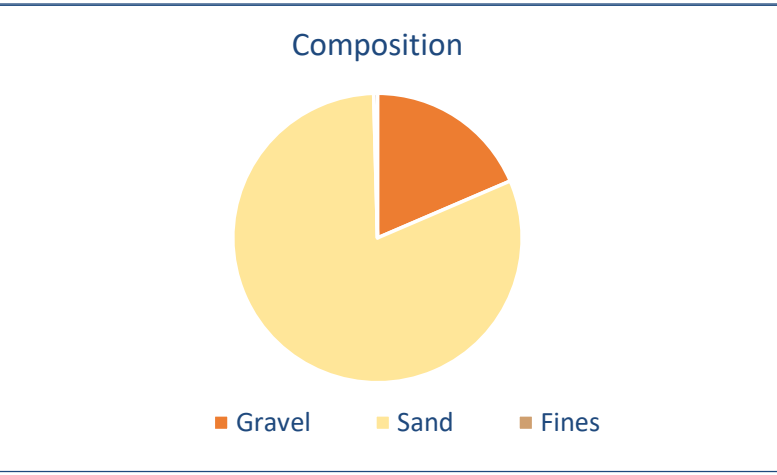


ENV10 **N04a-N05a Pipe Route**



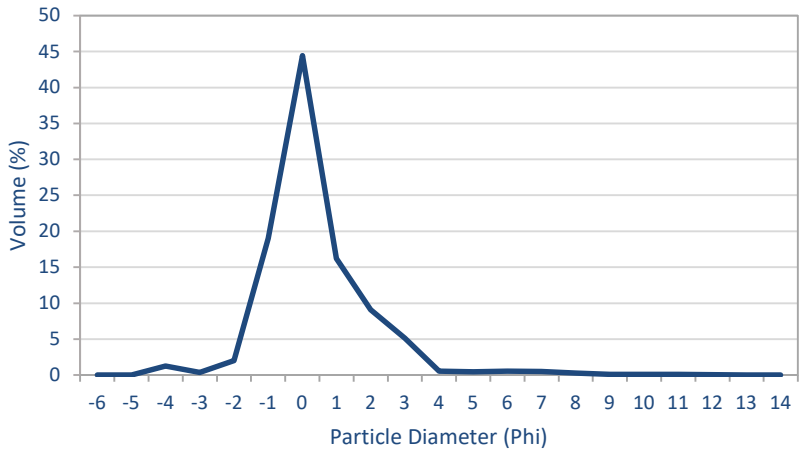


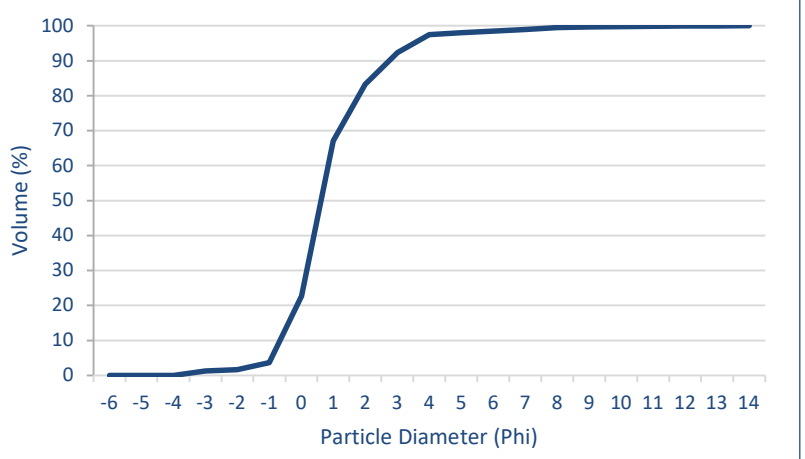
Graphic Folk and Ward	
Mean µm	899.162
Mean phi	0.153
Sorting Coefficient	1.403
Skewness	-0.100
Kurtosis	1.085
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	19%
Sand	81%
Fines	0%



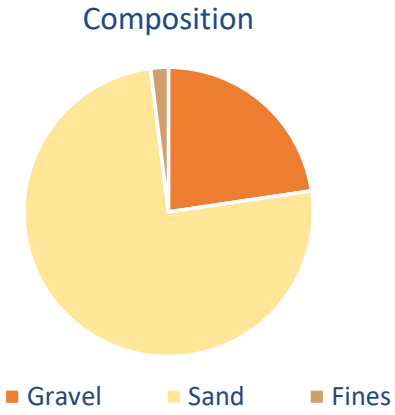
ENV11

N04a-N05a Pipe Route

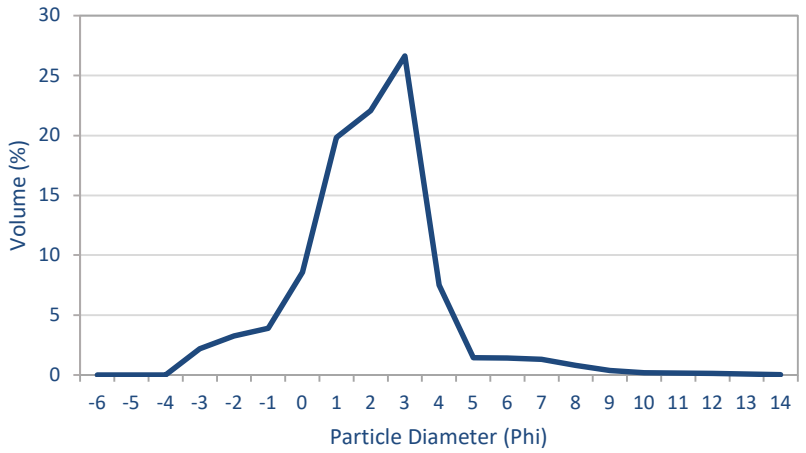


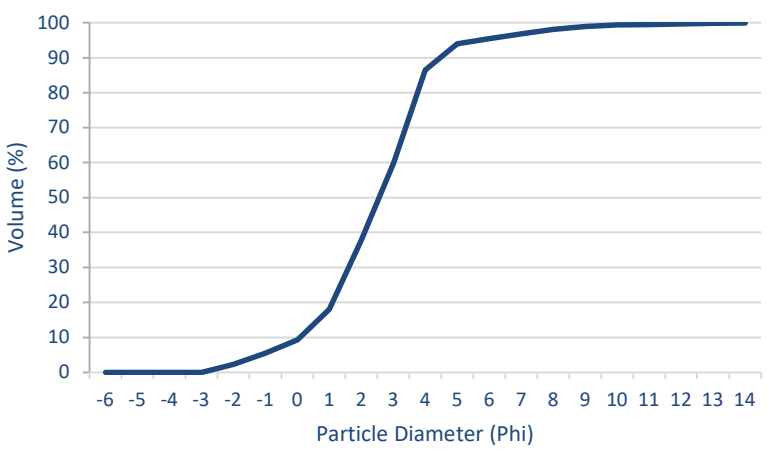


Graphic Folk and Ward	
Mean µm	1134.500
Mean phi	-0.182
Sorting Coefficient	1.217
Skewness	0.292
Kurtosis	1.274
Classification	
Folk	Gravelly Sand
Wentworth	Very Coarse Sand
Composition	
Gravel	23%
Sand	75%
Fines	2%

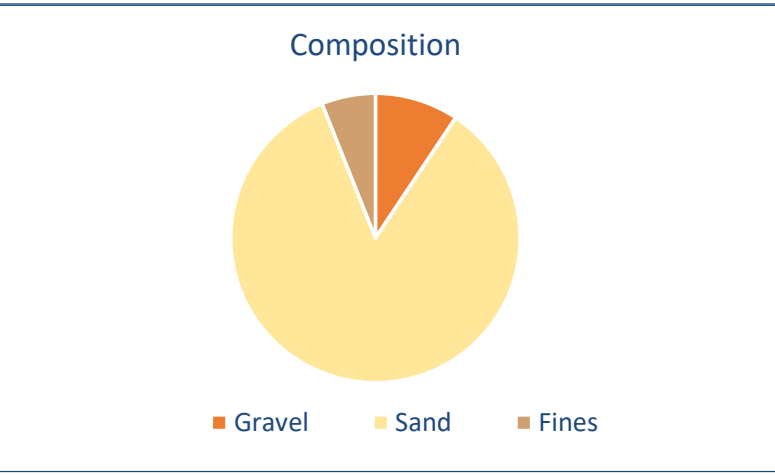


ENV12 **N04a-N05a Pipe Route**



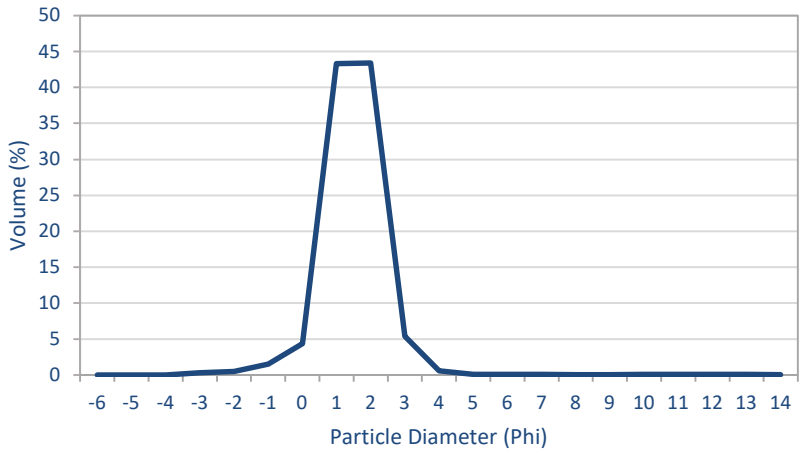


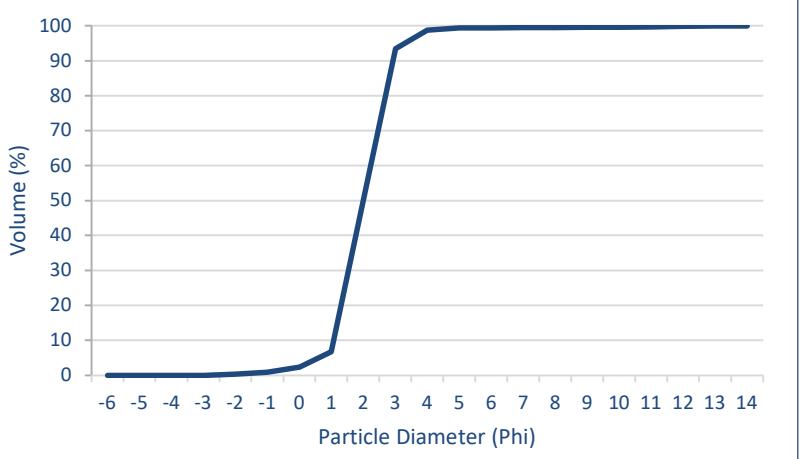
Graphic Folk and Ward	
Mean µm	371.146
Mean phi	1.430
Sorting Coefficient	1.808
Skewness	-0.110
Kurtosis	1.309
Classification	
Folk	Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	9%
Sand	85%
Fines	6%



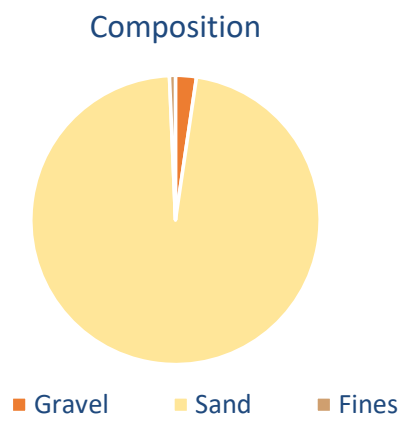
ENV13

N04a-N05a Pipe Route

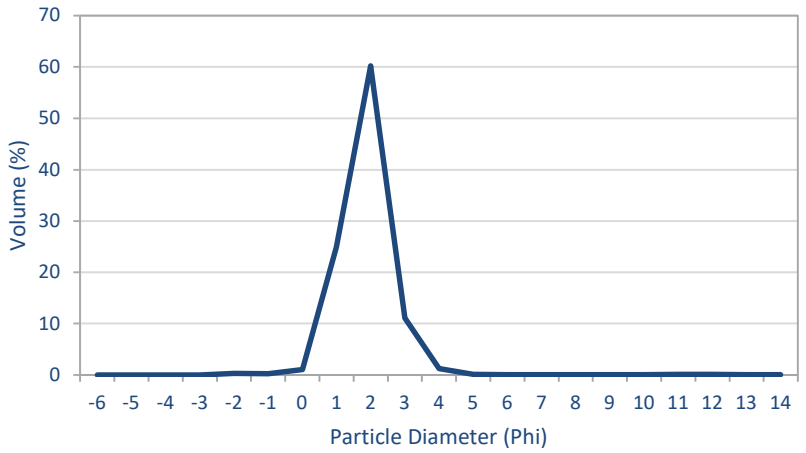


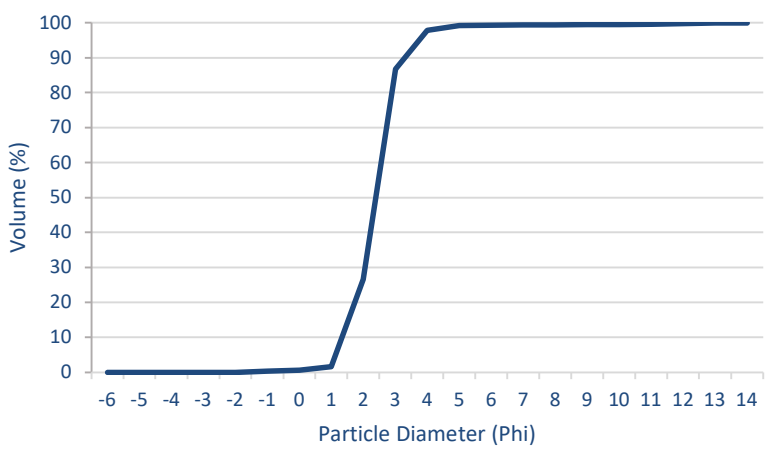


Graphic Folk and Ward	
Mean µm	501.044
Mean phi	0.997
Sorting Coefficient	0.713
Skewness	-0.021
Kurtosis	1.227
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	2%
Sand	97%
Fines	1%

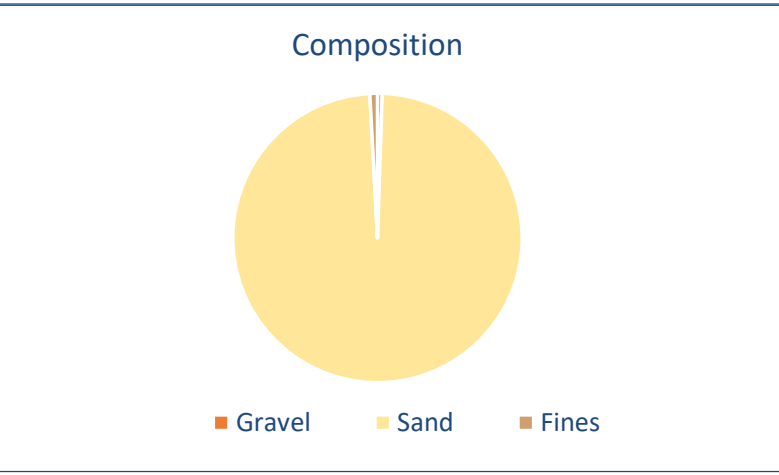


ENV14 **N04a-N05a Pipe Route**



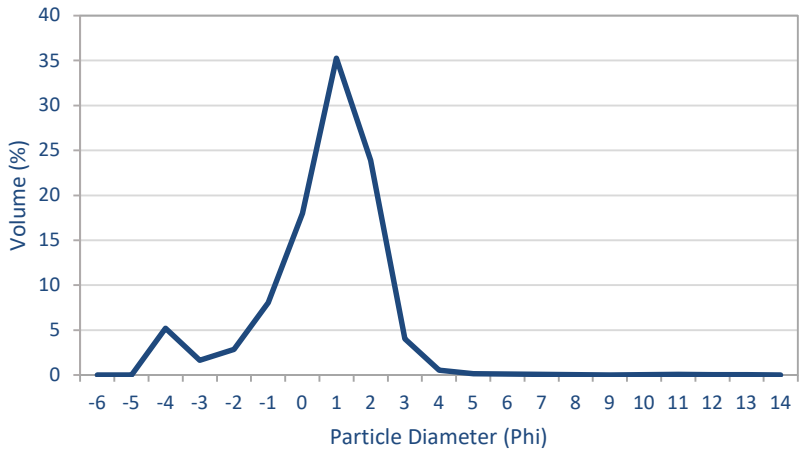


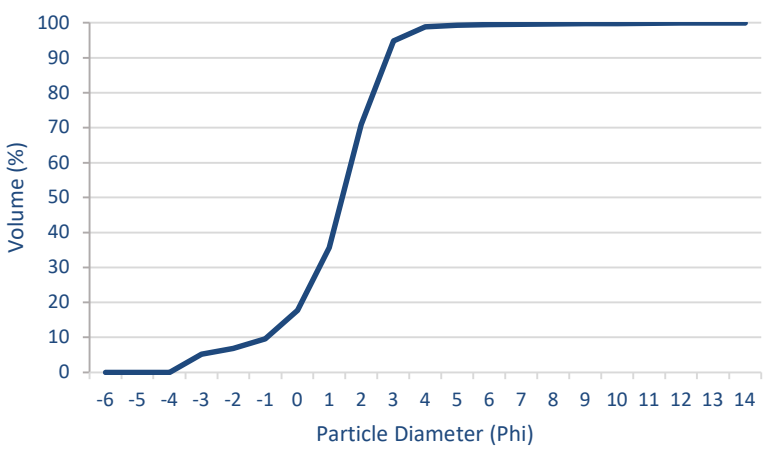
Graphic Folk and Ward	
Mean µm	395.247
Mean phi	1.339
Sorting Coefficient	0.628
Skewness	0.038
Kurtosis	1.089
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	1%
Sand	99%
Fines	1%



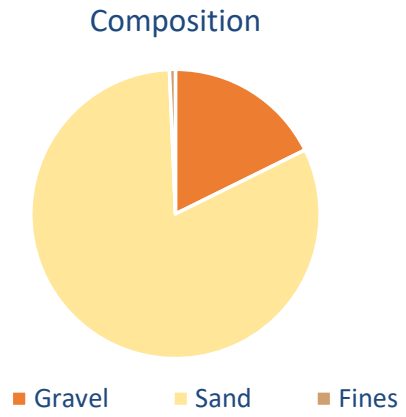
ENV15

N04a-N05a Pipe Route

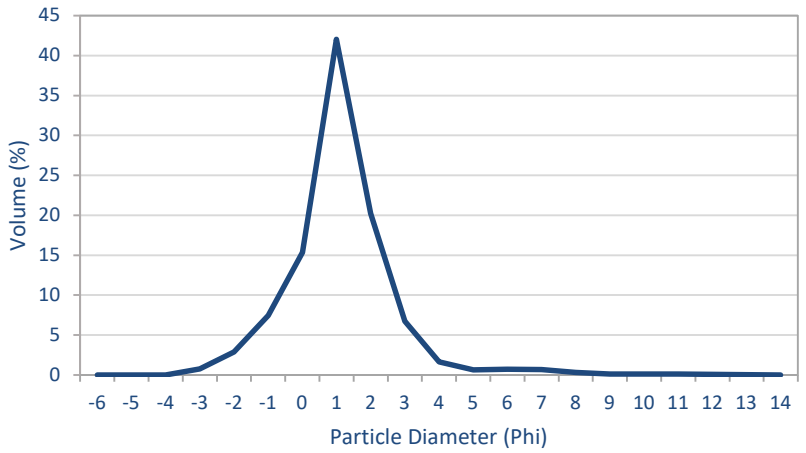


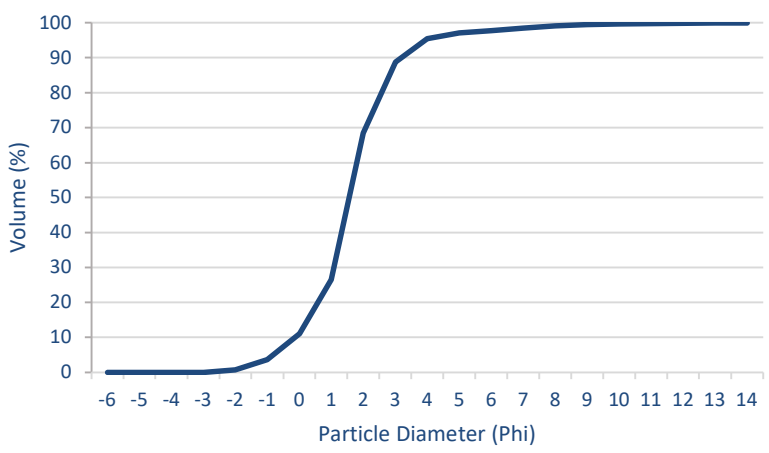


Graphic Folk and Ward	
Mean µm	844.149
Mean phi	0.244
Sorting Coefficient	1.557
Skewness	-0.392
Kurtosis	1.501
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	18%
Sand	82%
Fines	1%

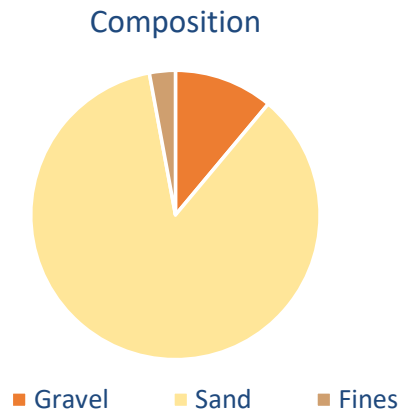


ENV16 **N04a-N05a Pipe Route**



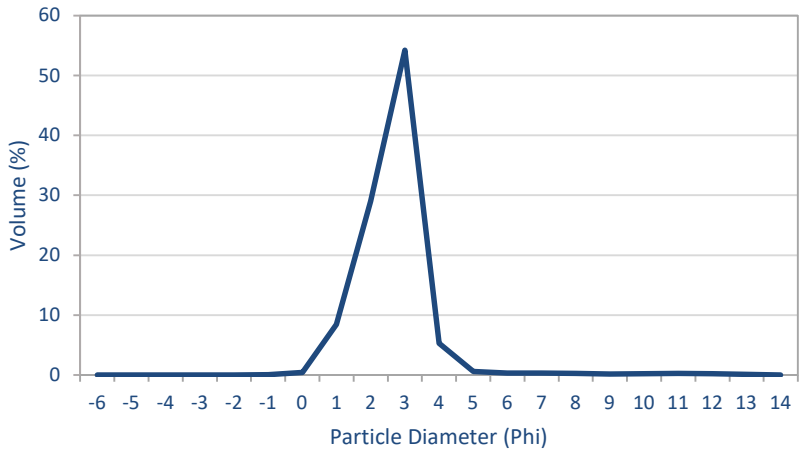


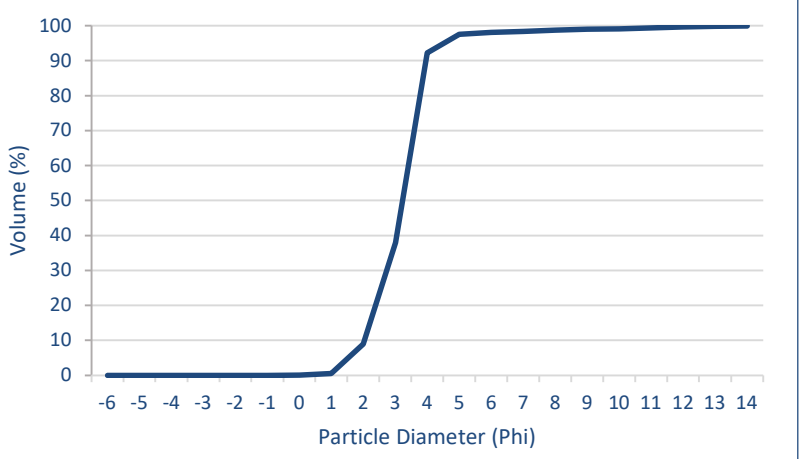
Graphic Folk and Ward	
Mean µm	694.214
Mean phi	0.527
Sorting Coefficient	1.254
Skewness	-0.061
Kurtosis	1.492
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	11%
Sand	86%
Fines	3%



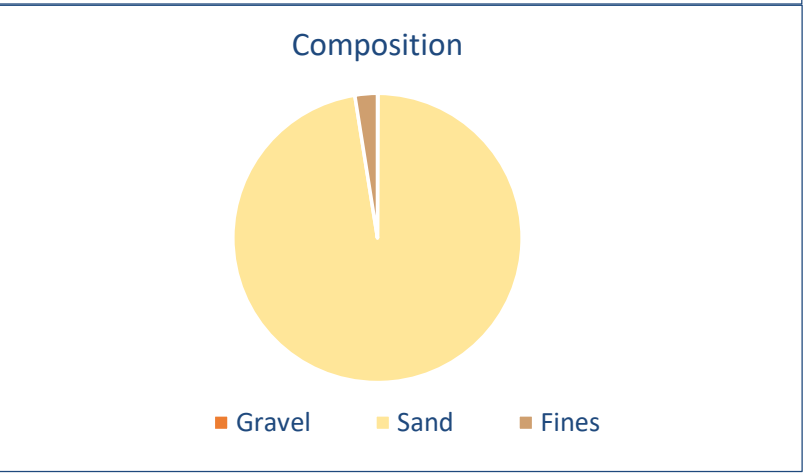
ENV17

N04a-N05a Pipe Route

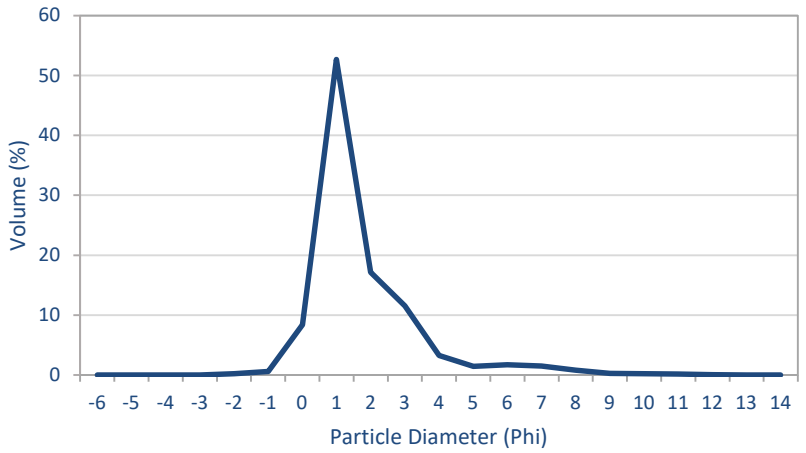


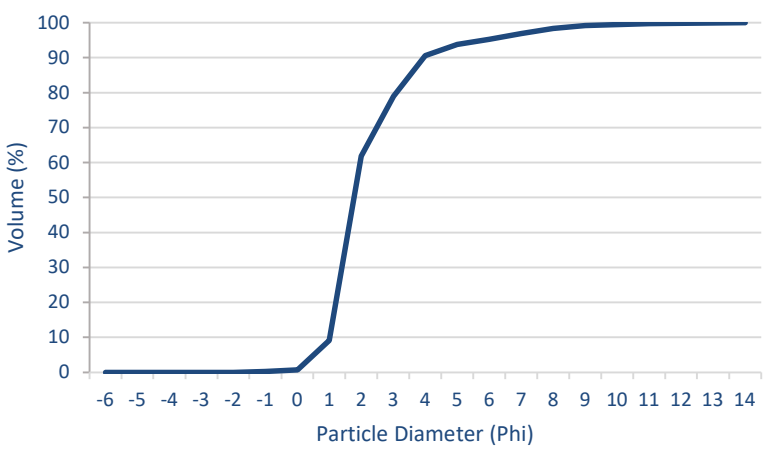


Graphic Folk and Ward	
Mean µm	232.404
Mean phi	2.105
Sorting Coefficient	0.775
Skewness	-0.159
Kurtosis	1.063
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	97%
Fines	3%

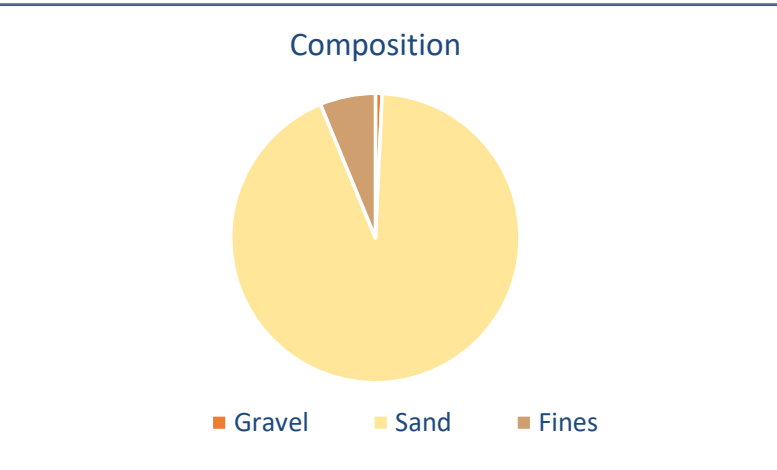


ENV18 **N04a-N05a Pipe Route**



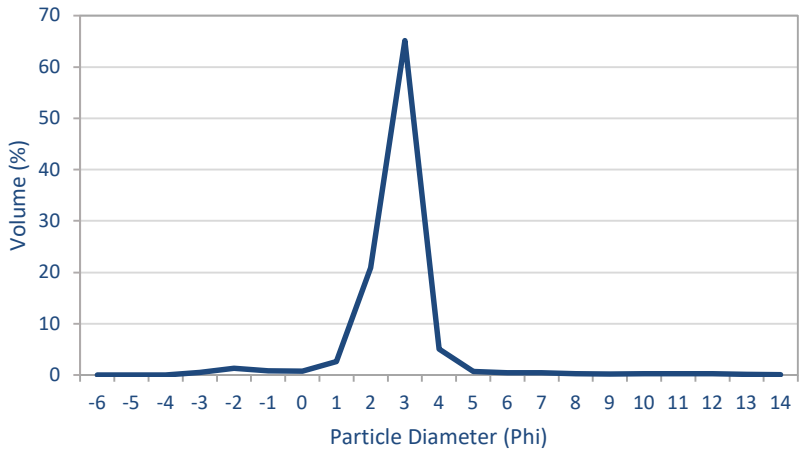


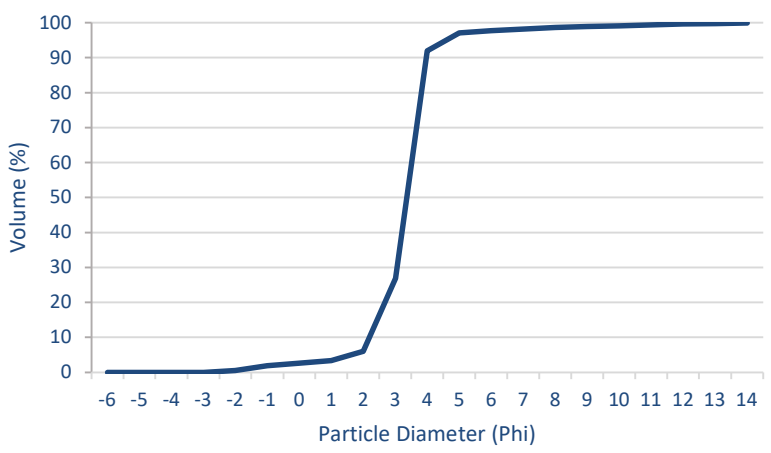
Graphic Folk and Ward	
Mean µm	454.319
Mean phi	1.138
Sorting Coefficient	1.353
Skewness	0.499
Kurtosis	1.961
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	1%
Sand	93%
Fines	6%



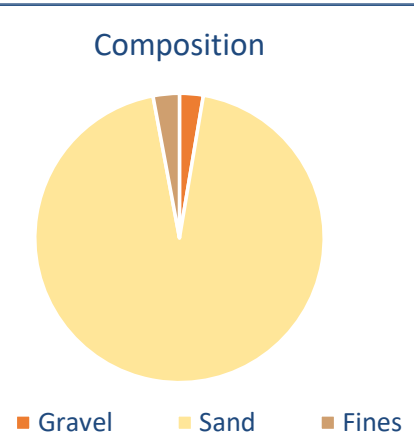
ENV19

N04a-N05a Pipe Route

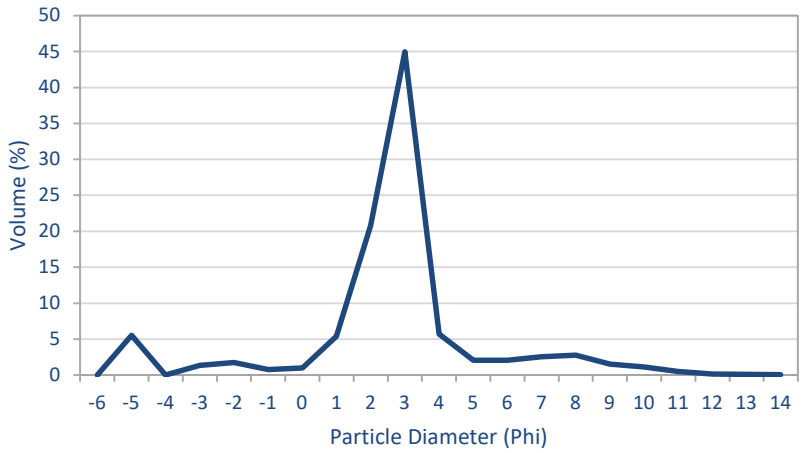


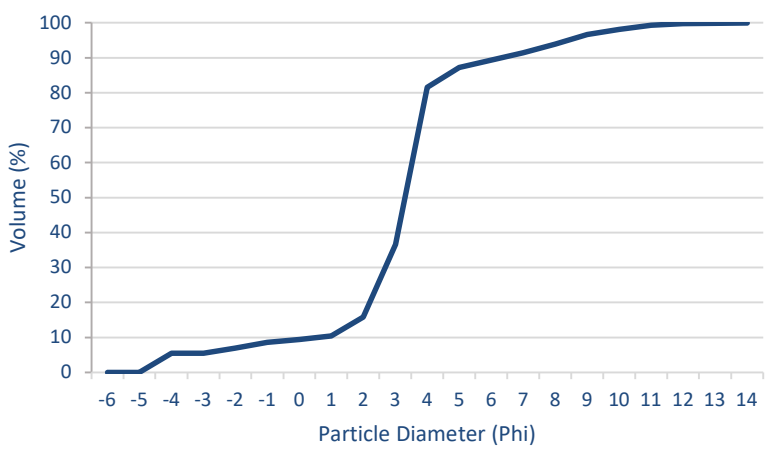


Graphic Folk and Ward	
Mean µm	206.419
Mean phi	2.276
Sorting Coefficient	0.685
Skewness	-0.110
Kurtosis	1.512
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	3%
Sand	94%
Fines	3%

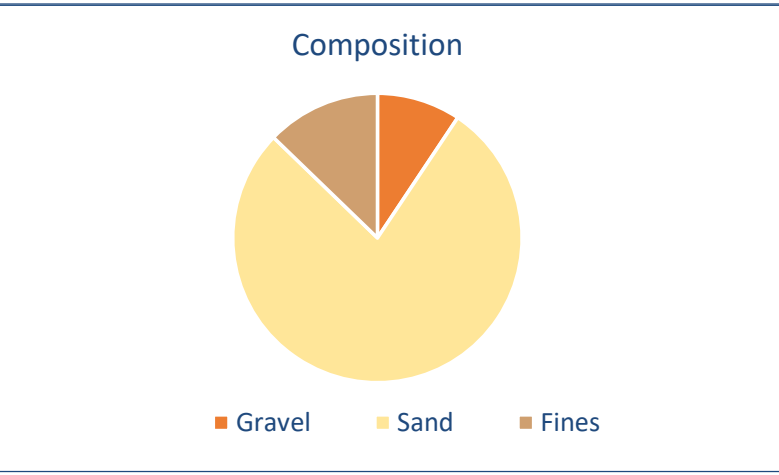


ENV20 **N05a-Riffgat OWF Cable Route**



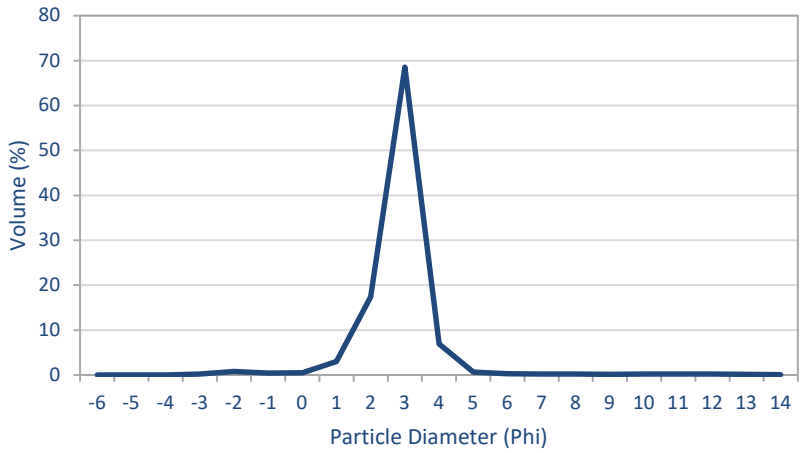


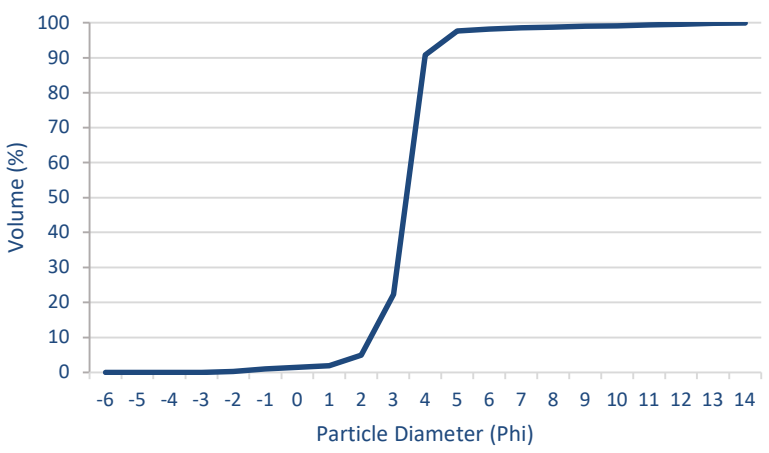
Graphic Folk and Ward	
Mean µm	218.155
Mean phi	2.197
Sorting Coefficient	2.448
Skewness	-0.155
Kurtosis	3.494
Classification	
Folk	Gravelly Muddy Sand
Wentworth	Fine Sand
Composition	
Gravel	9%
Sand	78%
Fines	13%



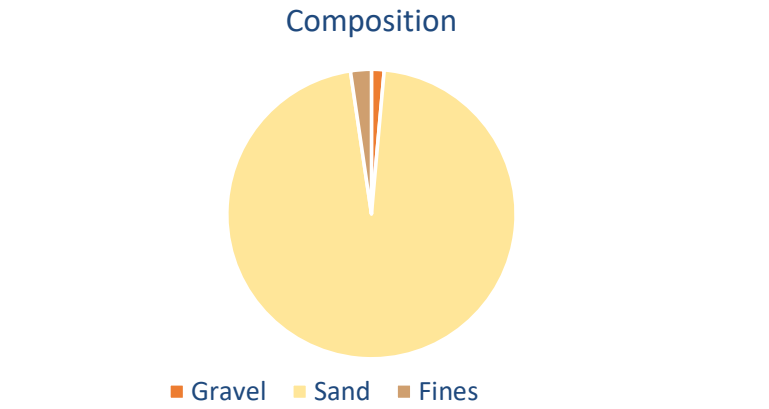
ENV21

N04a-N05a Pipe Route

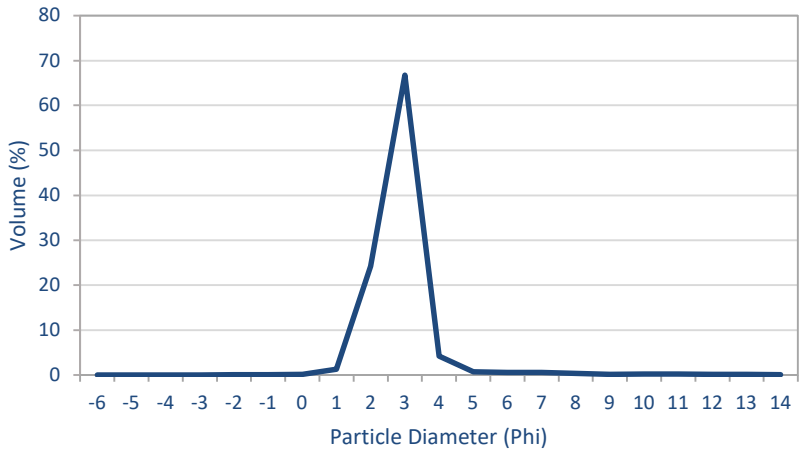


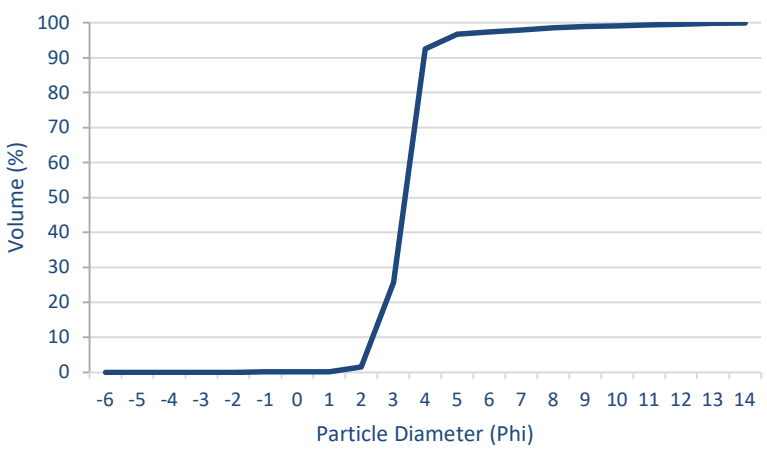


Graphic Folk and Ward	
Mean µm	197.442
Mean phi	2.341
Sorting Coefficient	0.629
Skewness	-0.084
Kurtosis	1.382
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	1%
Sand	96%
Fines	2%

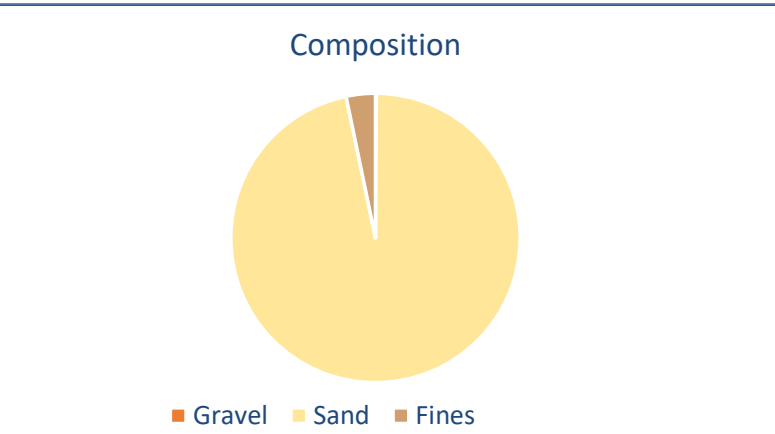


ENV22 **N04a-N05a Pipe Route**



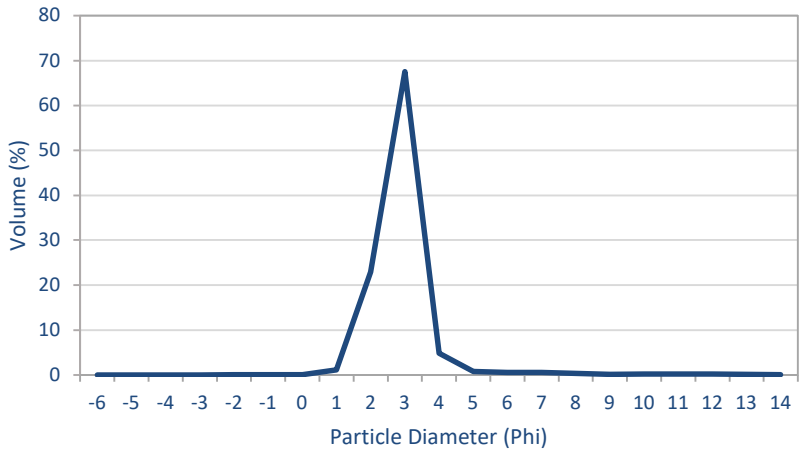


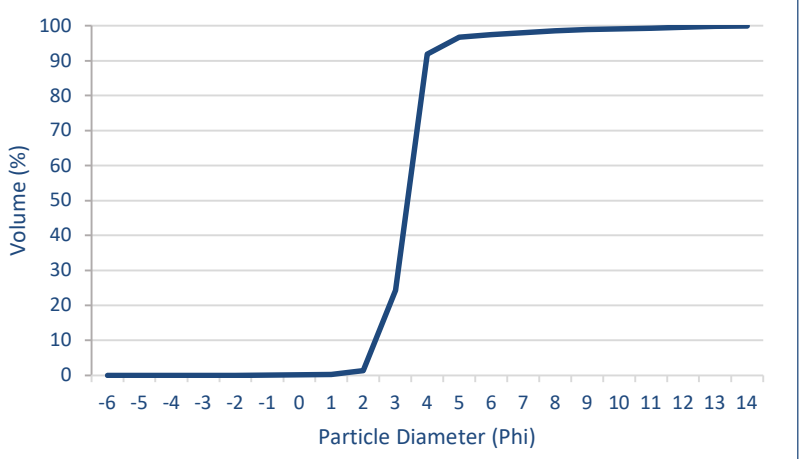
Graphic Folk and Ward	
Mean µm	204.057
Mean phi	2.293
Sorting Coefficient	0.547
Skewness	0.094
Kurtosis	1.168
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	97%
Fines	3%



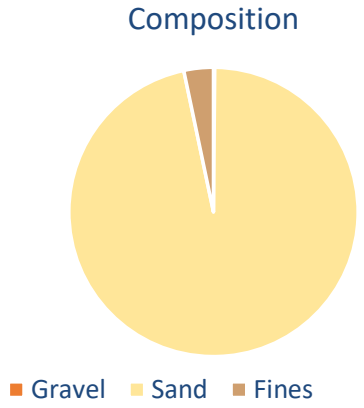
ENV23

N04a-N05a Pipe Route

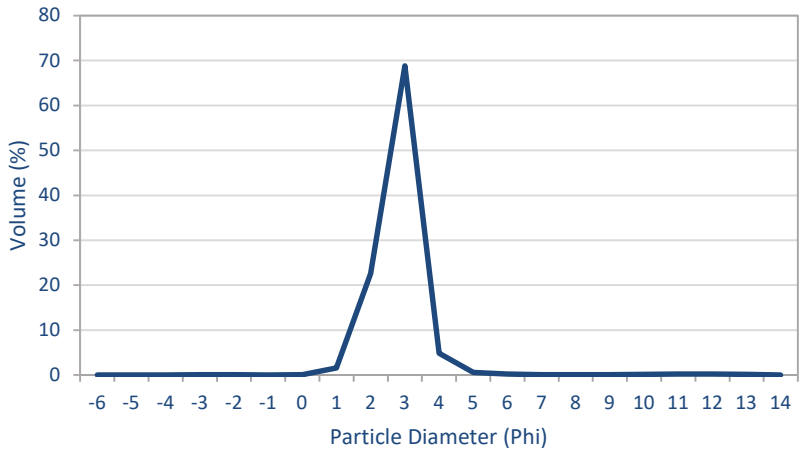


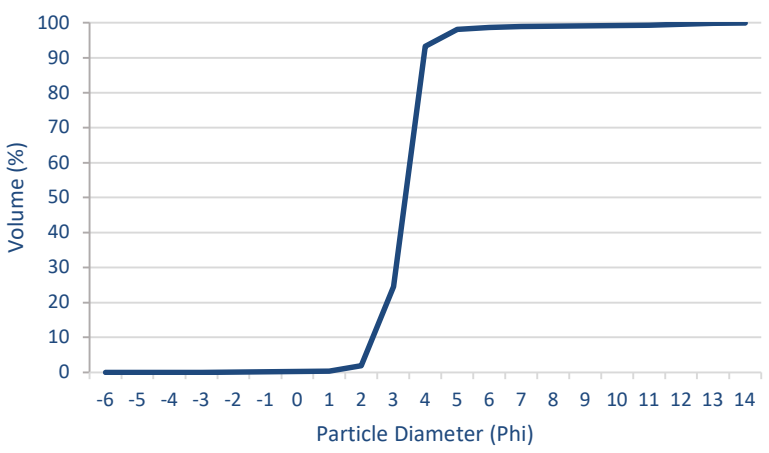


Graphic Folk and Ward	
Mean µm	200.903
Mean phi	2.315
Sorting Coefficient	0.548
Skewness	0.100
Kurtosis	1.170
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	97%
Fines	3%

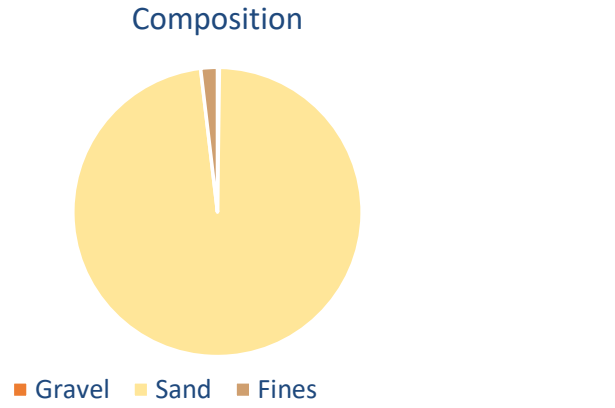


ENV24 **N04a-N05a Pipe Route**



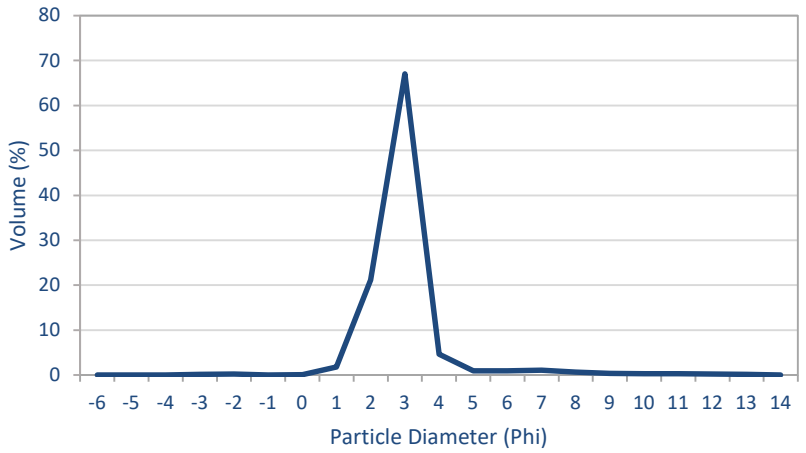


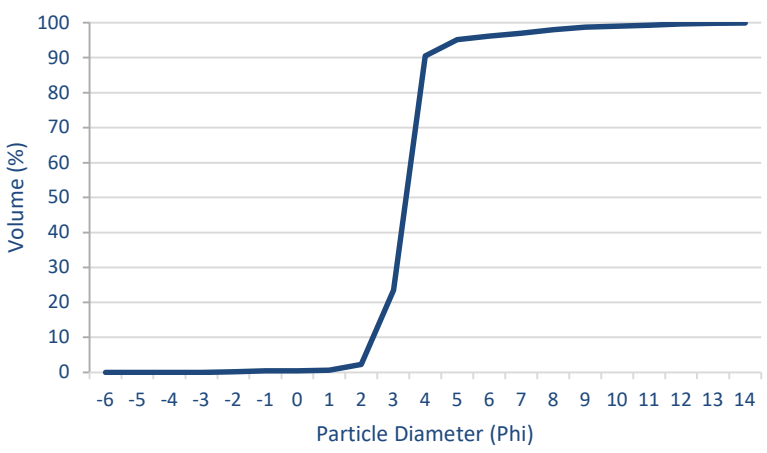
Graphic Folk and Ward	
Mean µm	202.205
Mean phi	2.306
Sorting Coefficient	0.516
Skewness	0.031
Kurtosis	1.057
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	98%
Fines	2%



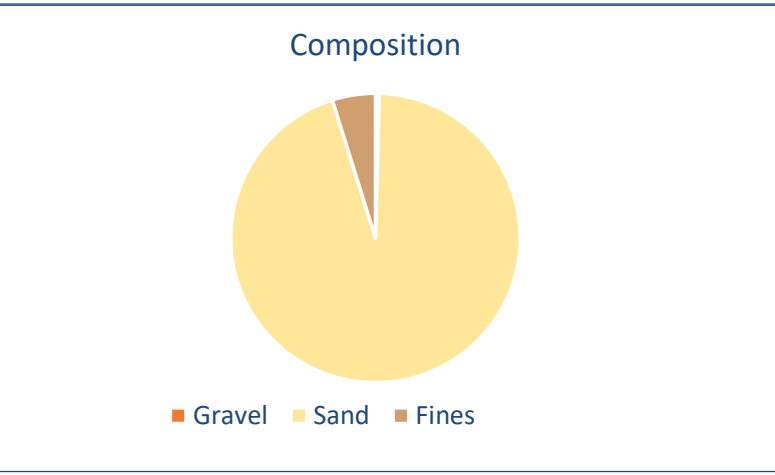
ENV25

N04a-N05a Pipe Route



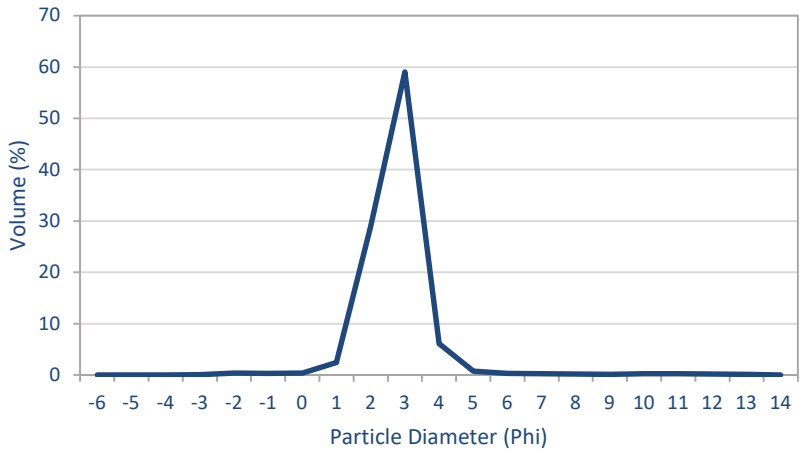


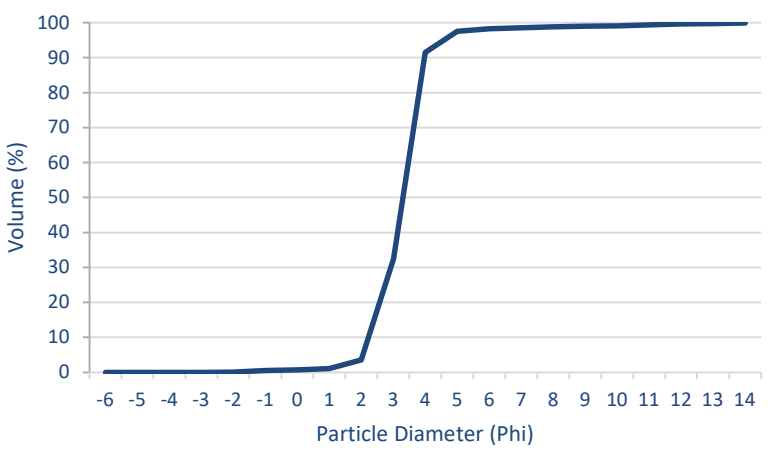
Graphic Folk and Ward	
Mean µm	199.286
Mean phi	2.327
Sorting Coefficient	0.639
Skewness	0.171
Kurtosis	1.493
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	95%
Fines	5%



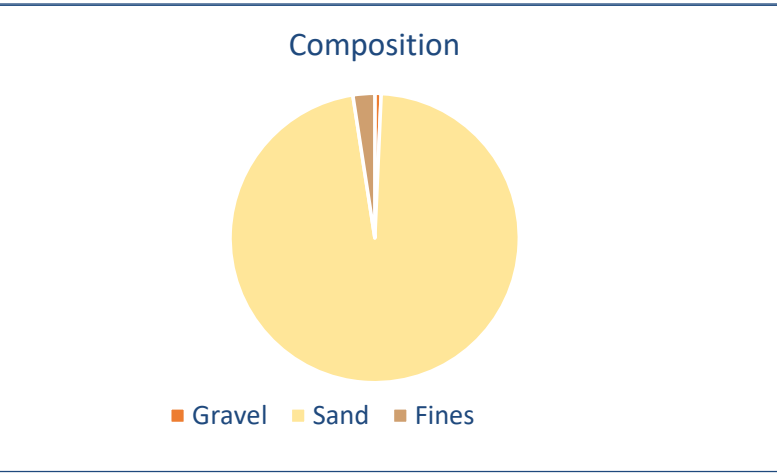
ENV26

N05a Platform Area



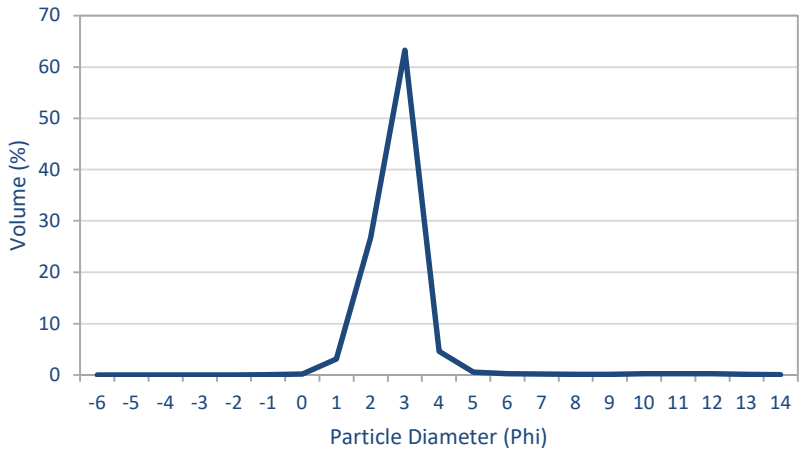


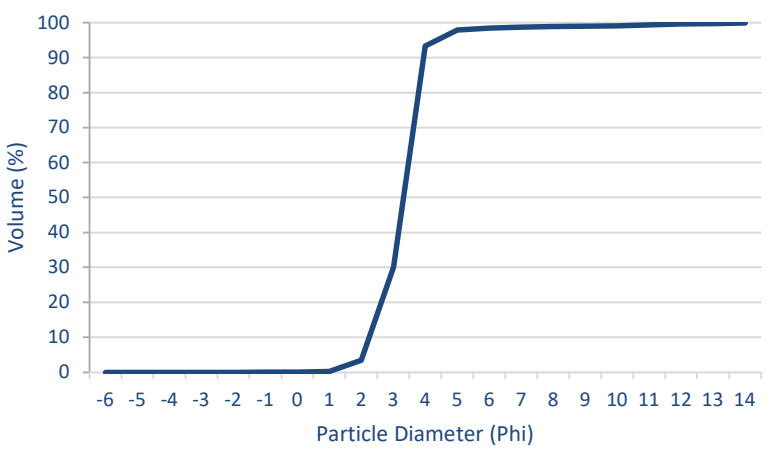
Graphic Folk and Ward	
Mean µm	212.678
Mean phi	2.233
Sorting Coefficient	0.649
Skewness	-0.029
Kurtosis	1.117
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	1%
Sand	97%
Fines	2%



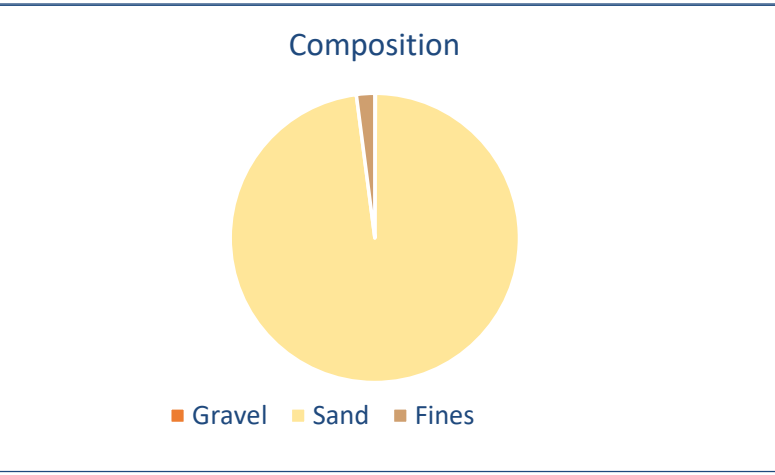
ENV27

N05a Platform Area

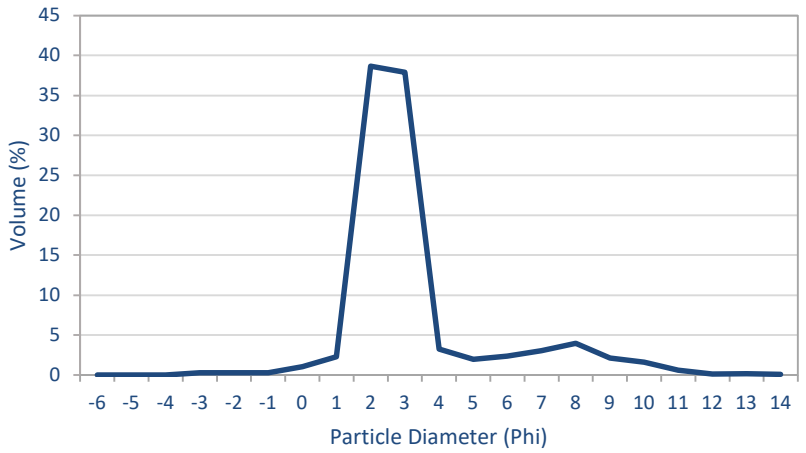


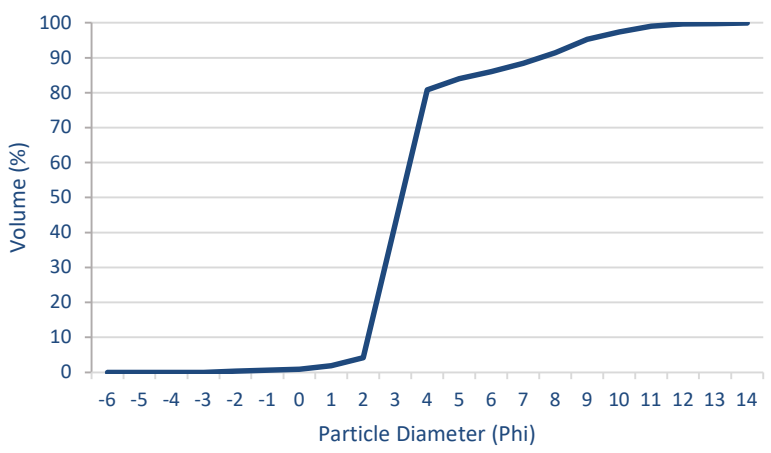


Graphic Folk and Ward	
Mean µm	211.338
Mean phi	2.242
Sorting Coefficient	0.601
Skewness	-0.060
Kurtosis	1.133
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	98%
Fines	2%

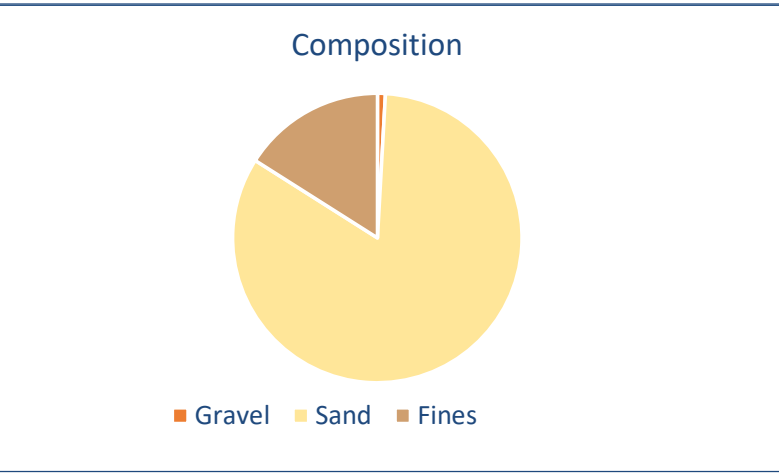


ENV28 **N05a-Riffgat OWF Cable Route**



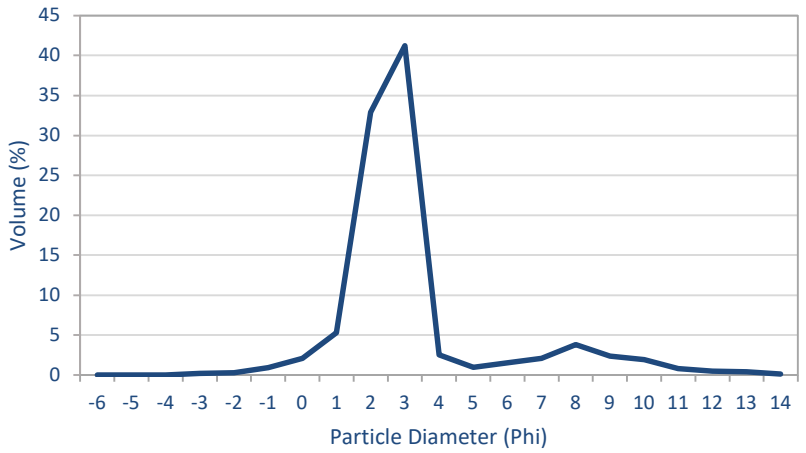


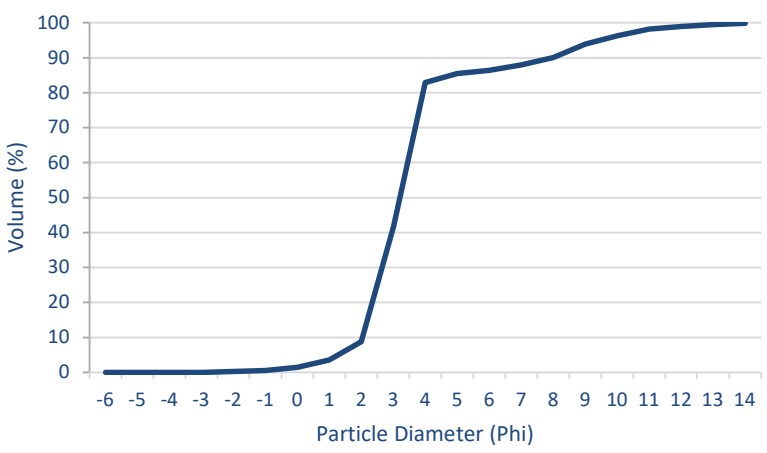
Graphic Folk and Ward	
Mean µm	173.236
Mean phi	2.529
Sorting Coefficient	1.679
Skewness	0.571
Kurtosis	2.558
Classification	
Folk	Slightly Gravelly Muddy Sand
Wentworth	Fine Sand
Composition	
Gravel	1%
Sand	83%
Fines	16%



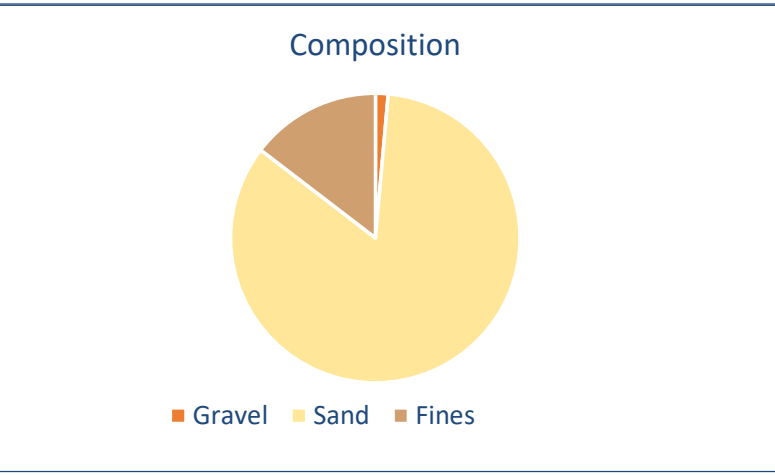
ENV29

N05a-Riffgat OWF Cable Route

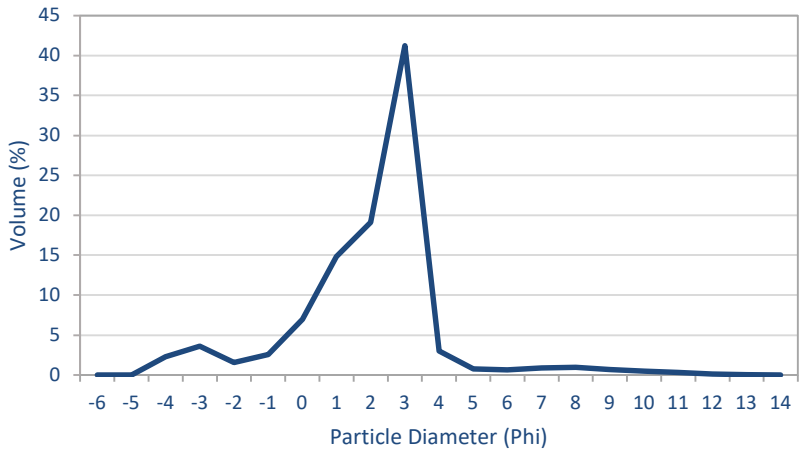


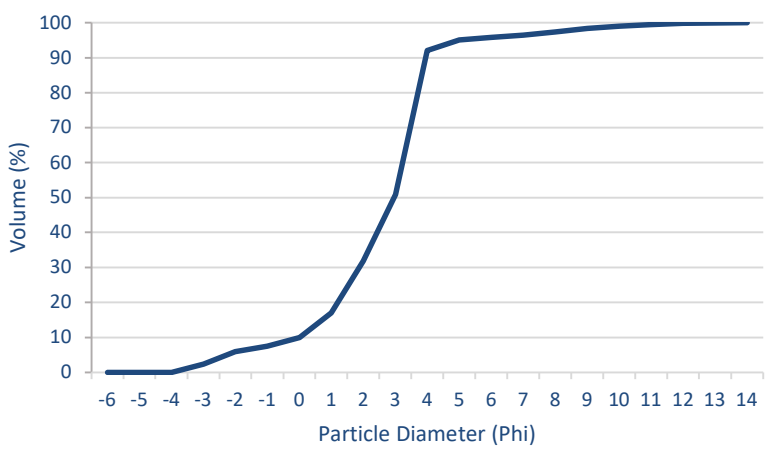


Graphic Folk and Ward	
Mean µm	211.556
Mean phi	2.241
Sorting Coefficient	1.653
Skewness	0.390
Kurtosis	3.280
Classification	
Folk	Slightly Gravelly Muddy Sand
Wentworth	Fine Sand
Composition	
Gravel	1%
Sand	84%
Fines	15%

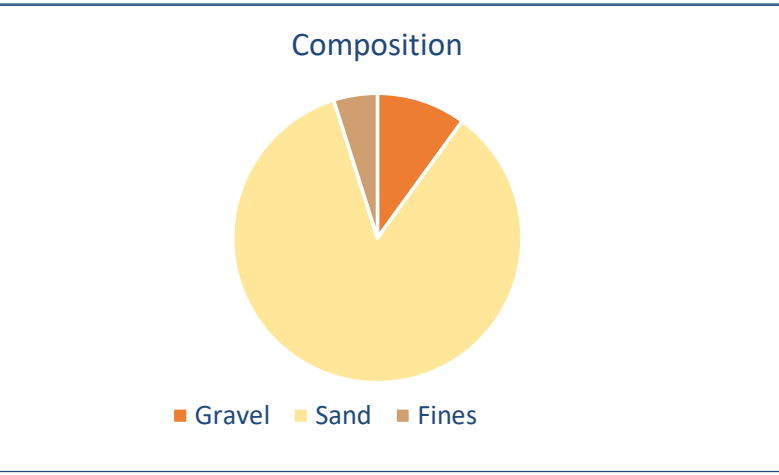


ENV30 **N05a-Riffgat OWF Cable Route**



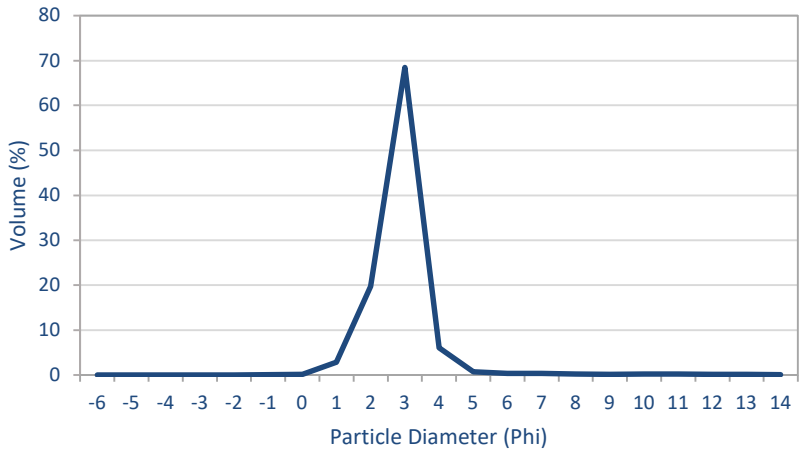


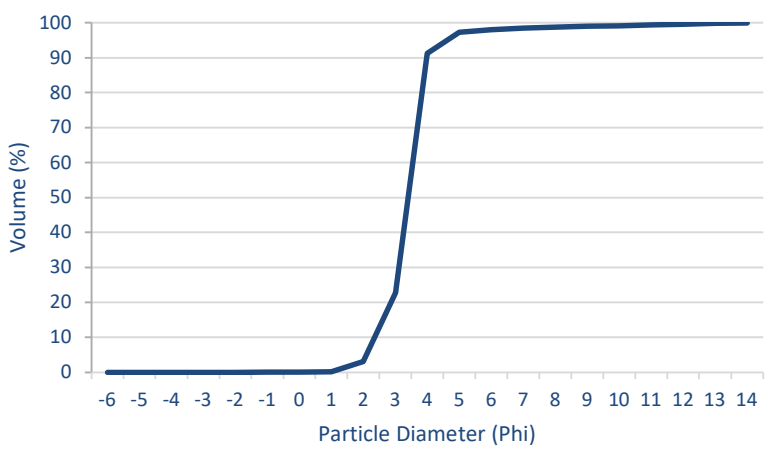
Graphic Folk and Ward	
Mean µm	347.089
Mean phi	1.527
Sorting Coefficient	1.797
Skewness	-0.455
Kurtosis	1.549
Classification	
Folk	Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	10%
Sand	85%
Fines	5%



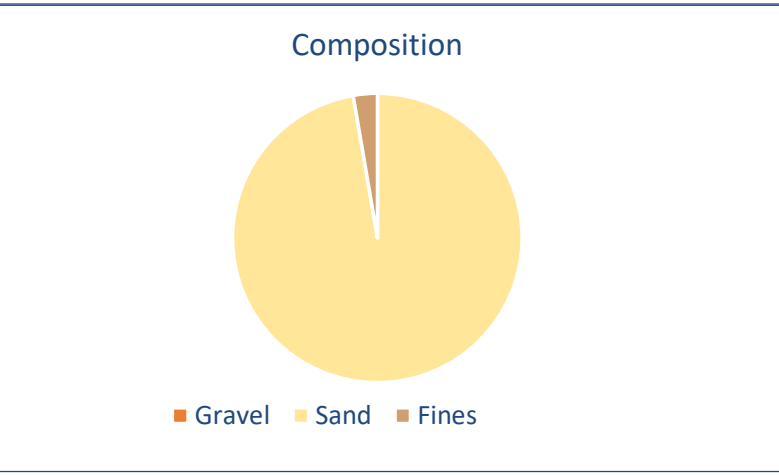
ENV31

N05a-Riffgat OWF Cable Route

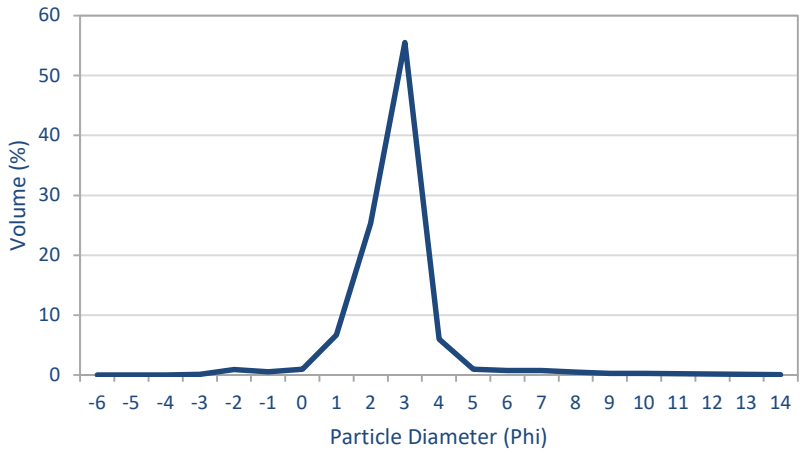


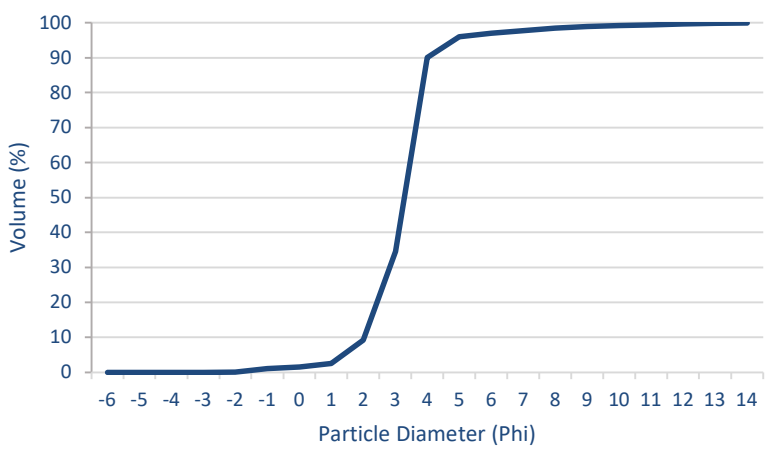


Graphic Folk and Ward	
Mean µm	198.214
Mean phi	2.335
Sorting Coefficient	0.577
Skewness	0.007
Kurtosis	1.224
Classification	
Folk	Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	97%
Fines	3%

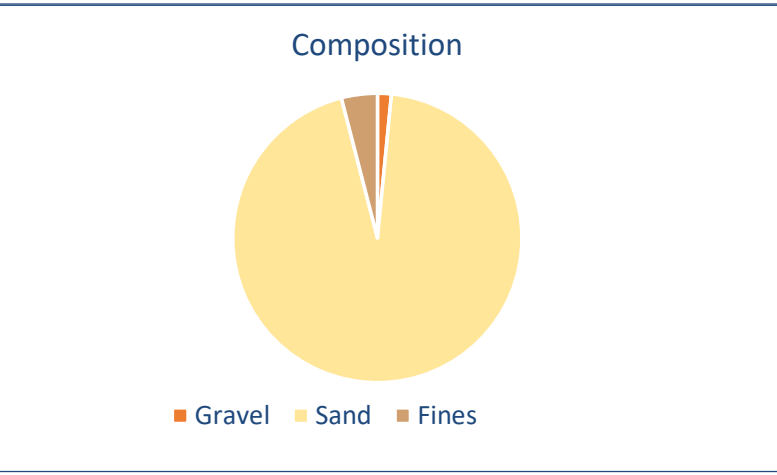


ENV32 **N05a-Riffgat OWF Cable Route**



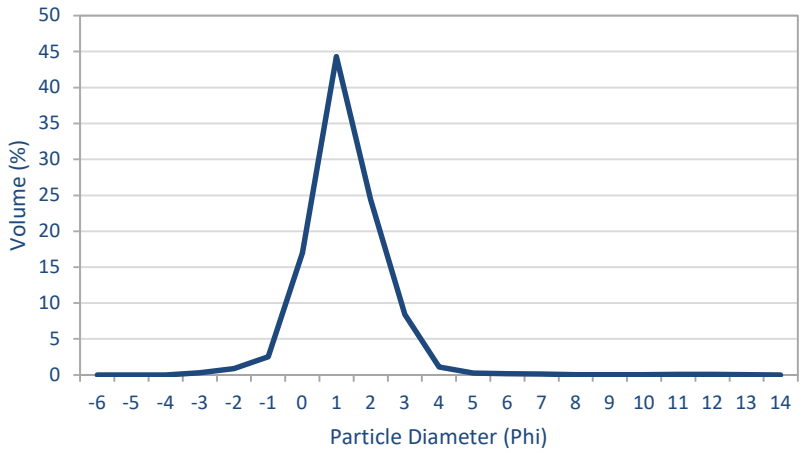


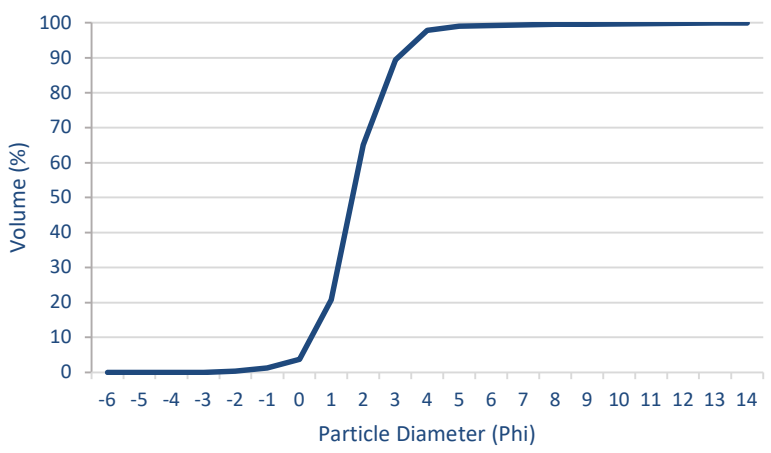
Graphic Folk and Ward	
Mean µm	223.133
Mean phi	2.164
Sorting Coefficient	0.831
Skewness	-0.133
Kurtosis	1.294
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	2%
Sand	94%
Fines	4%



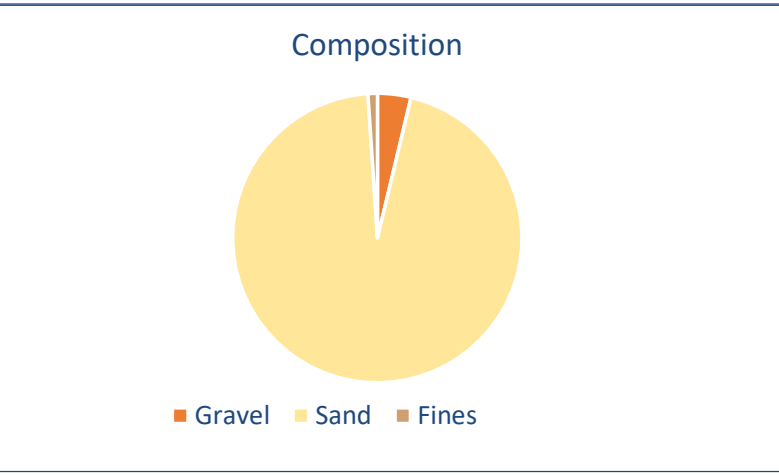
ENV33

N05a-Riffgat OWF Cable Route

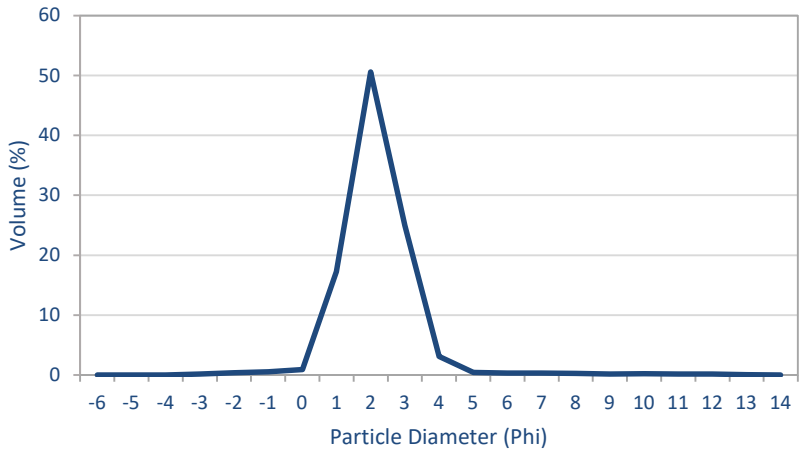


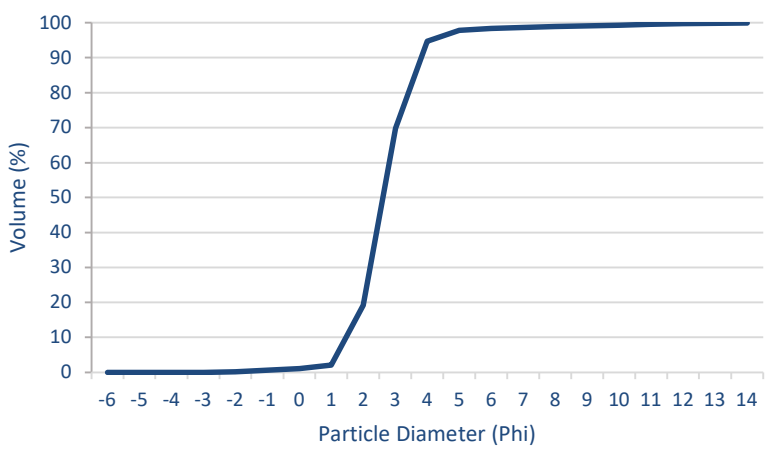


Graphic Folk and Ward	
Mean µm	617.844
Mean phi	0.695
Sorting Coefficient	0.980
Skewness	0.037
Kurtosis	1.235
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	4%
Sand	95%
Fines	1%

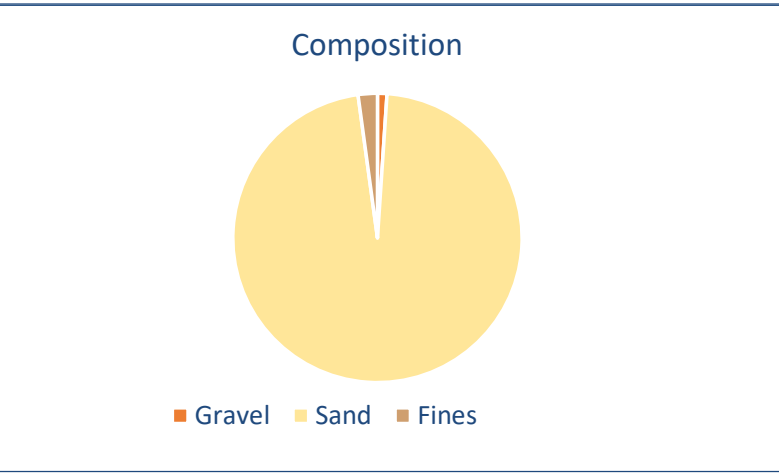


ENV34 **N05a-Riffgat OWF Cable Route**





Graphic Folk and Ward	
Mean µm	321.691
Mean phi	1.636
Sorting Coefficient	0.784
Skewness	0.236
Kurtosis	0.943
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	1%
Sand	97%
Fines	2%



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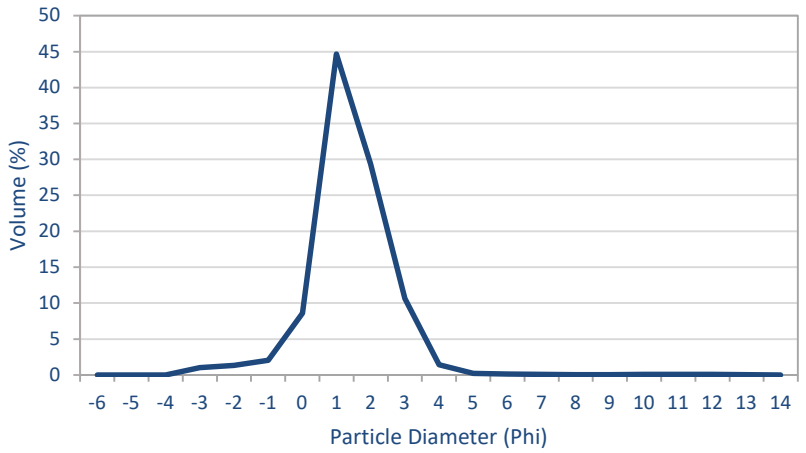
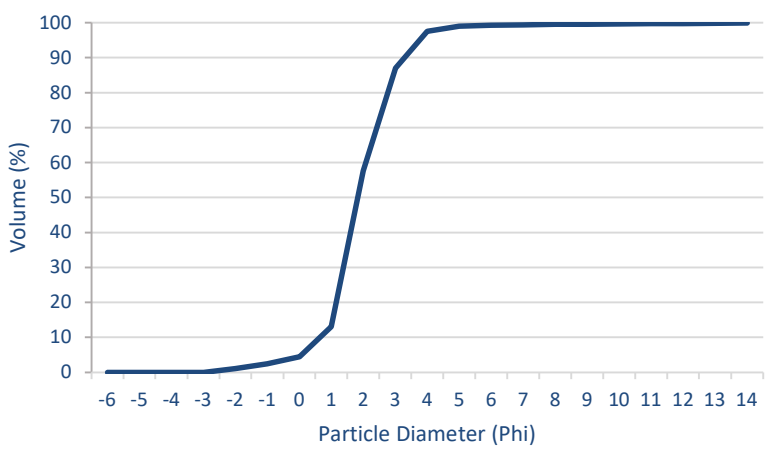
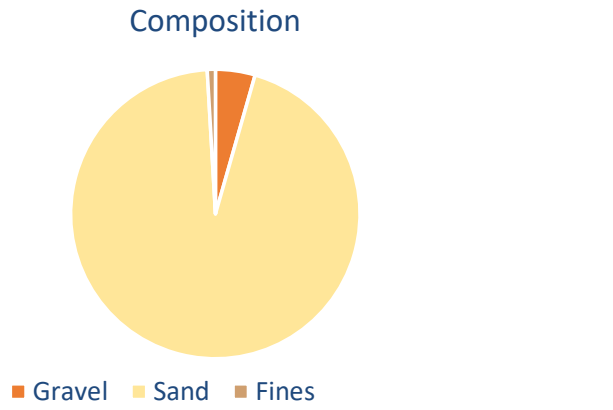
N05a-Riffgat OWF Cable Route

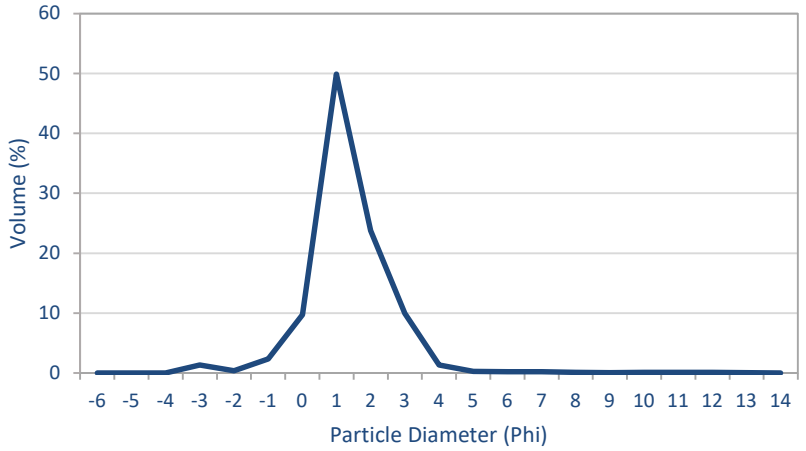


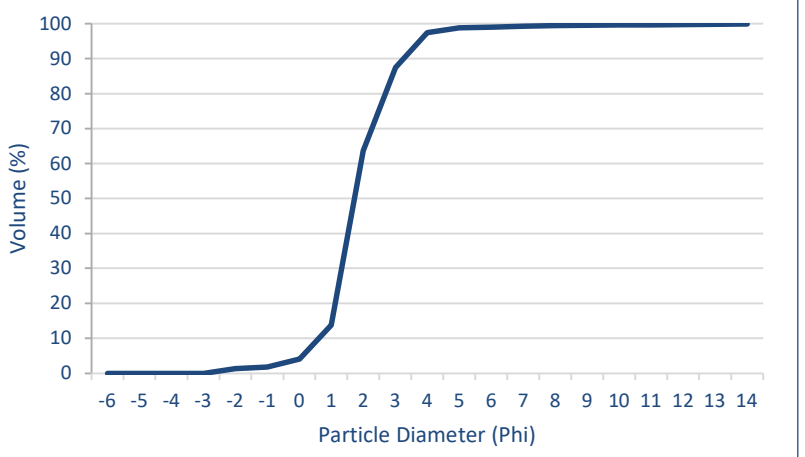


Graphic Folk and Ward	
Mean µm	527.968
Mean phi	0.921
Sorting Coefficient	0.980
Skewness	0.073
Kurtosis	1.368
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	4%
Sand	95%
Fines	1%

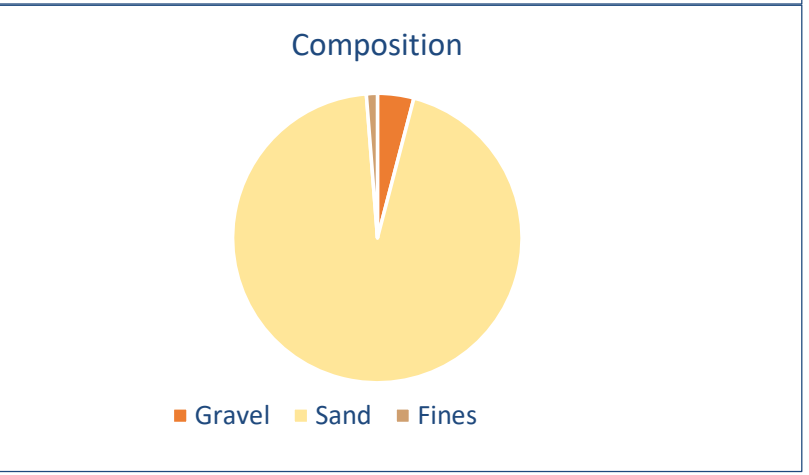


ENV36 **N05a-Riffgat OWF Cable Route**



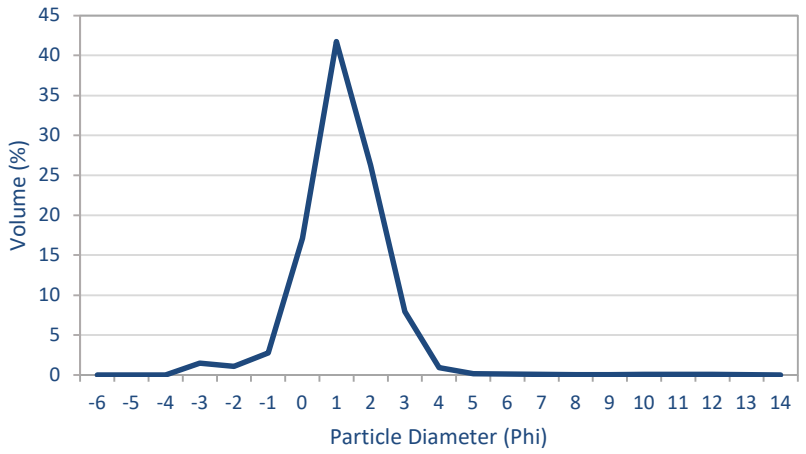


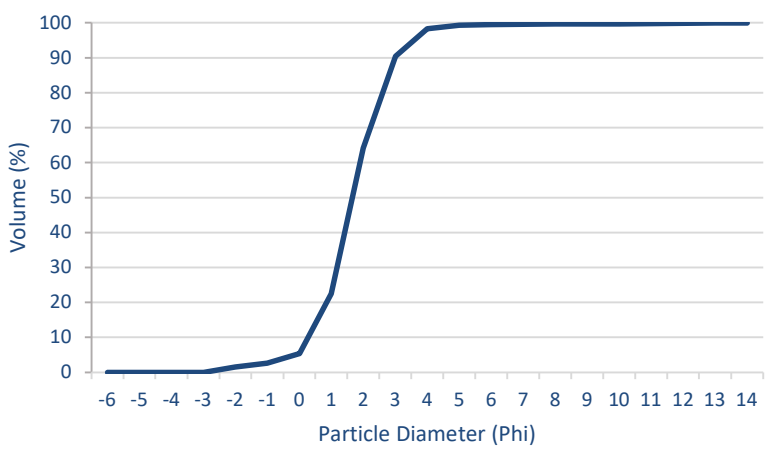
Graphic Folk and Ward	
Mean µm	556.989
Mean phi	0.844
Sorting Coefficient	0.958
Skewness	0.132
Kurtosis	1.359
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	4%
Sand	95%
Fines	1%



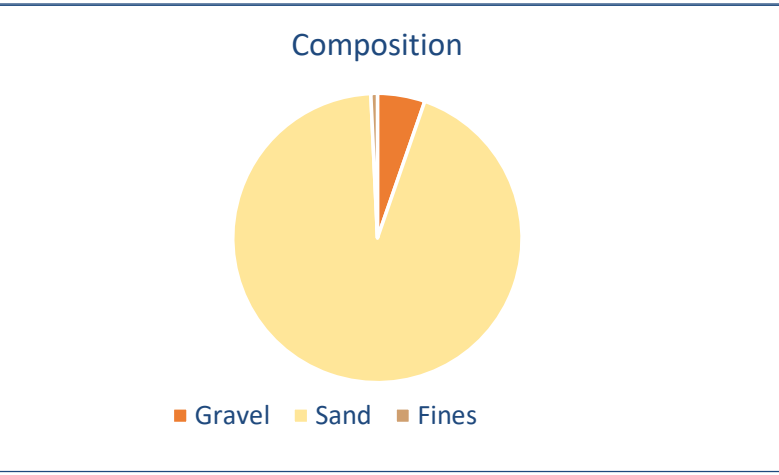
ENV37

N05a-Riffgat OWF Cable Route

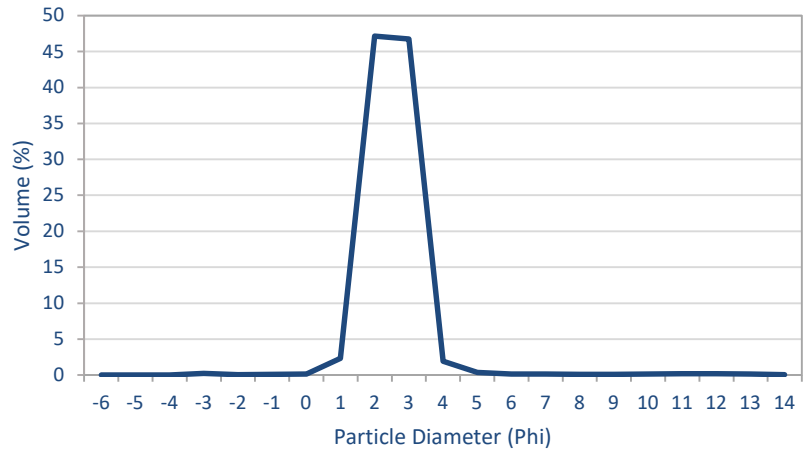


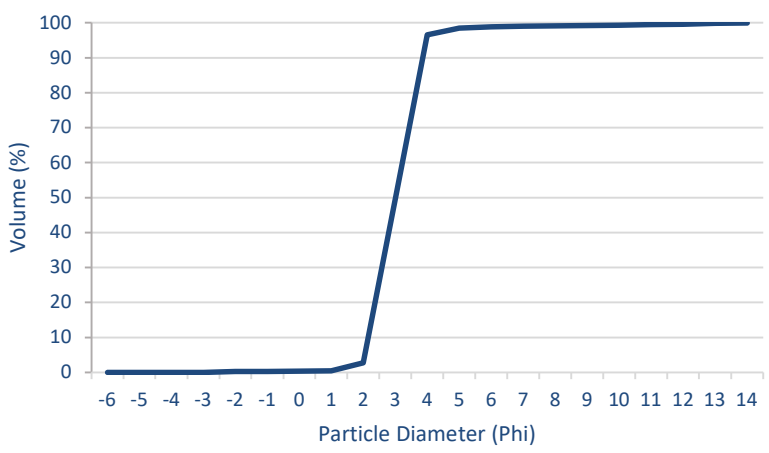


Graphic Folk and Ward	
Mean µm	623.677
Mean phi	0.681
Sorting Coefficient	1.005
Skewness	-0.025
Kurtosis	1.205
Classification	
Folk	Gravelly Sand
Wentworth	Coarse Sand
Composition	
Gravel	5%
Sand	94%
Fines	1%

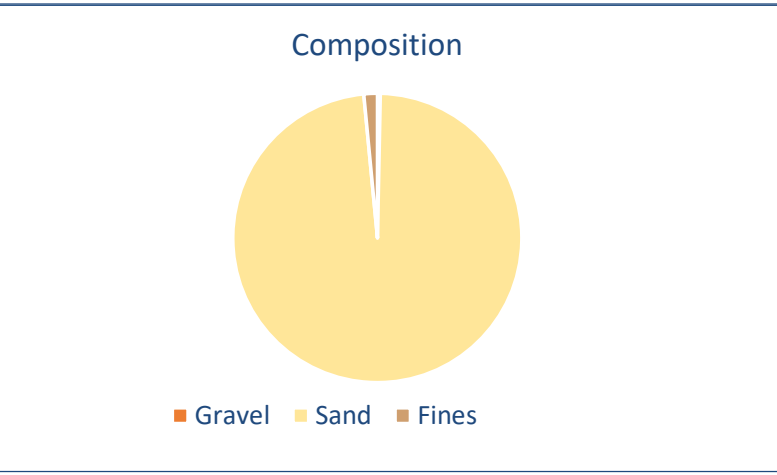


ENV38 **N05a-Riffgat OWF Cable Route**





Graphic Folk and Ward	
Mean µm	249.715
Mean phi	2.002
Sorting Coefficient	0.524
Skewness	0.005
Kurtosis	1.046
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	98%
Fines	1%



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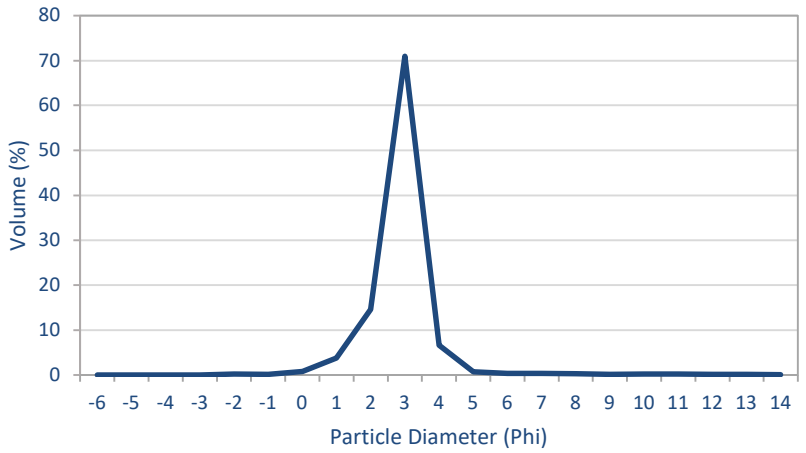
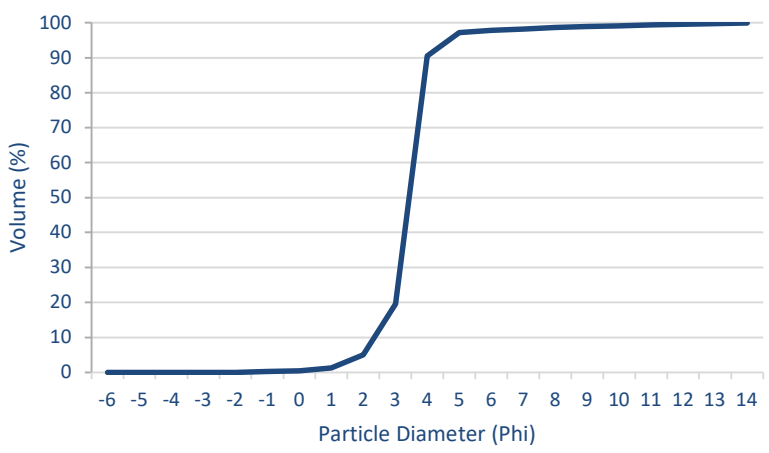
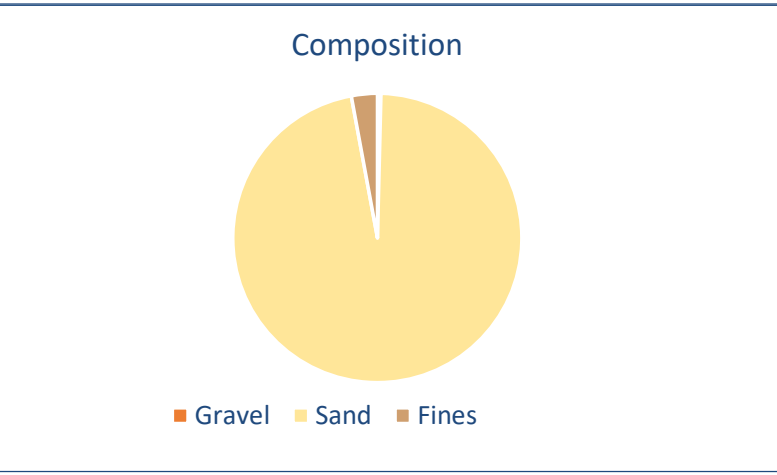
N05a-Riffgat OWF Cable Route

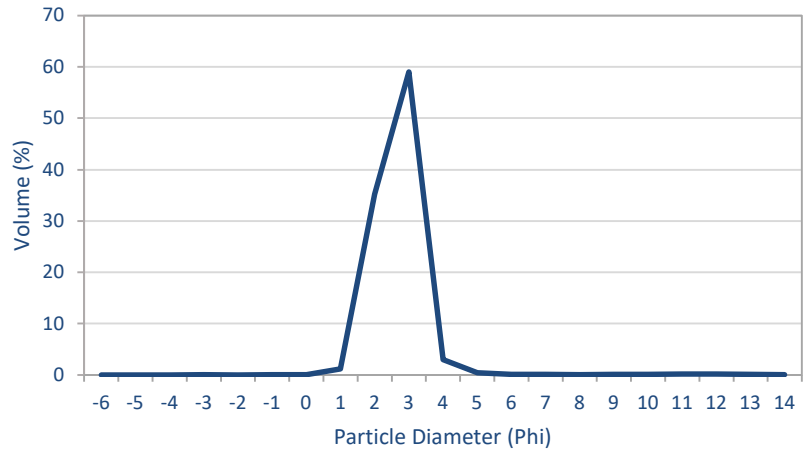


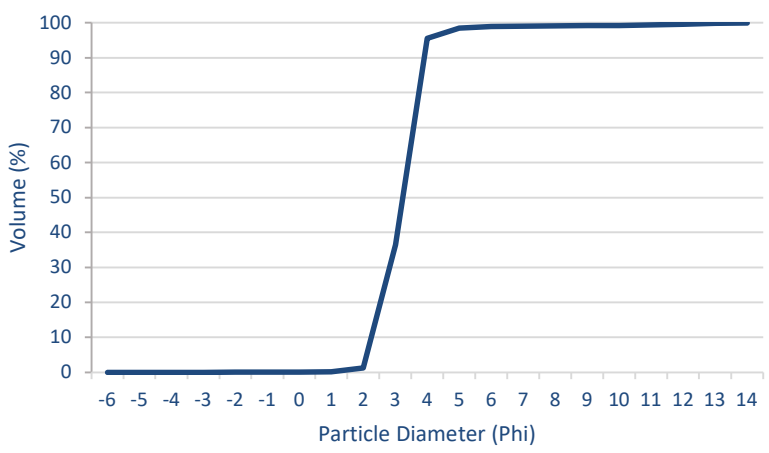


Graphic Folk and Ward	
Mean µm	192.393
Mean phi	2.378
Sorting Coefficient	0.624
Skewness	-0.091
Kurtosis	1.431
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	97%
Fines	3%

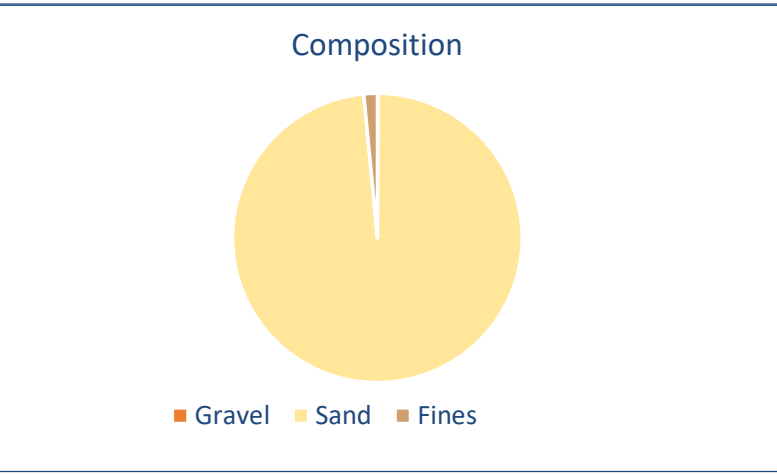


ENV40 **N05a-Riffgat OWF Cable Route**



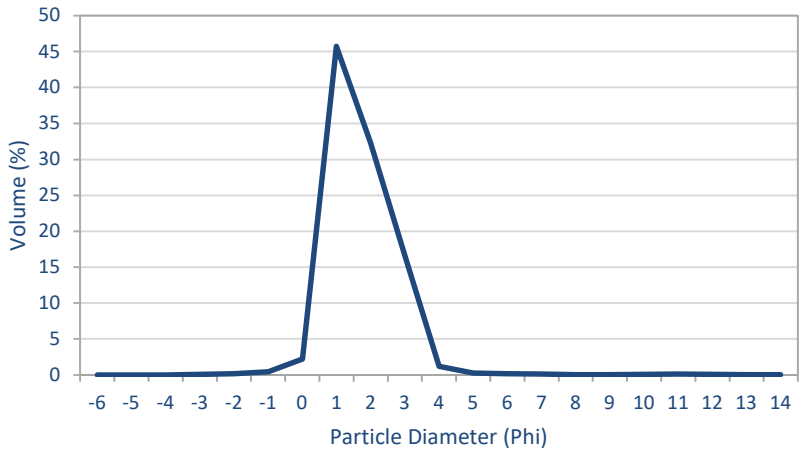


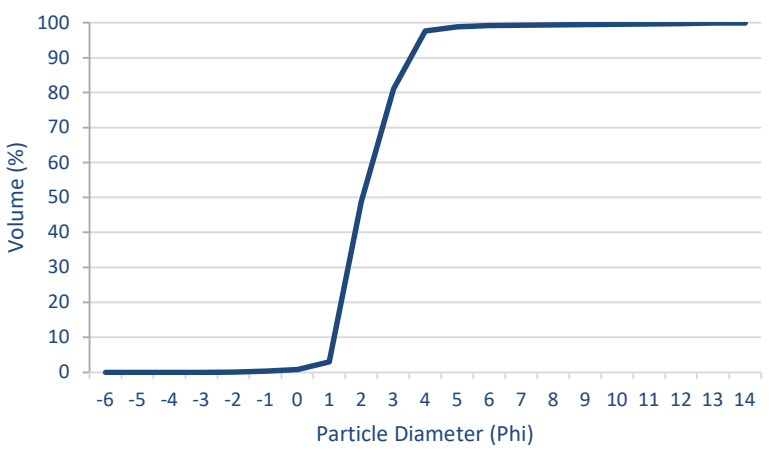
Graphic Folk and Ward	
Mean µm	222.193
Mean phi	2.170
Sorting Coefficient	0.518
Skewness	-0.012
Kurtosis	1.019
Classification	
Folk	Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	98%
Fines	2%



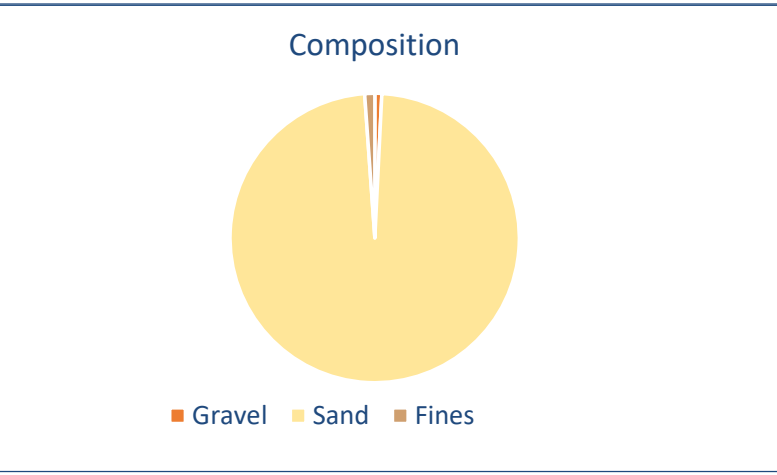
ENV41

N05a-Riffgat OWF Cable Route

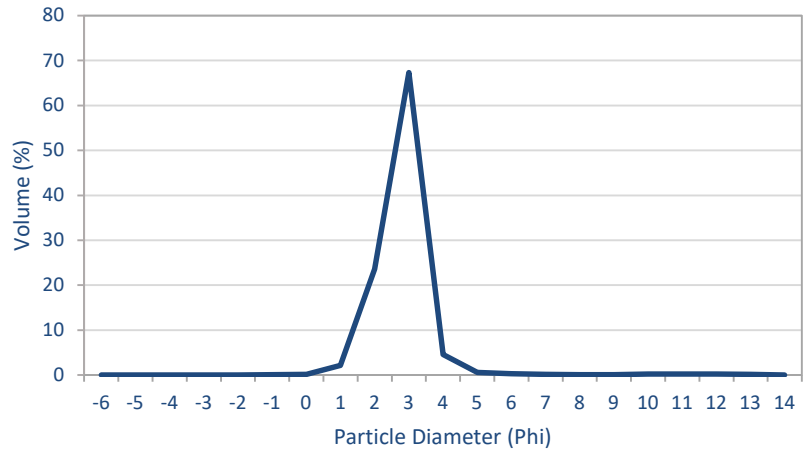


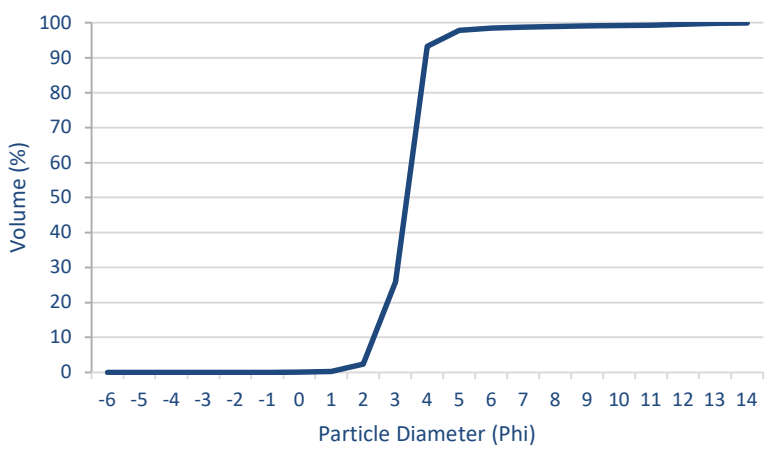


Graphic Folk and Ward	
Mean µm	438.015
Mean phi	1.191
Sorting Coefficient	0.842
Skewness	0.284
Kurtosis	0.993
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	1%
Sand	98%
Fines	1%

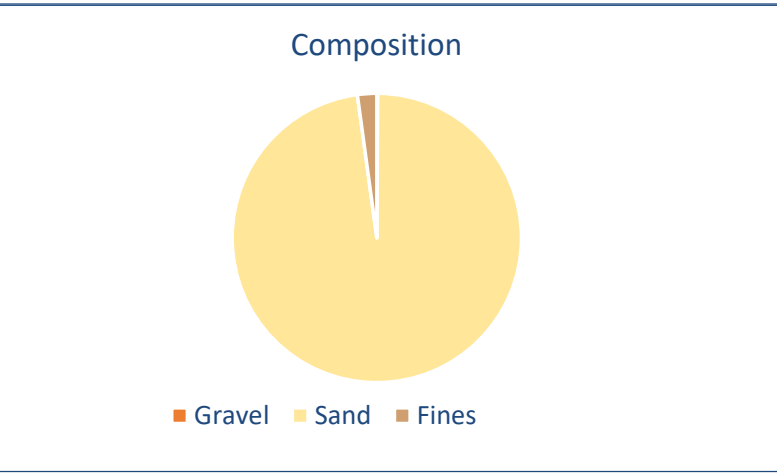


ENV42 **N05a-Riffgat OWF Cable Route**



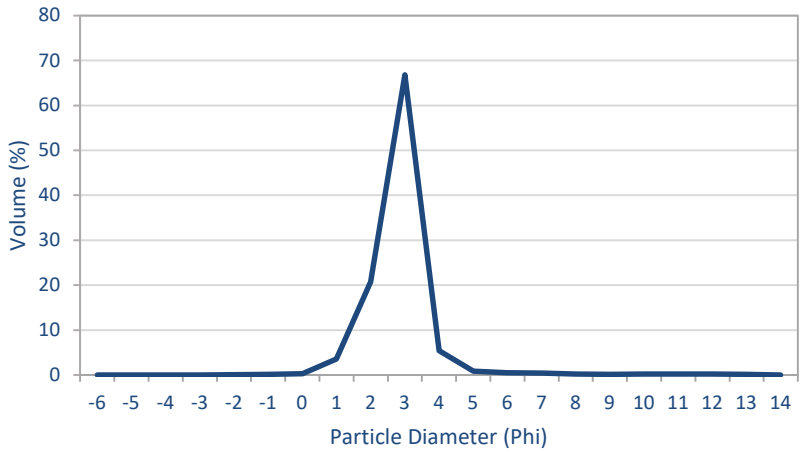


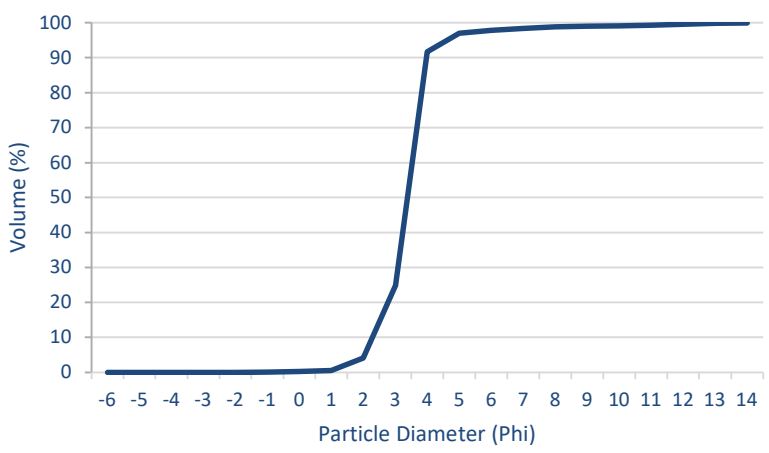
Graphic Folk and Ward	
Mean µm	204.781
Mean phi	2.288
Sorting Coefficient	0.538
Skewness	0.018
Kurtosis	1.108
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	98%
Fines	2%



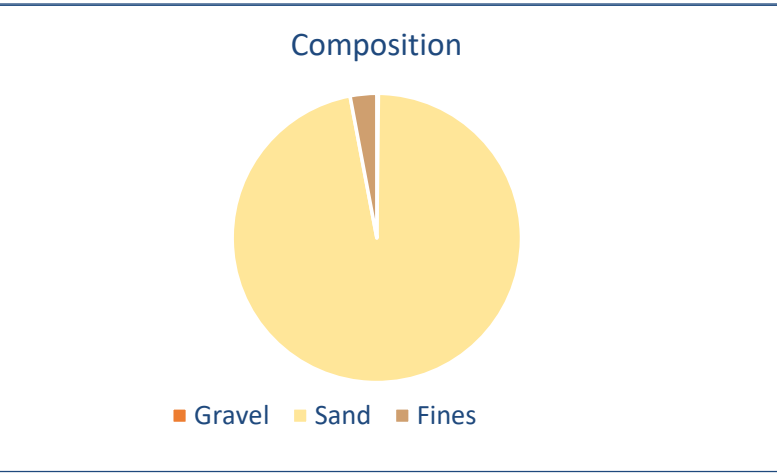
ENV43

N05a-Riffgat OWF Cable Route

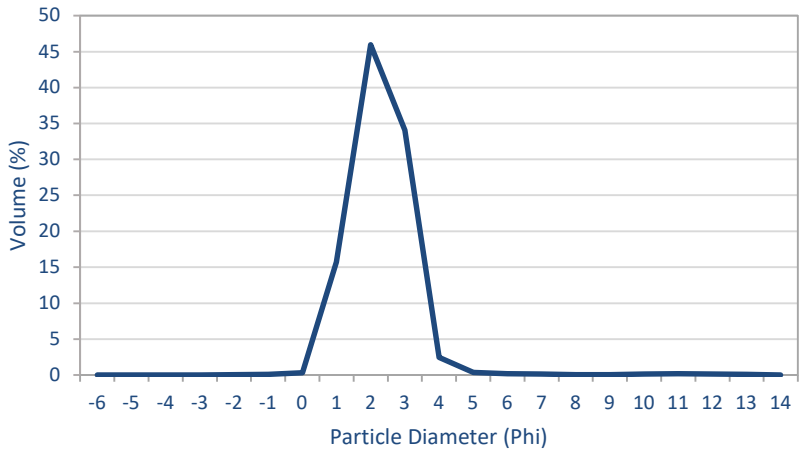


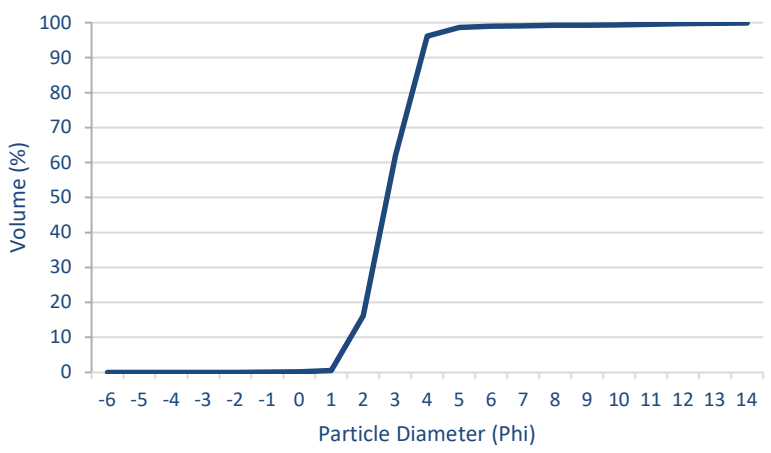


Graphic Folk and Ward	
Mean µm	202.102
Mean phi	2.307
Sorting Coefficient	0.615
Skewness	-0.040
Kurtosis	1.323
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Fine Sand
Composition	
Gravel	0%
Sand	97%
Fines	3%

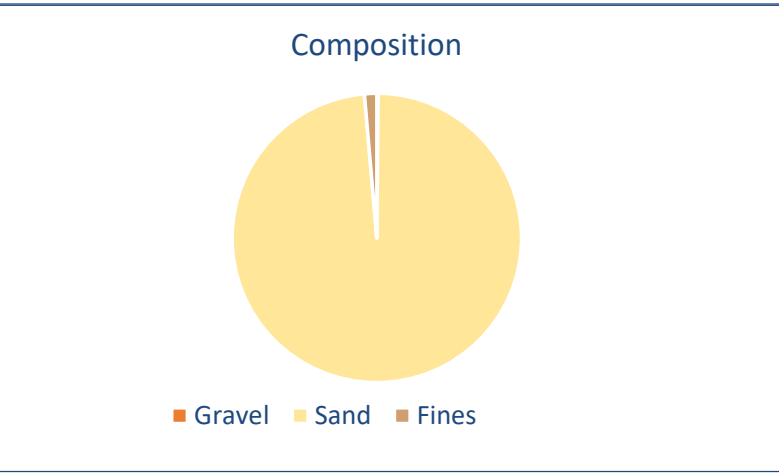


ENV44 **N05a-Riffgat OWF Cable Route**

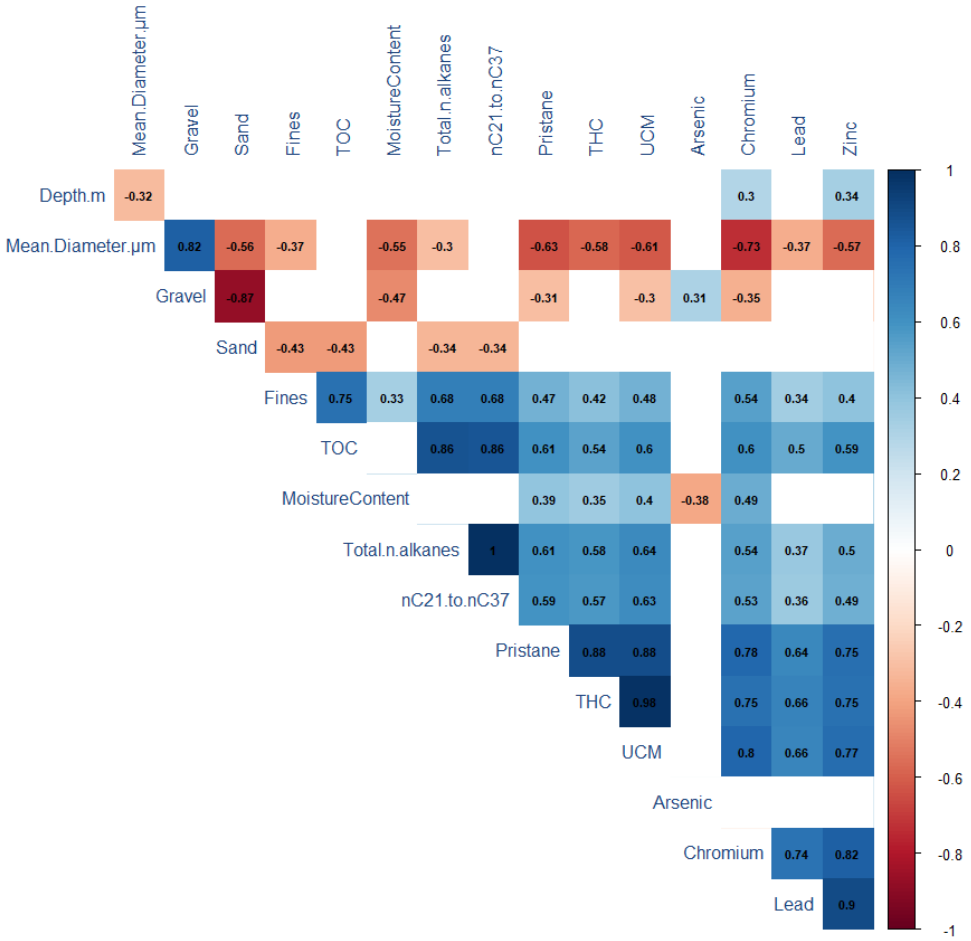




Graphic Folk and Ward	
Mean µm	299.283
Mean phi	1.740
Sorting Coefficient	0.734
Skewness	0.005
Kurtosis	0.896
Classification	
Folk	Slightly Gravelly Sand
Wentworth	Medium Sand
Composition	
Gravel	0%
Sand	98%
Fines	1%



Appendix F. Spearman's Rank Correlation Matrix and Grubb's Test

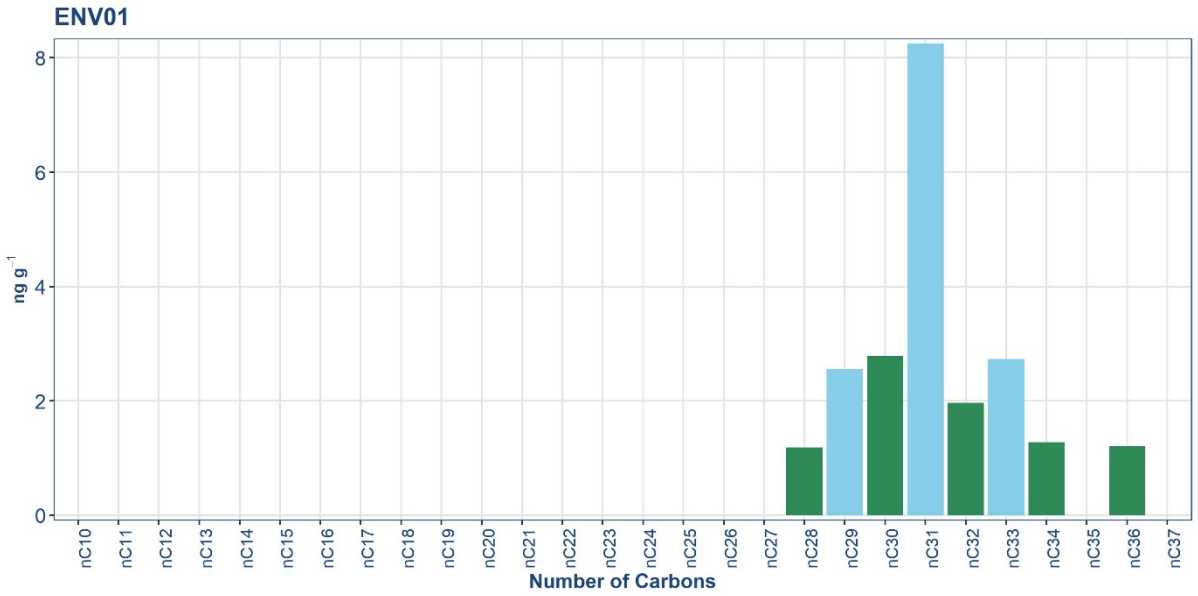


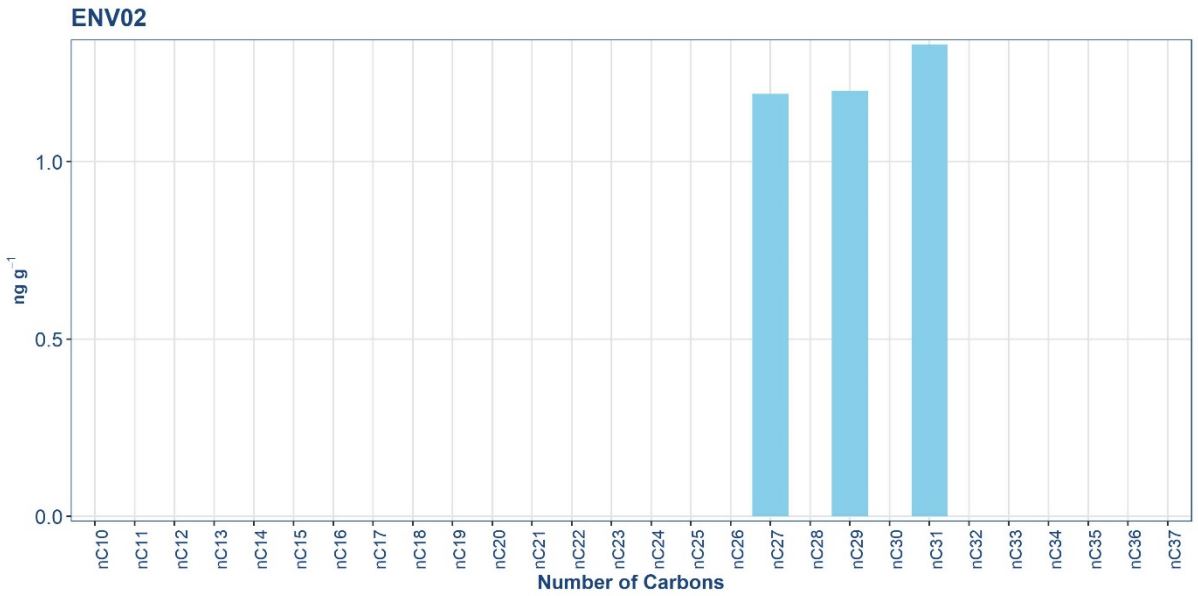
Blank cells represent insignificant correlations

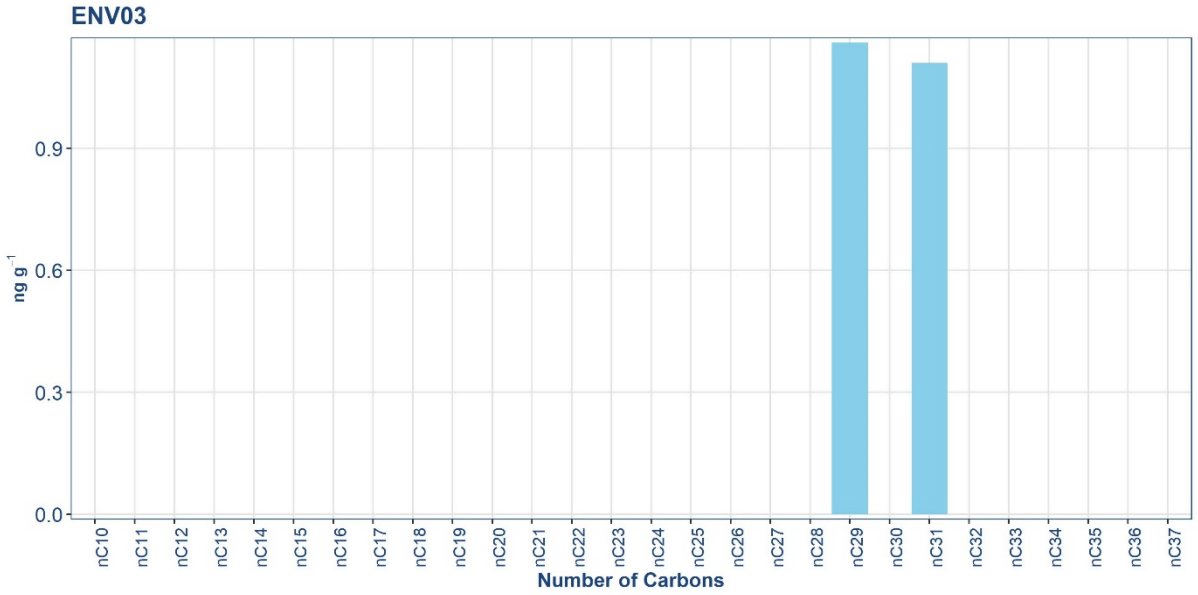
Variables	Grubb's Results (p-value)	
	Low outlier	High outlier
Depth (m)	1.00	0.45
Mean Diameter µm	1.00	*0.04
Gravel	1.00	*<0.01
Sand	1.00	*0.02
Fines	1.00	*<0.01
TOC	1.00	*0.02
Moisture Content	0.92	0.26
Total n°alkanes	1.00	*<0.01
nC_{21} - nC_{37}	1.00	*<0.01
Pristane	1.00	0.58
THC	1.00	*0.01
UCM	1.00	*0.01
Arsenic	0.93	*<0.01
Chromium	1.00	0.17
Lead	1.00	1.00
Zinc	1.00	1.00

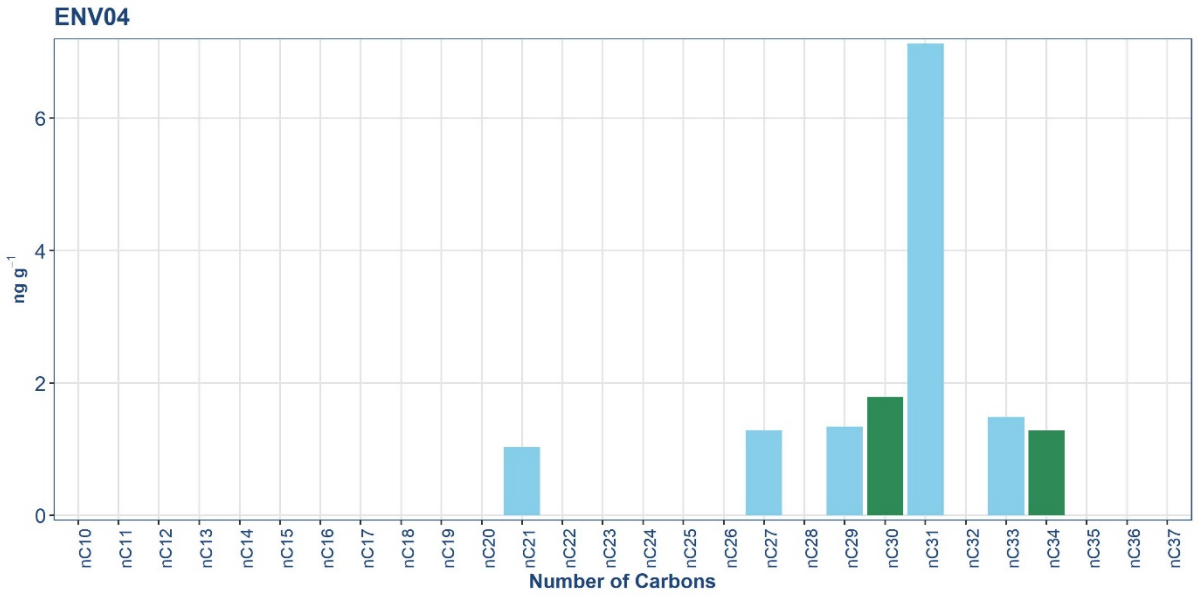
* statistically significant outlier (p-value <0.05)

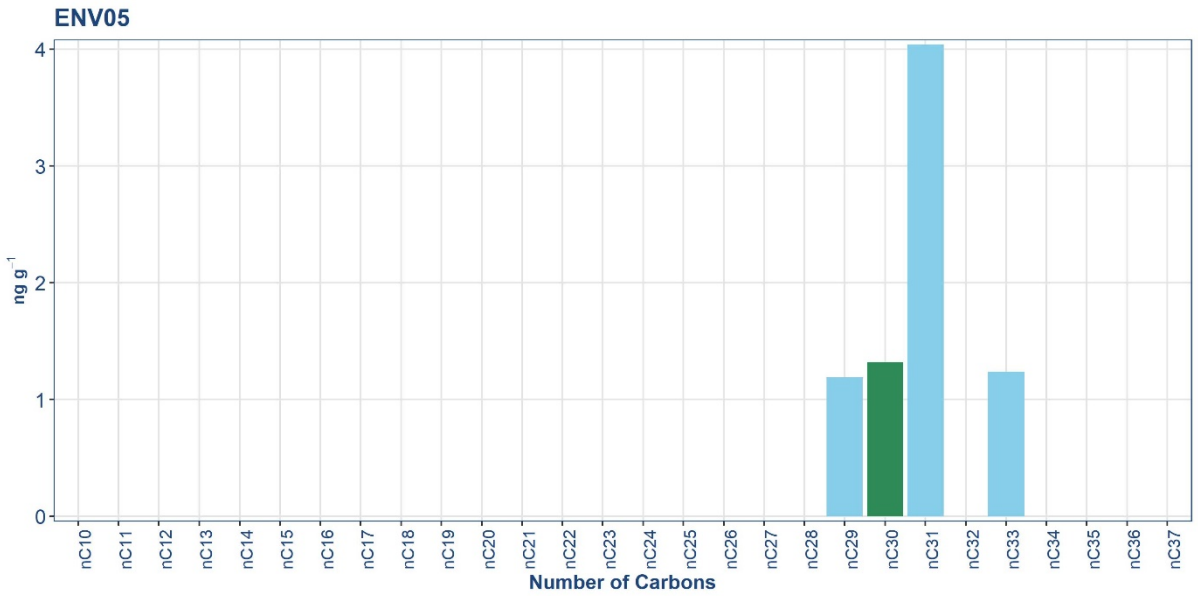
Appendix G. Hydrocarbons

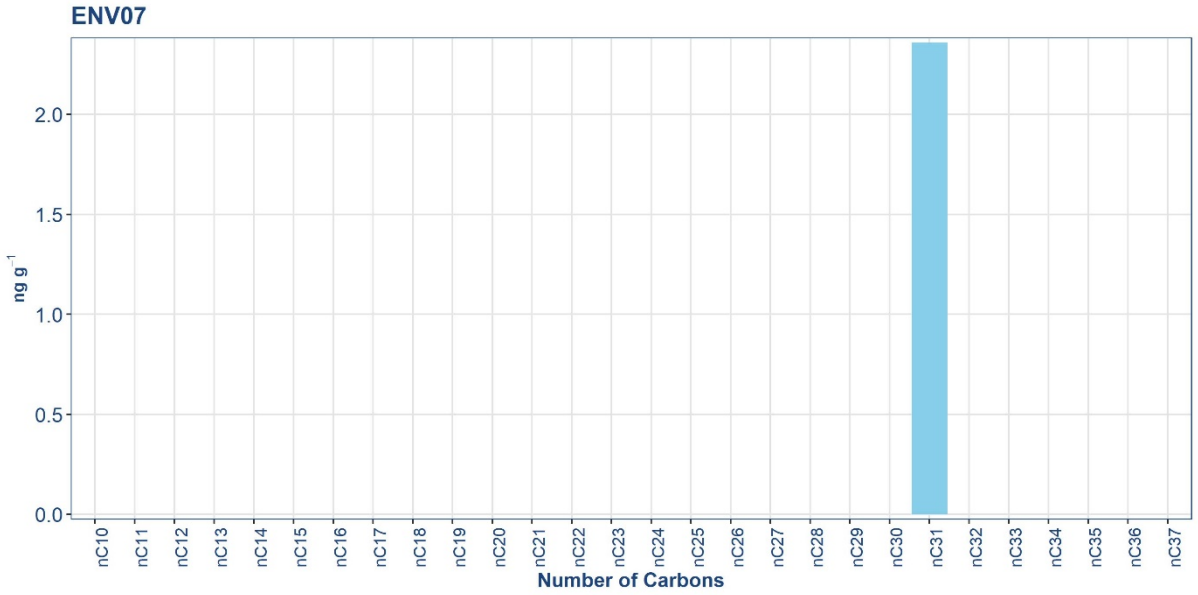


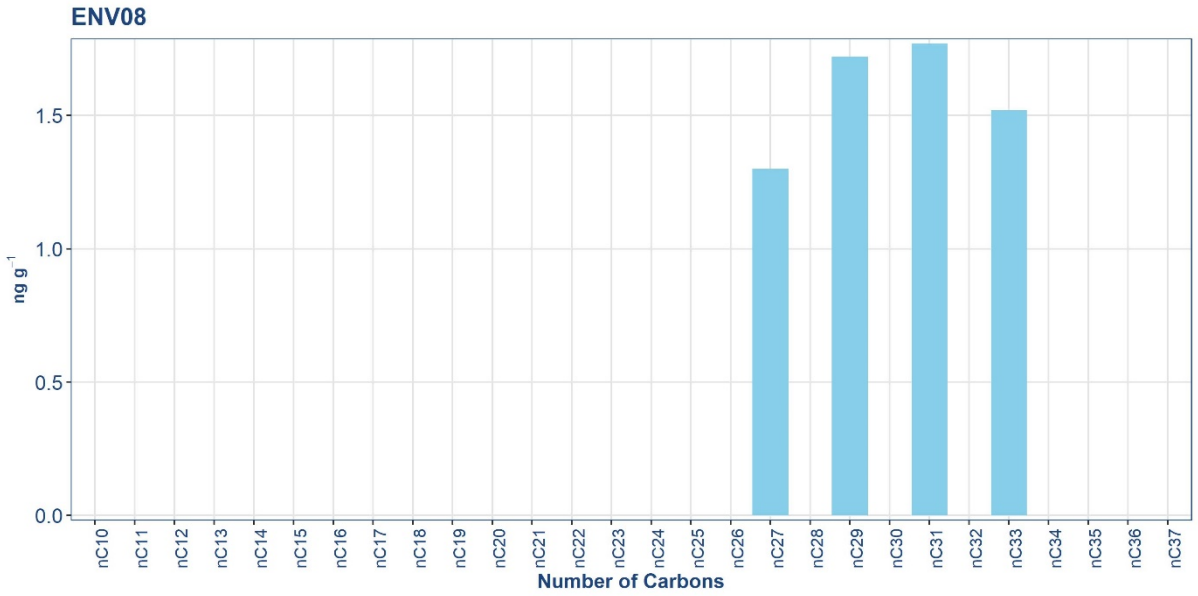


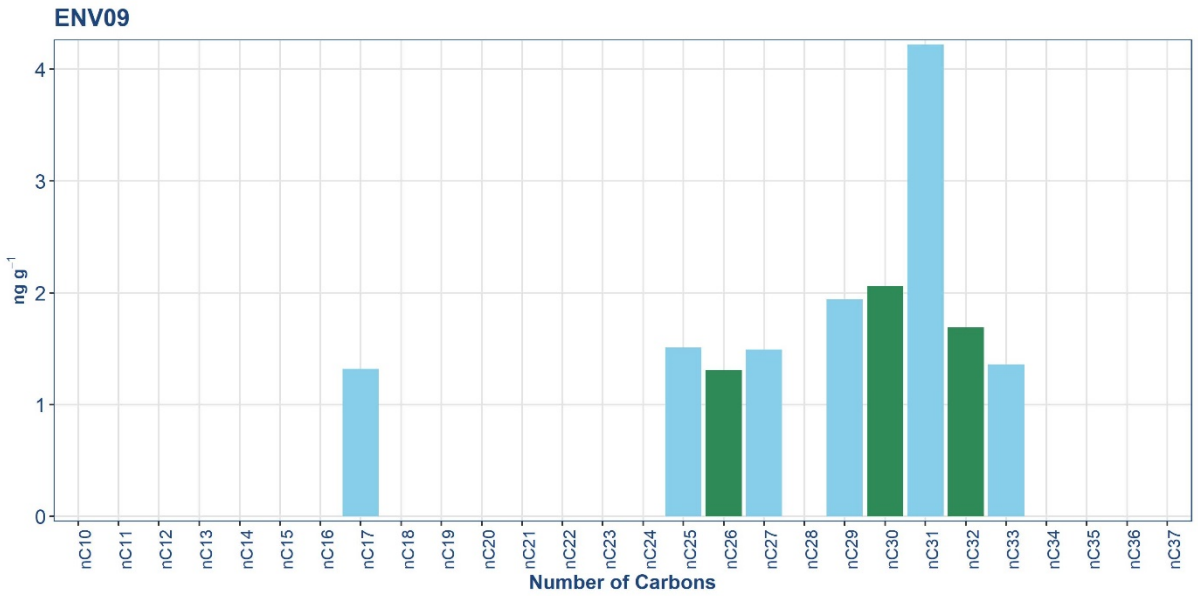

ENV03
ng g⁻¹
0.0
0.3
0.6
0.9
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

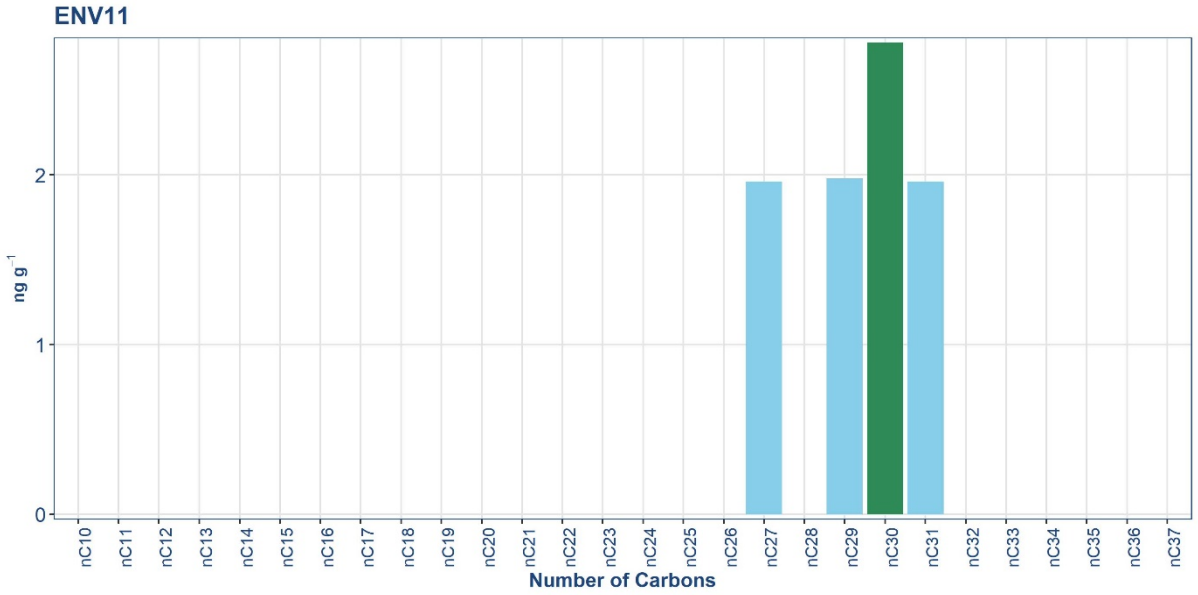

ENV04
ng g⁻¹
0
2
4
6
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

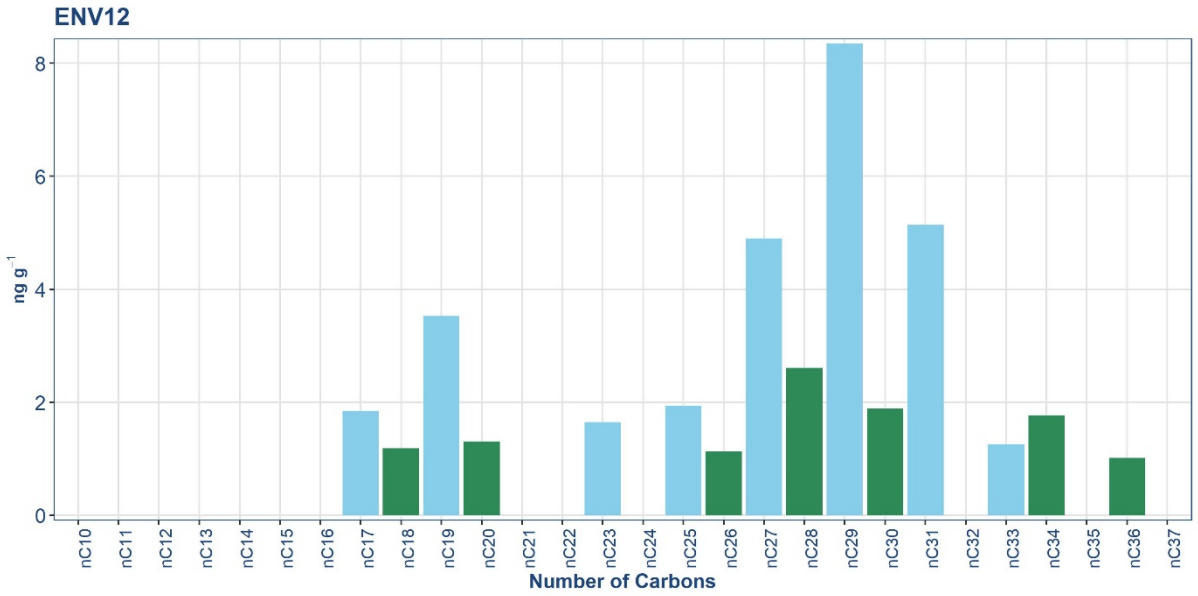

ENV05
ng g⁻¹
0
1
2
3
4
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

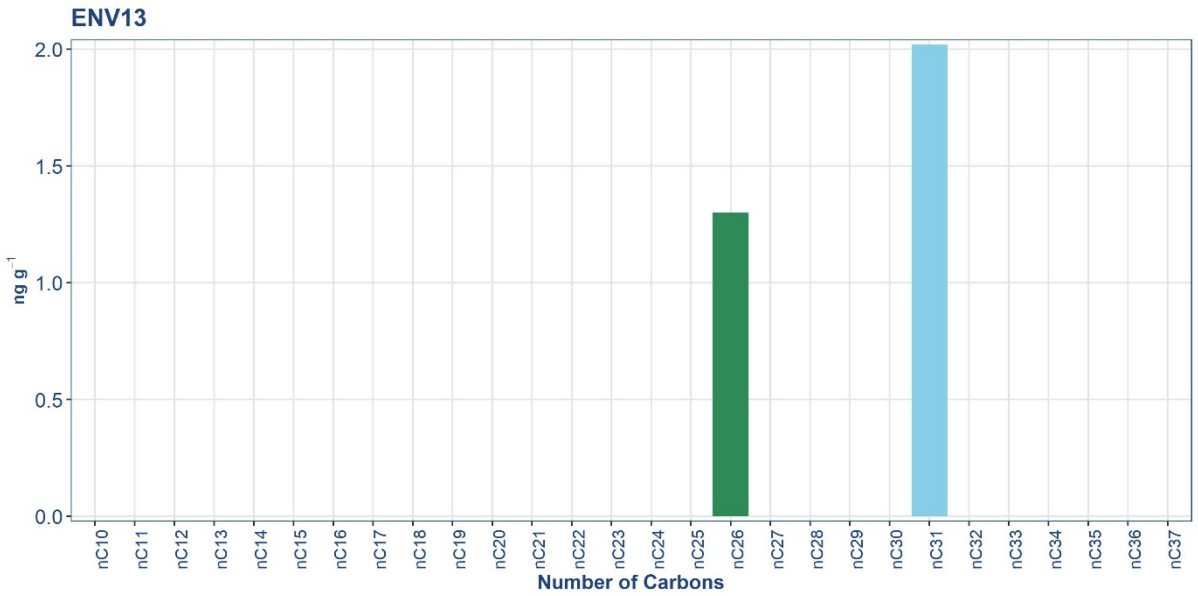

ENV07
ng g⁻¹
0.0
0.5
1.0
1.5
2.0
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

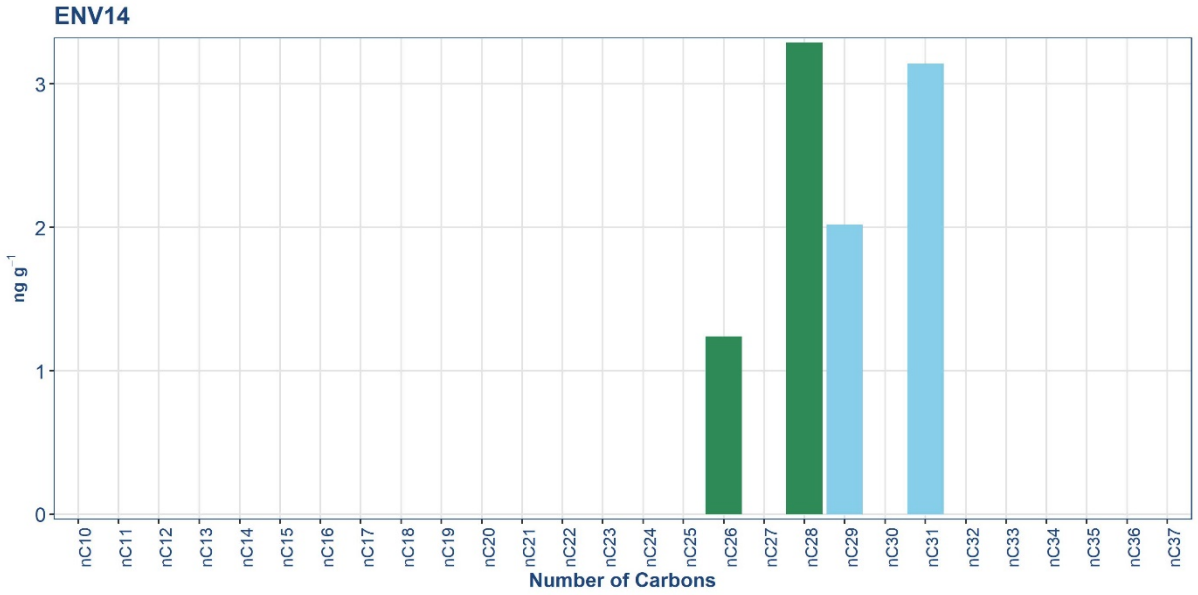

ENV08
ng g⁻¹
0.0
0.5
1.0
1.5
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

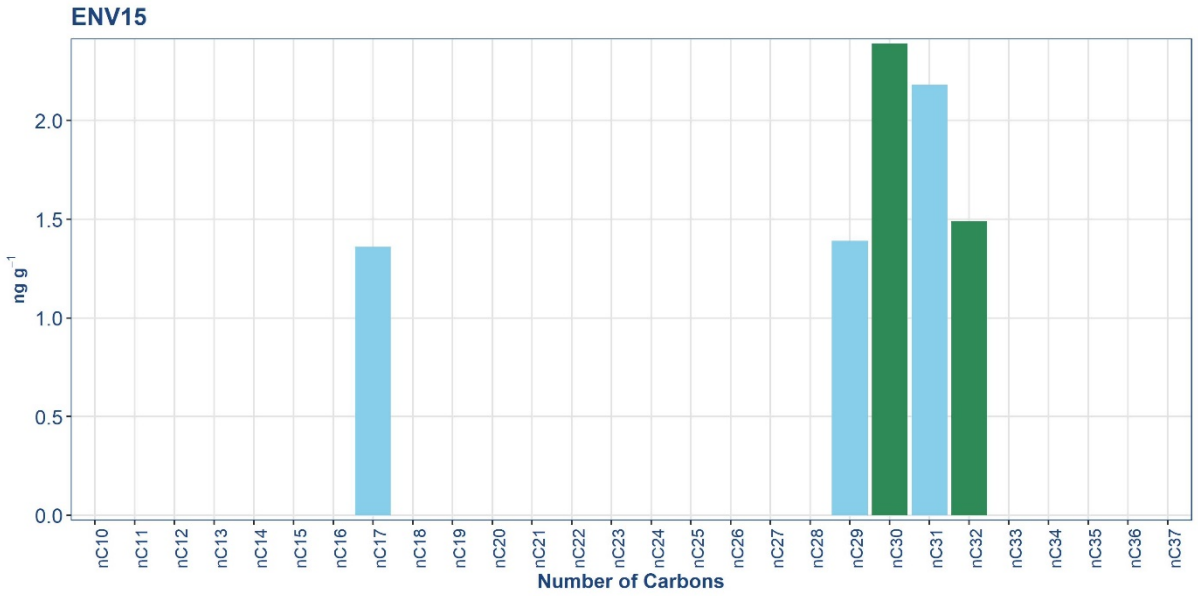

ENV09
ng g⁻¹
0
1
2
3
4
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

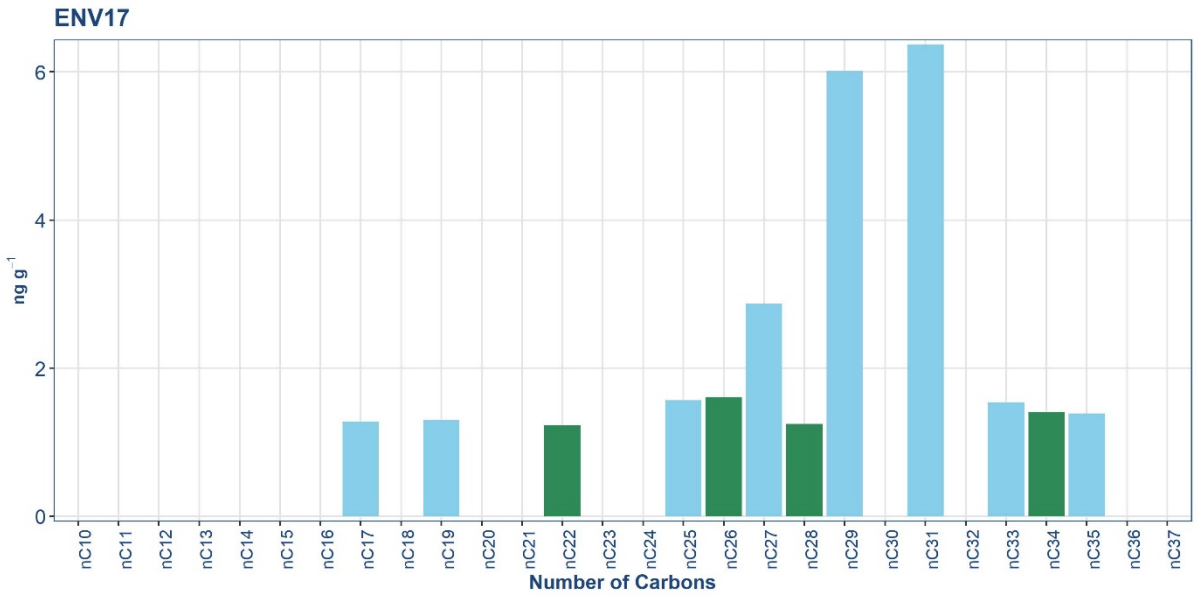

ENV11
ng g⁻¹
0
1
2
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

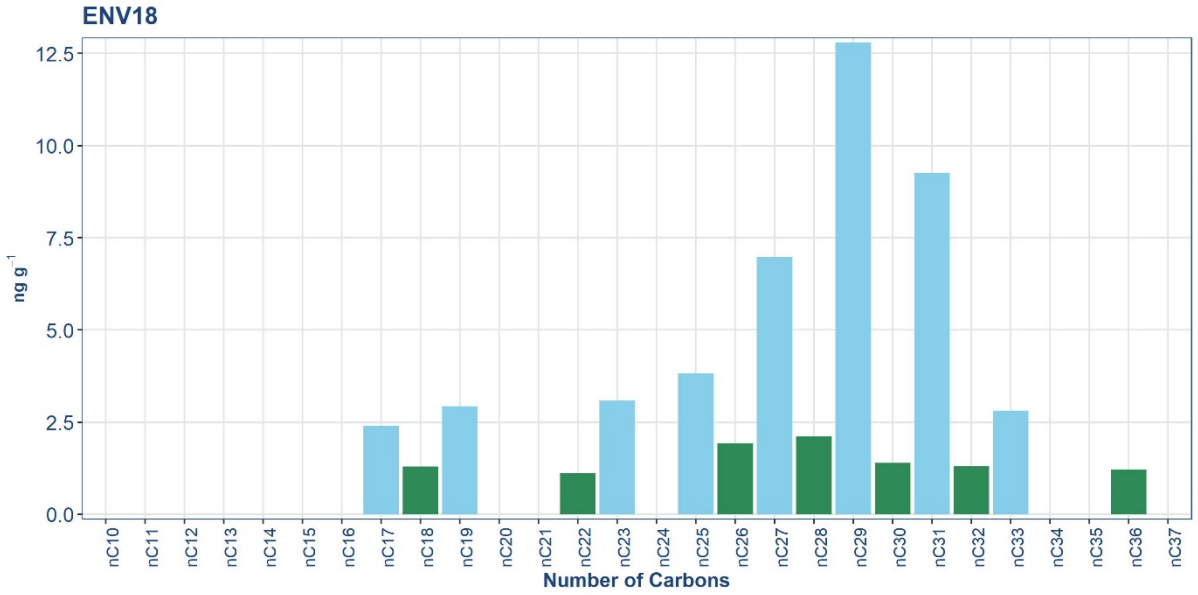

ENV12
ng g⁻¹
0
2
4
6
8
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

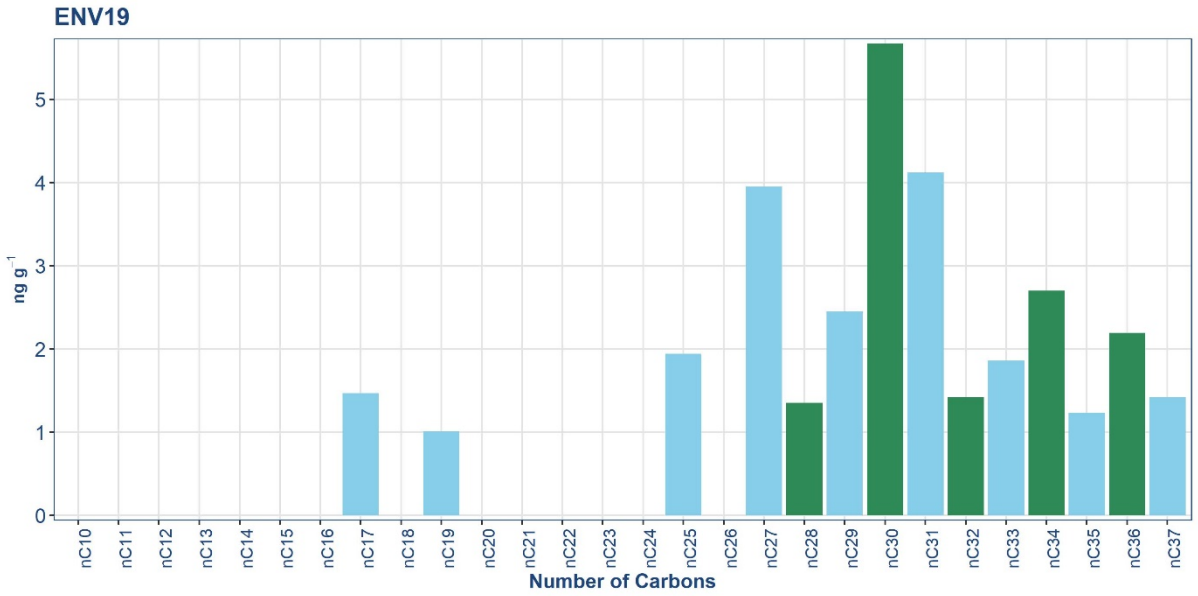

ENV13
ng g⁻¹
0.0
0.5
1.0
1.5
2.0
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

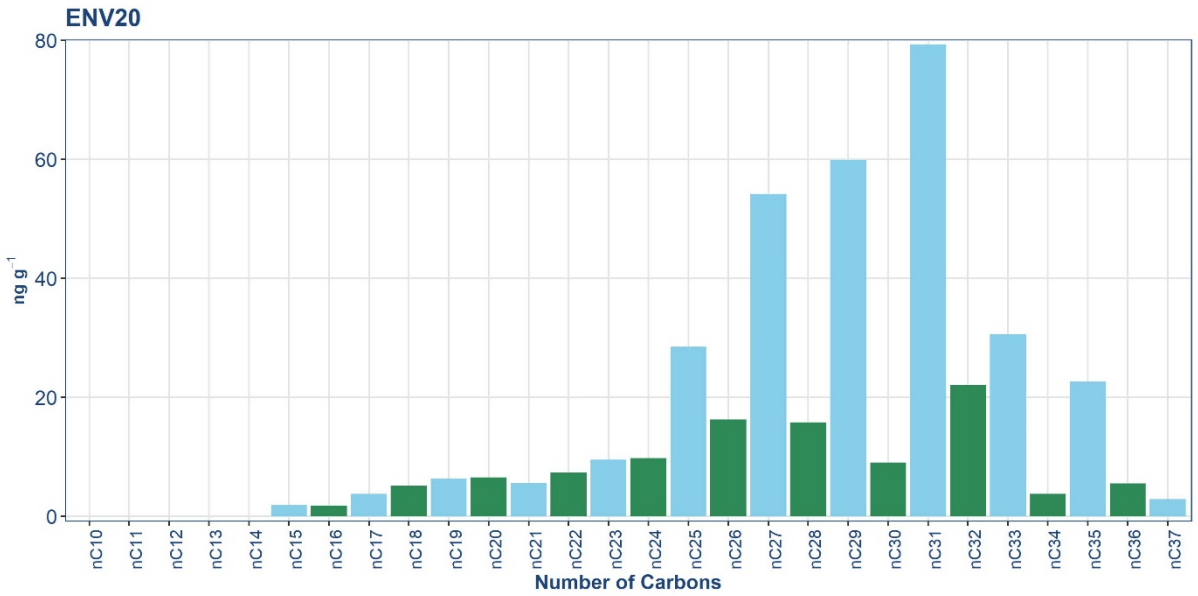

ENV14
ng g⁻¹
0
1
2
3
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

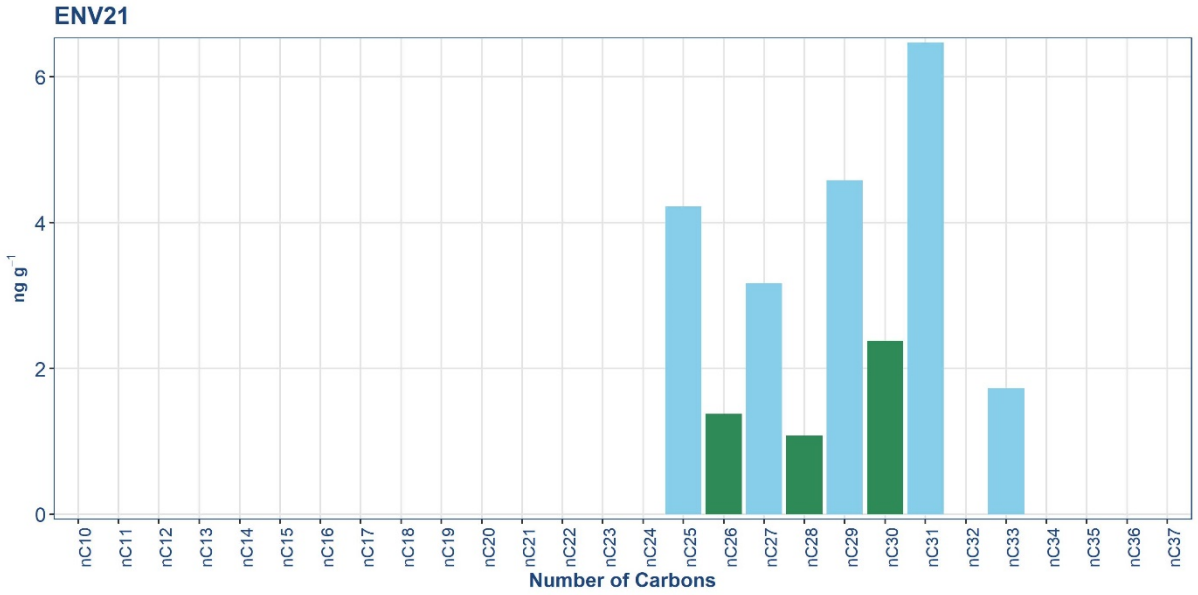

ENV15
ng g⁻¹
0.0
0.5
1.0
1.5
2.0
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

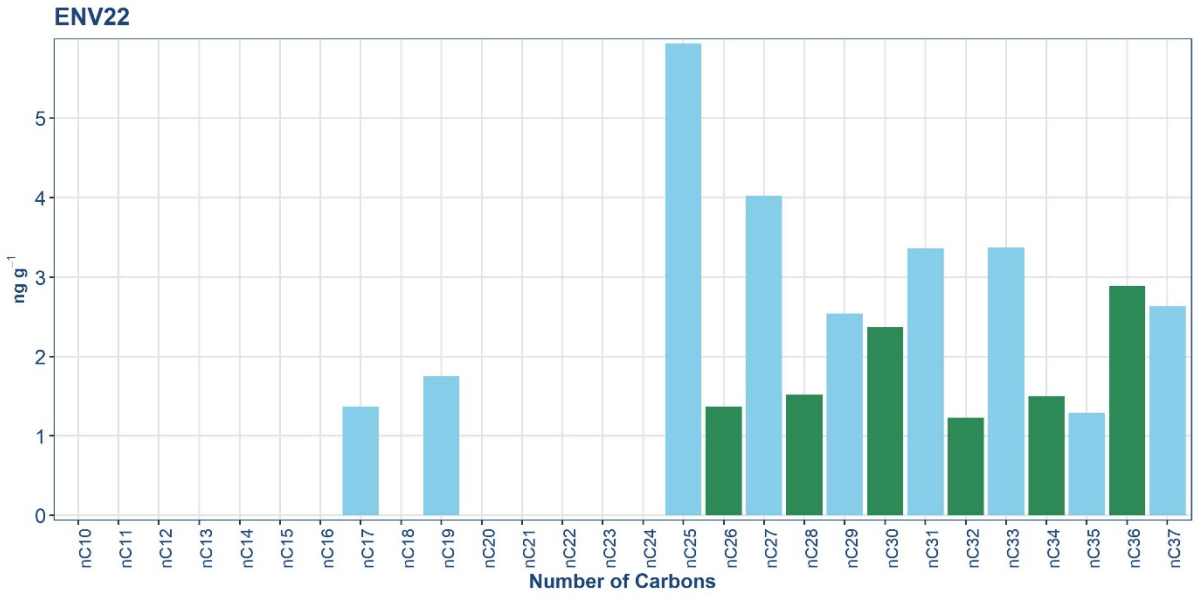

ENV17
ng g⁻¹
0
2
4
6
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

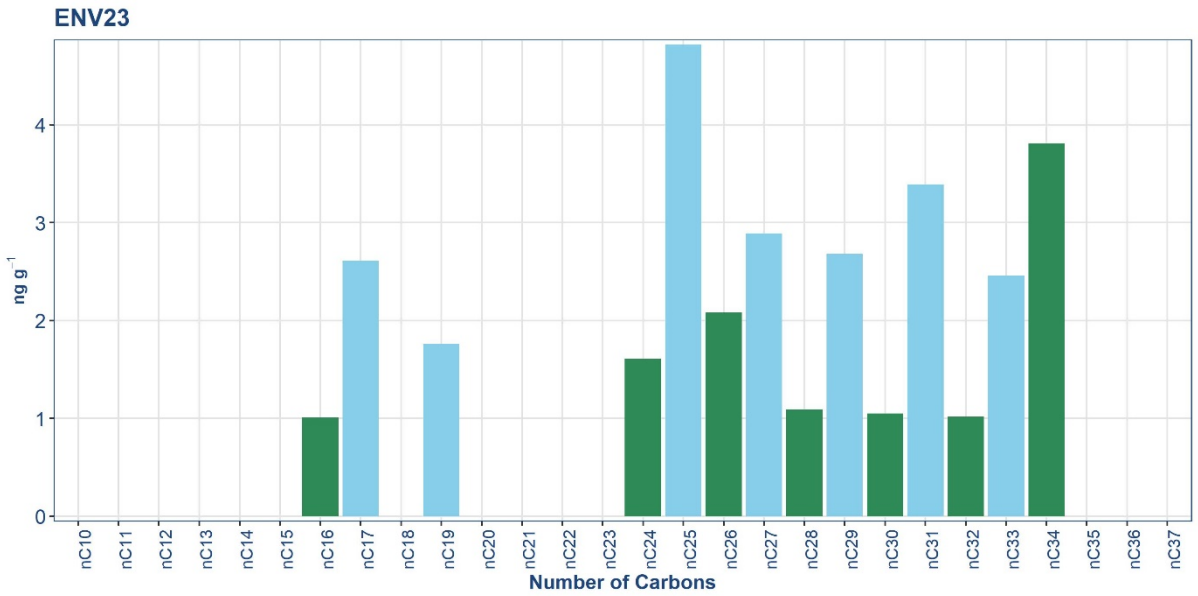

ENV18
ng g⁻¹
12.5
10.0
7.5
5.0
2.5
0.0
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

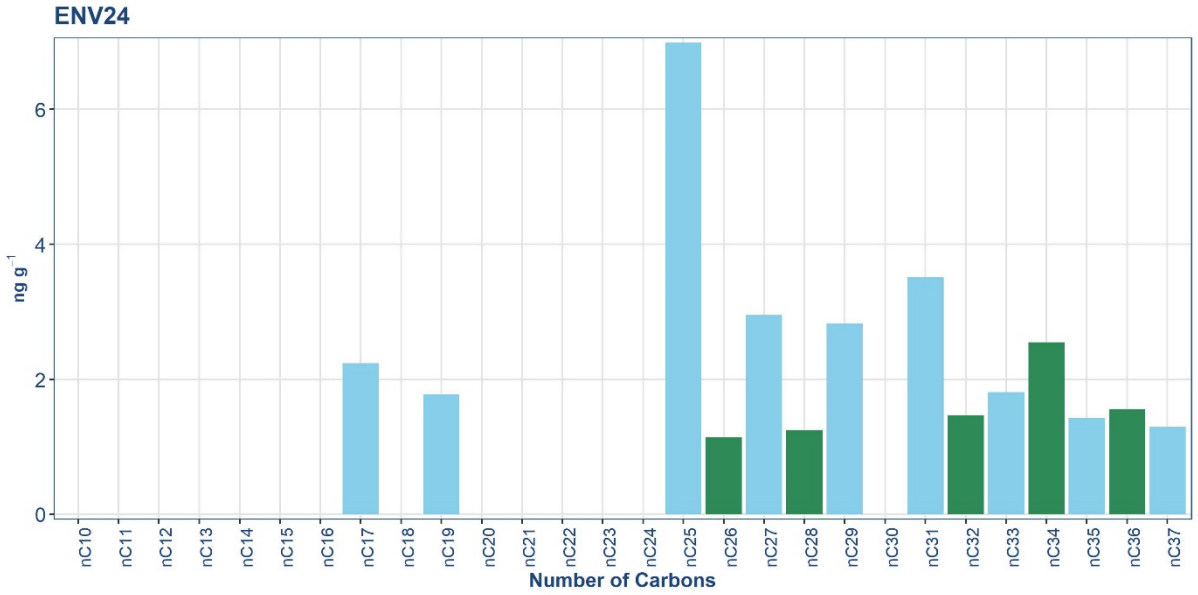

ENV19
ng g⁻¹
5
4
3
2
1
0
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

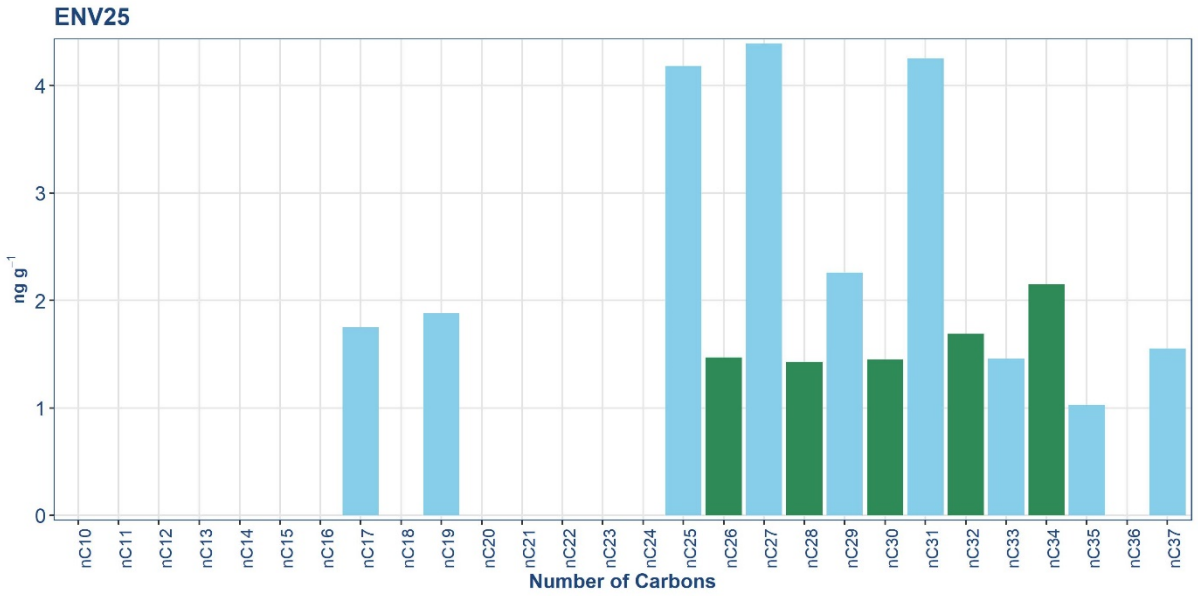

ENV20
ng g⁻¹
80
60
40
20
0
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

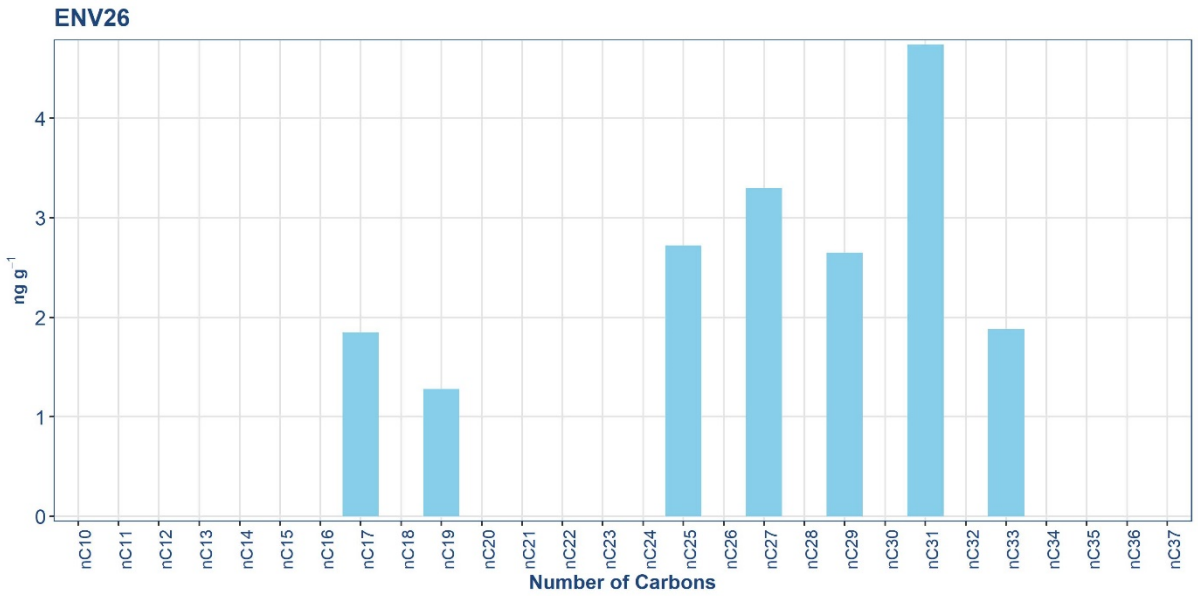

ENV21
ng g-1
0
2
4
6
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

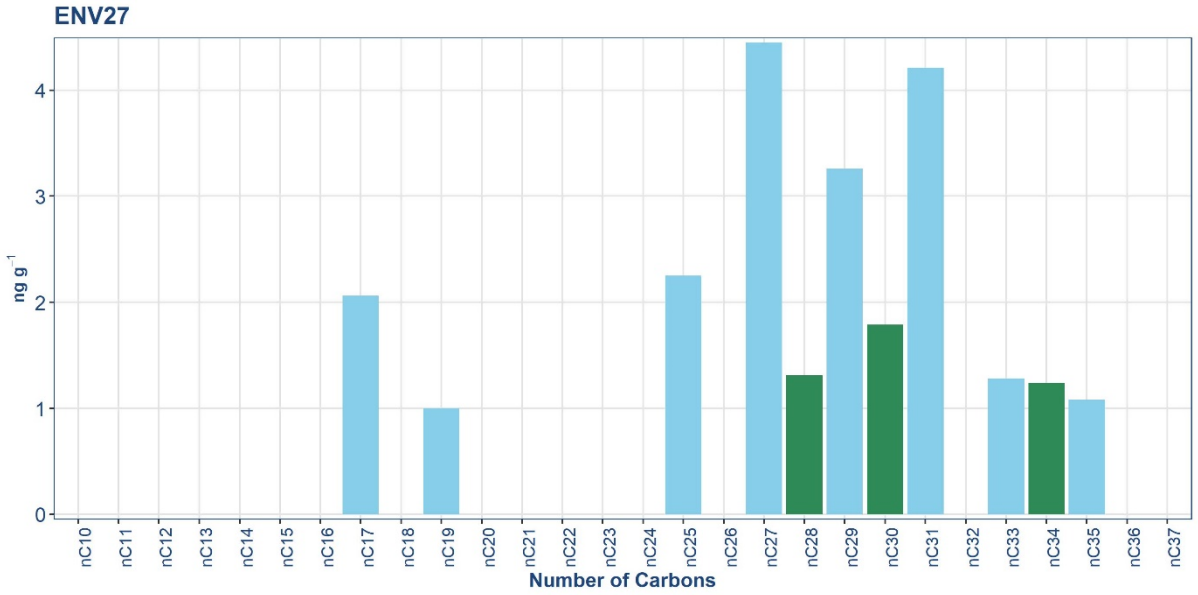

ENV22
ng g-1
0
1
2
3
4
5
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

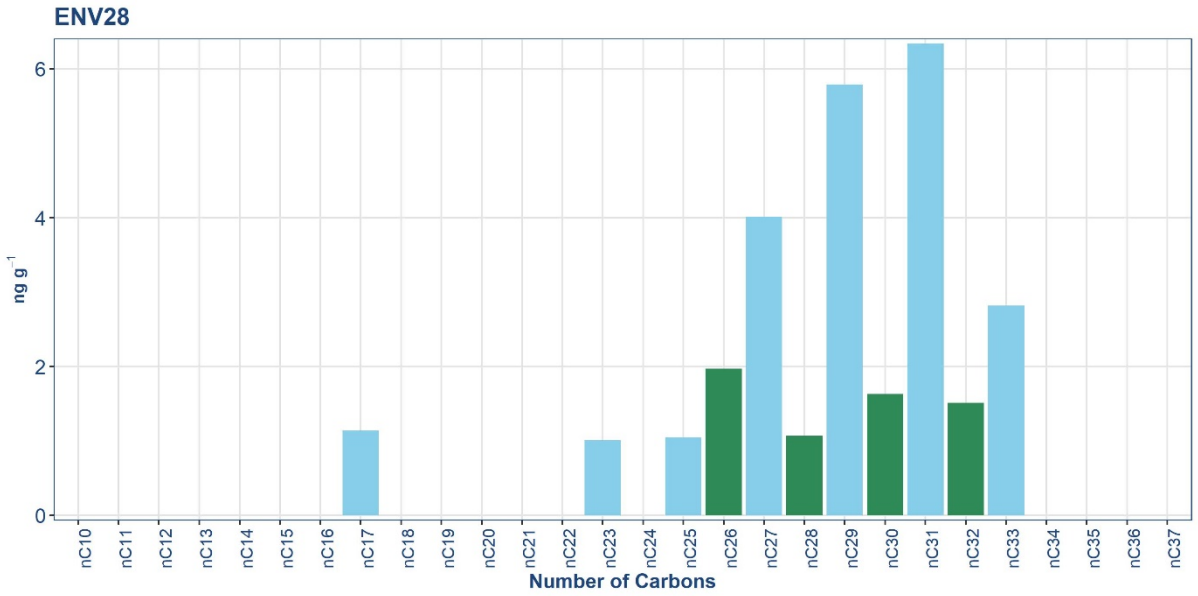

ENV23
ng g-1
0
1
2
3
4
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

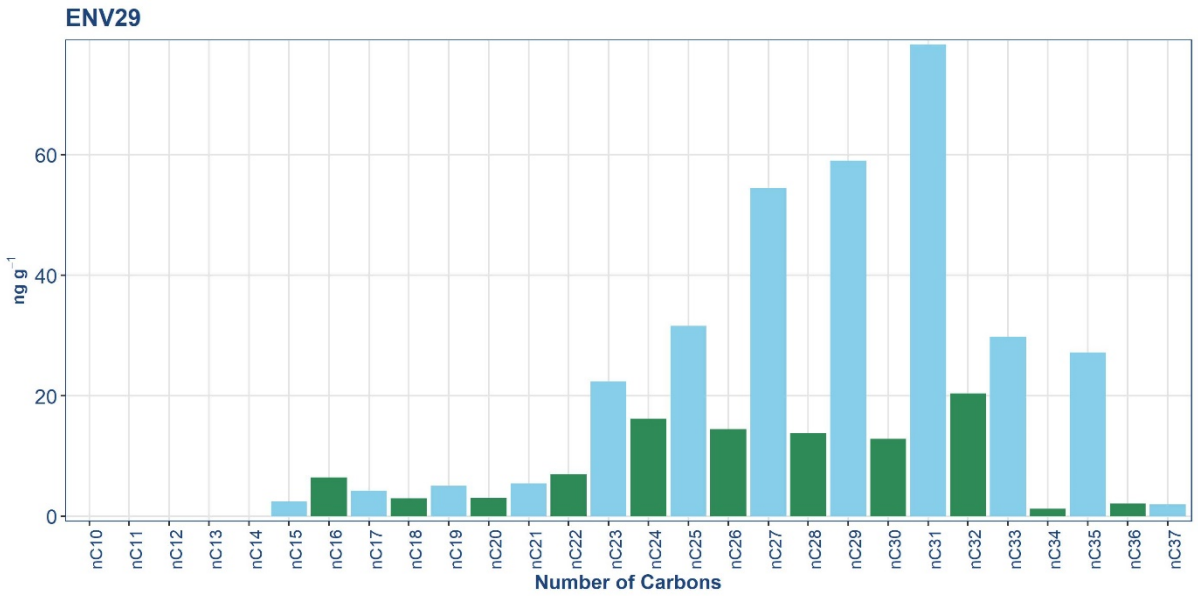

ENV24
ng g⁻¹
0
2
4
6
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

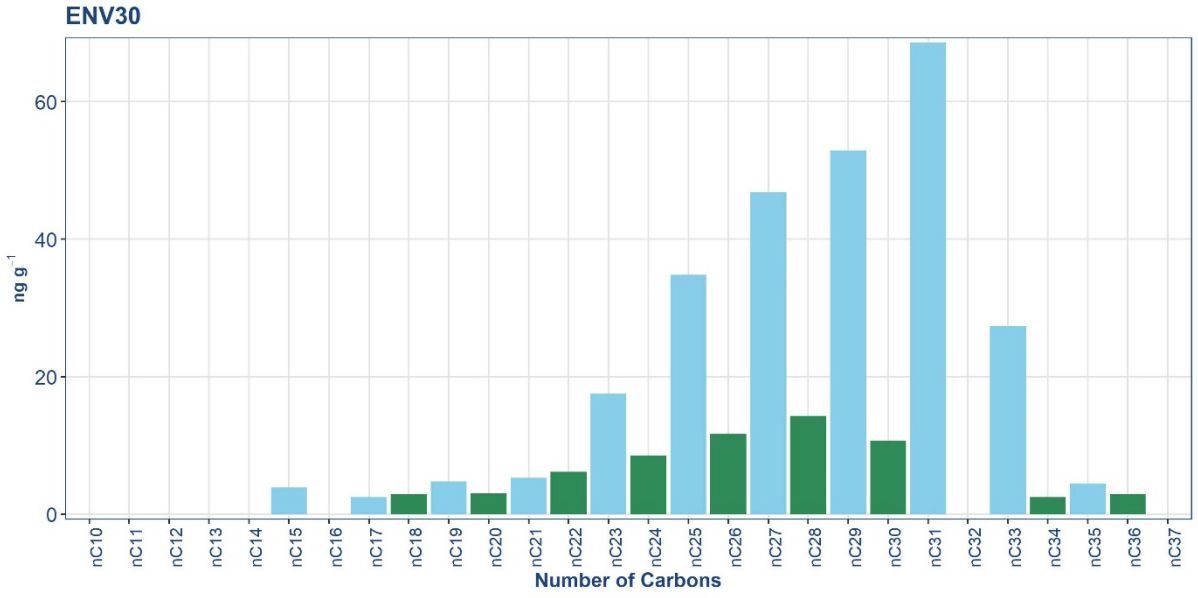

ENV25
ng g⁻¹
0
1
2
3
4
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

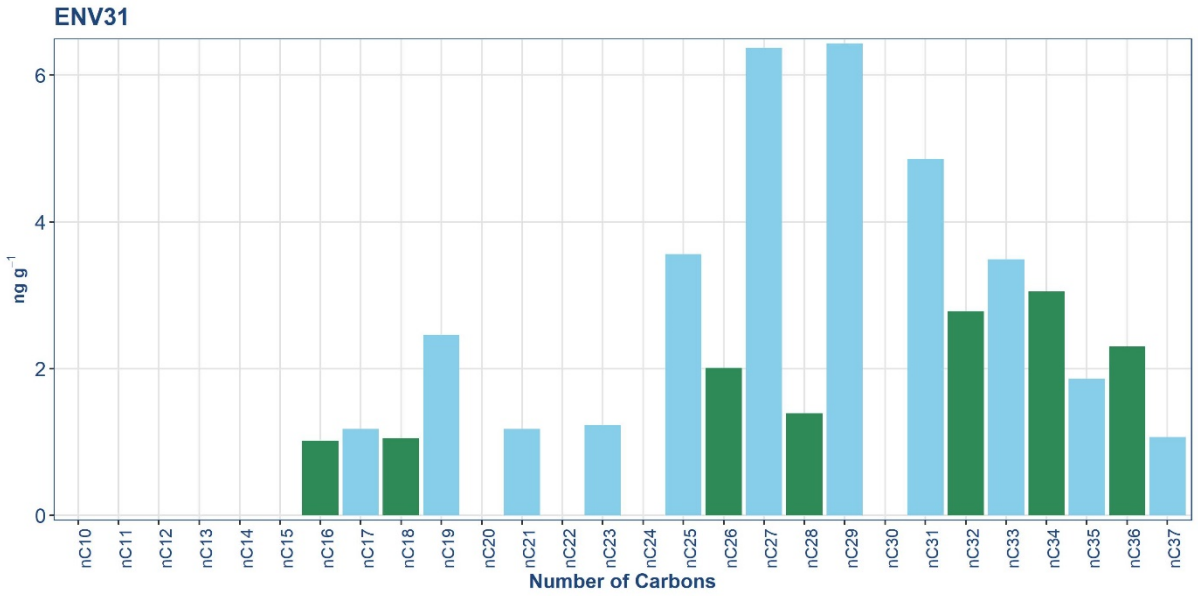

ENV26
ng g⁻¹
0
1
2
3
4
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

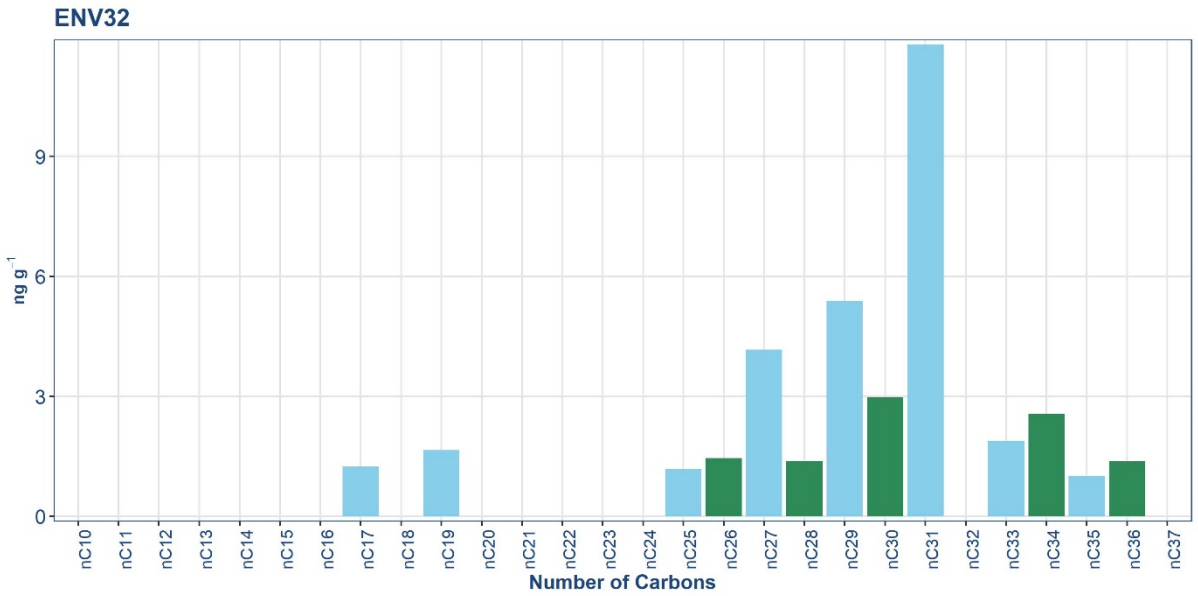

ENV27
ng g⁻¹
0
1
2
3
4
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

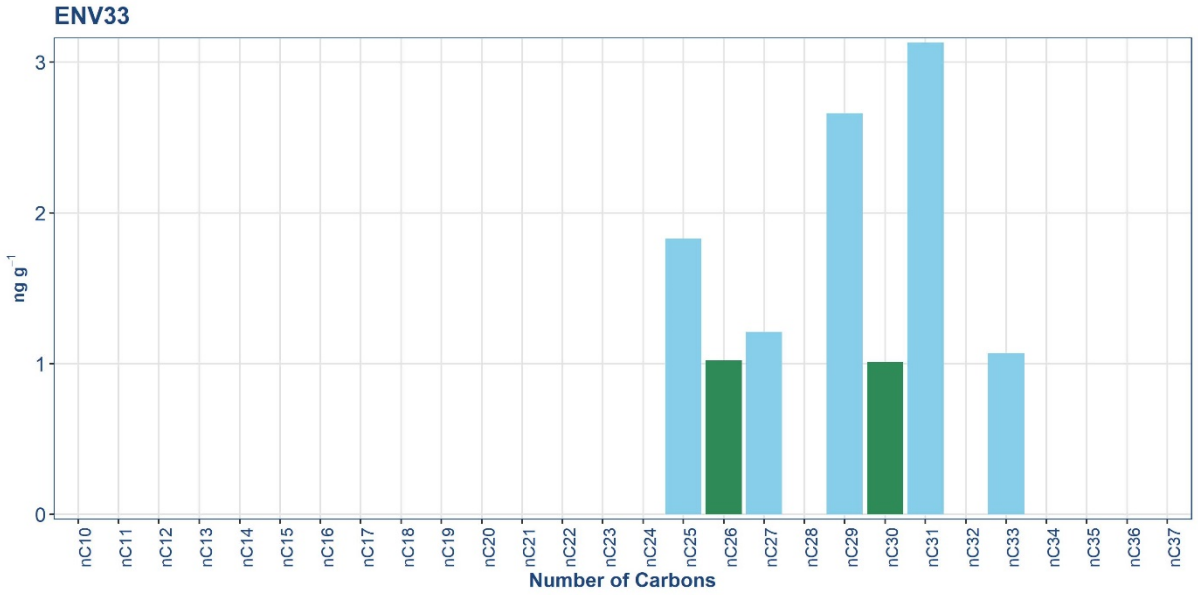

ENV28
ng g⁻¹
0
2
4
6
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

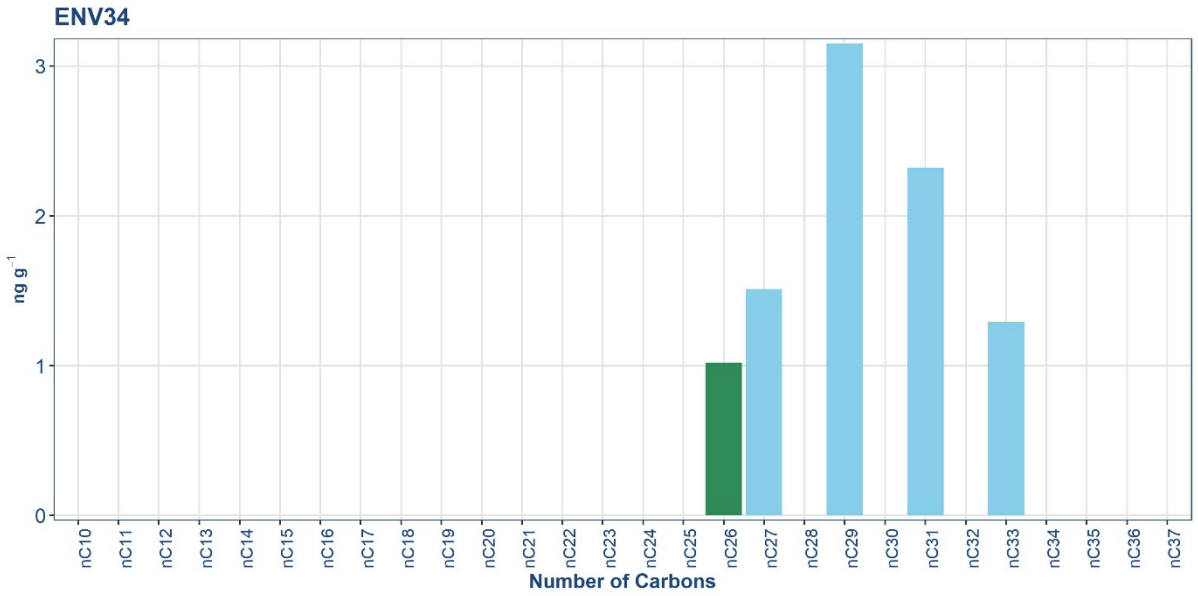

ENV29
ng g⁻¹
0
20
40
60
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

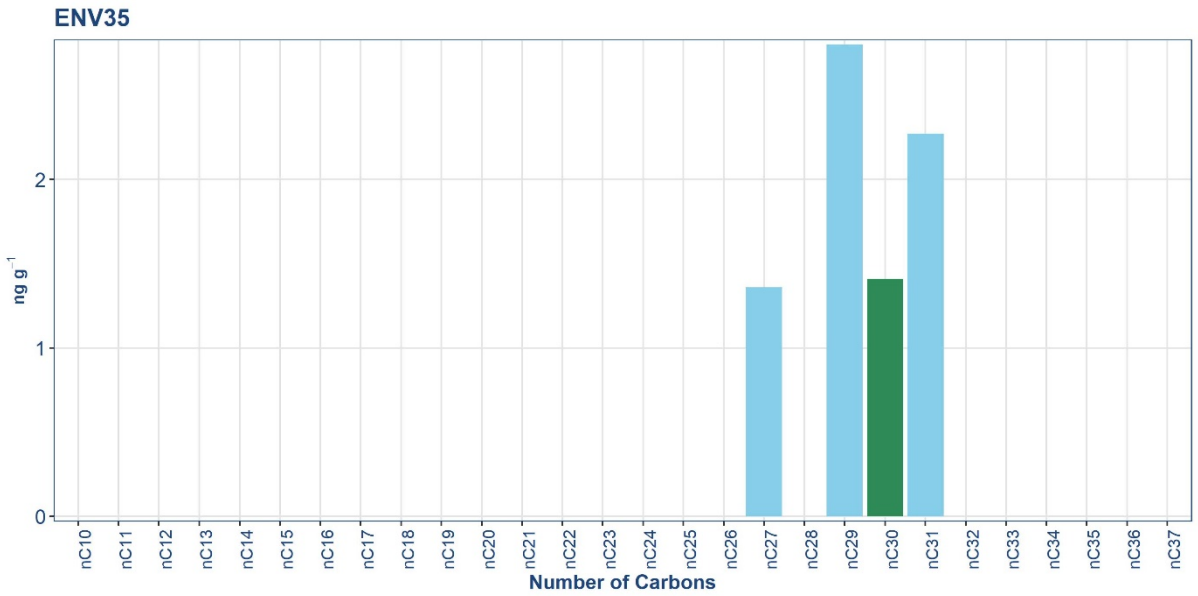

ENV30
ng g⁻¹
0
20
40
60
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

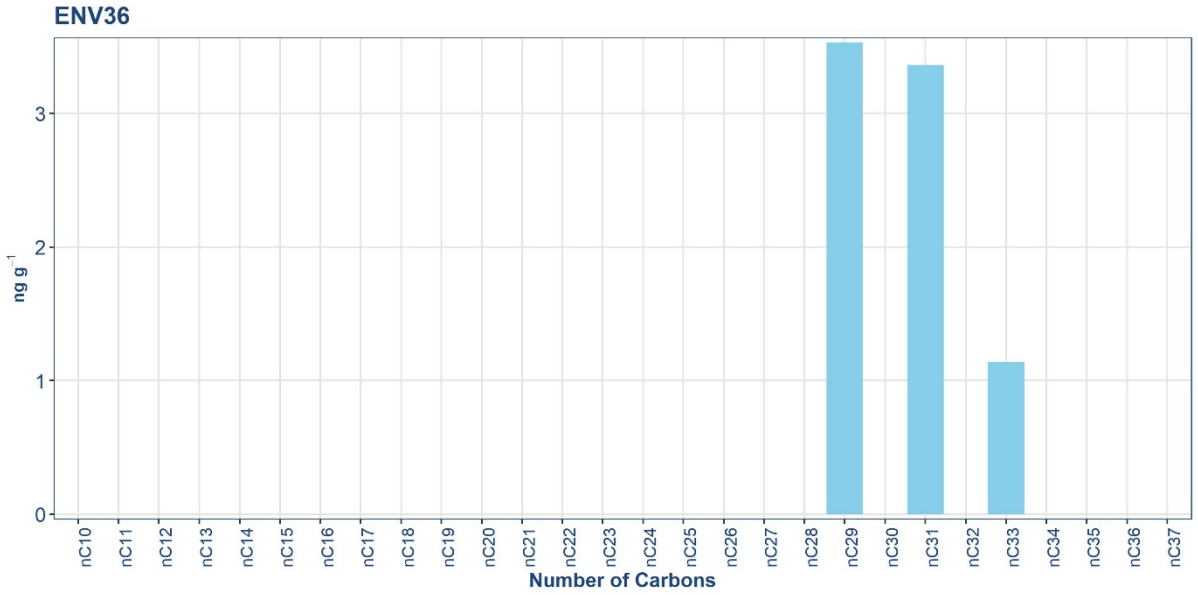

ENV31
ng g⁻¹
0
2
4
6
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

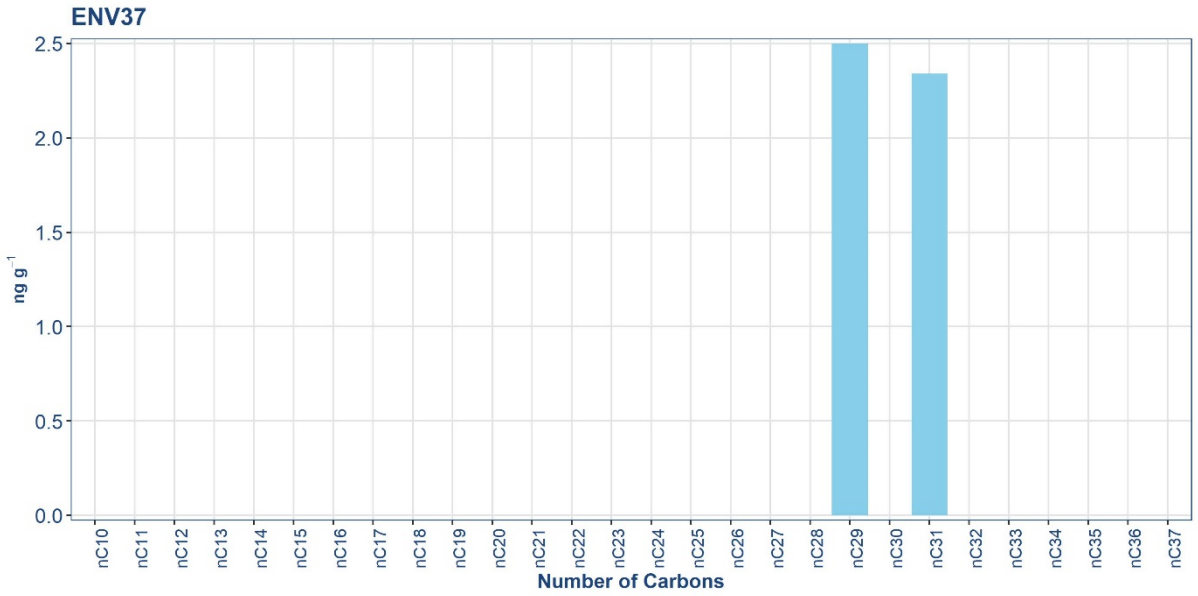

ENV32
ng g⁻¹
0
3
6
9
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

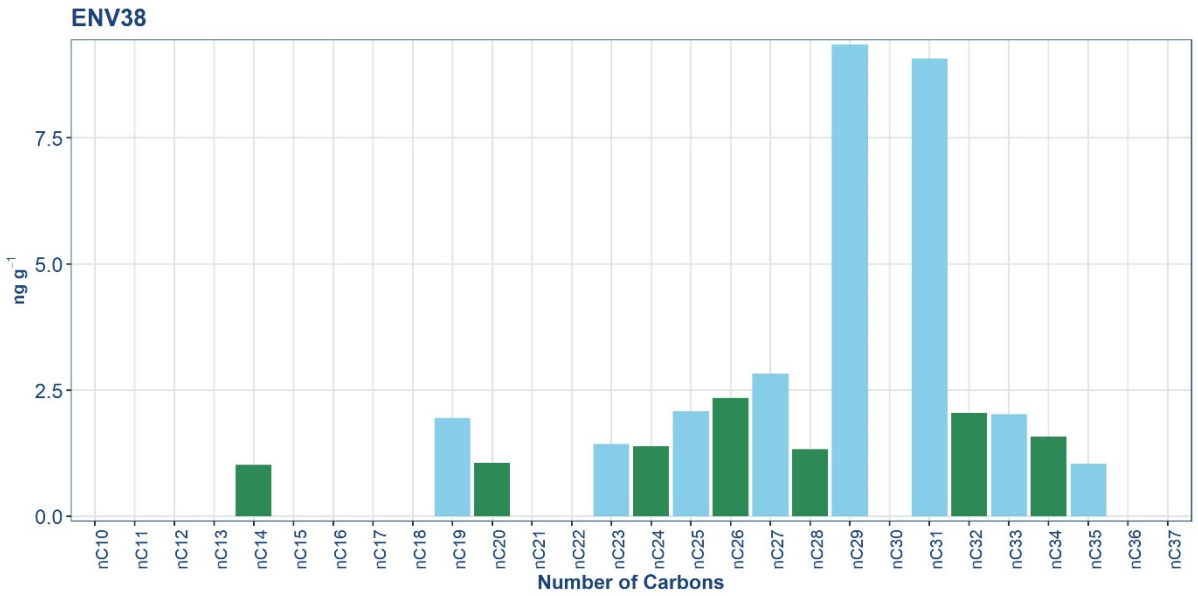

ENV33
ng g⁻¹
0
1
2
3
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

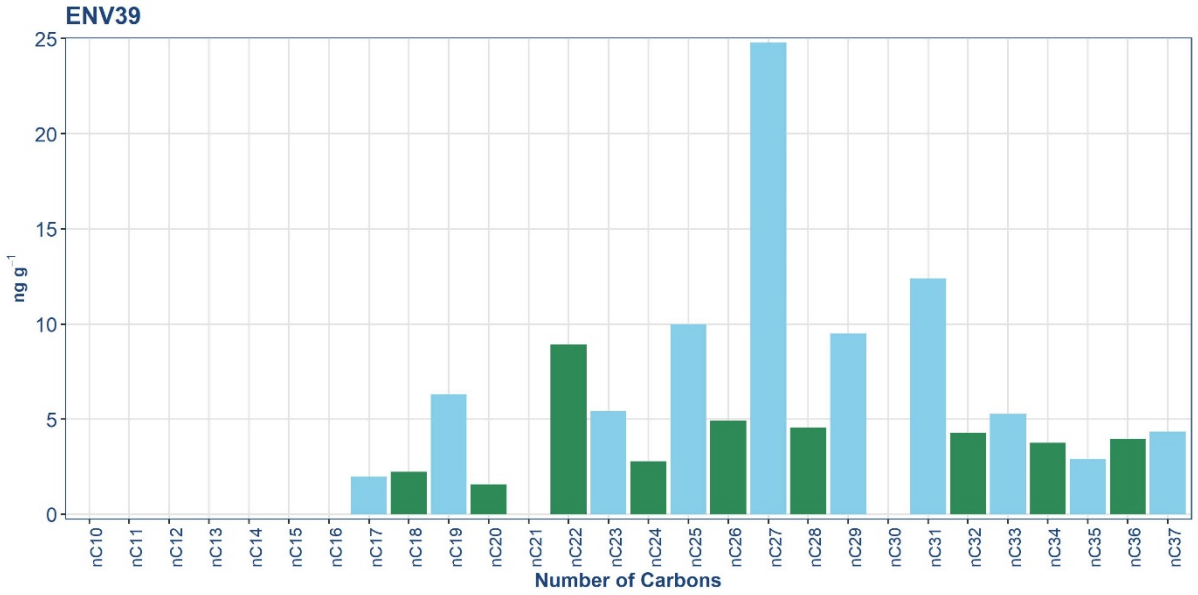

ENV34
ng g⁻¹
0
1
2
3
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

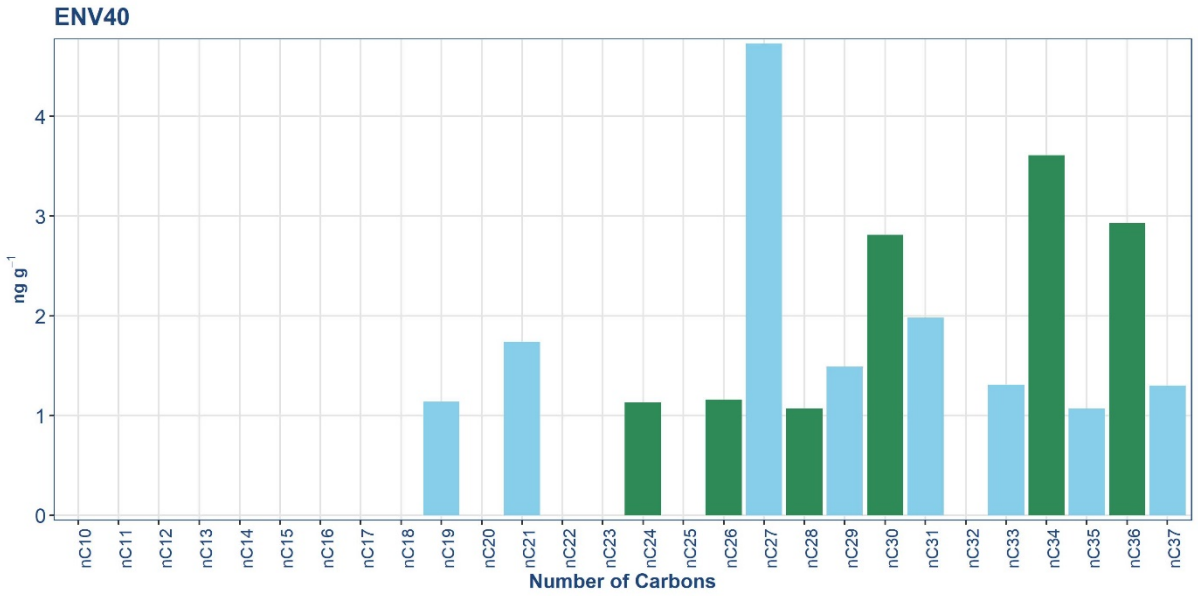

ENV35
ng g⁻¹
0
1
2
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

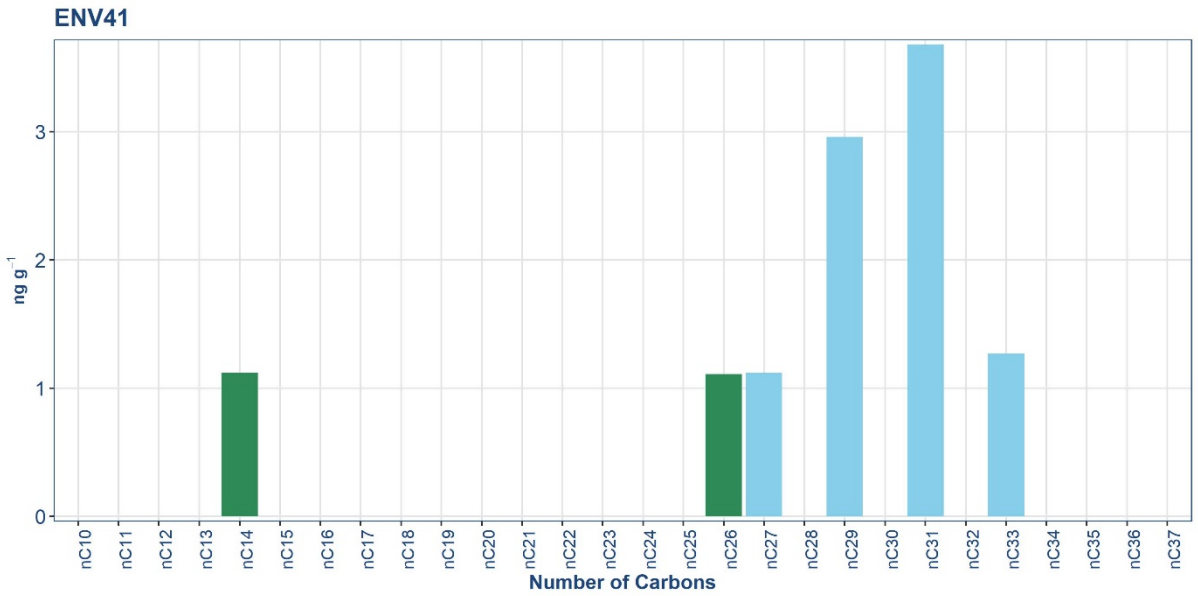

ENV36
ng g⁻¹
0
1
2
3
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

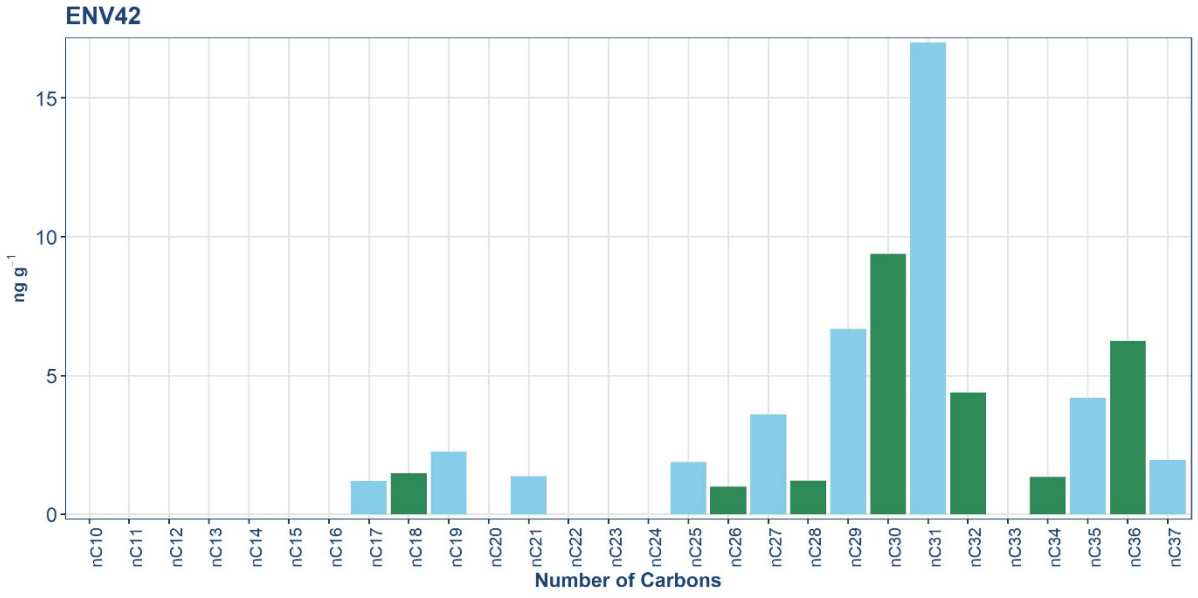

ENV37
ng g⁻¹
0.0
0.5
1.0
1.5
2.0
2.5
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

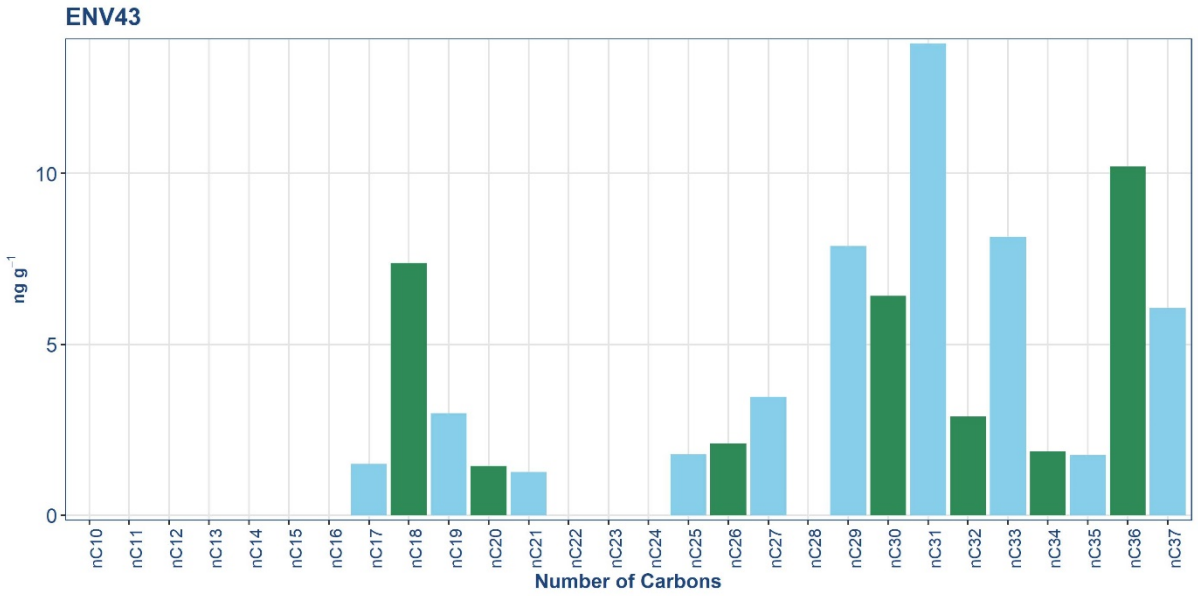

ENV38
ng g⁻¹
0.0
2.5
5.0
7.5
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

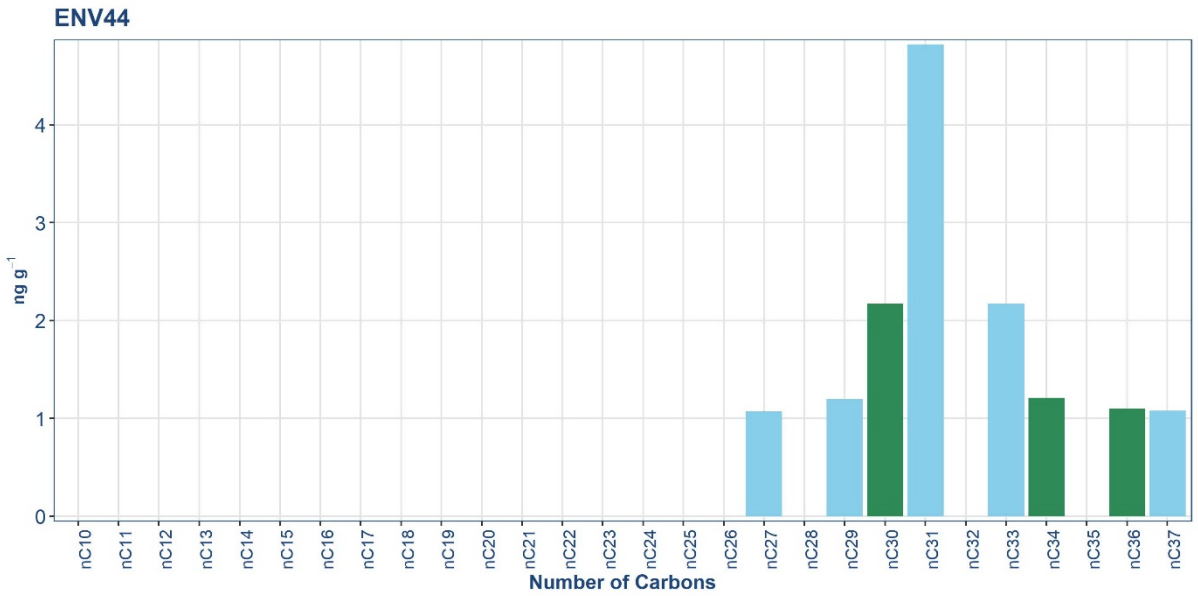

ENV39
ng g⁻¹
0
5
10
15
20
25
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons


ENV40
ng g⁻¹
0
1
2
3
4
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

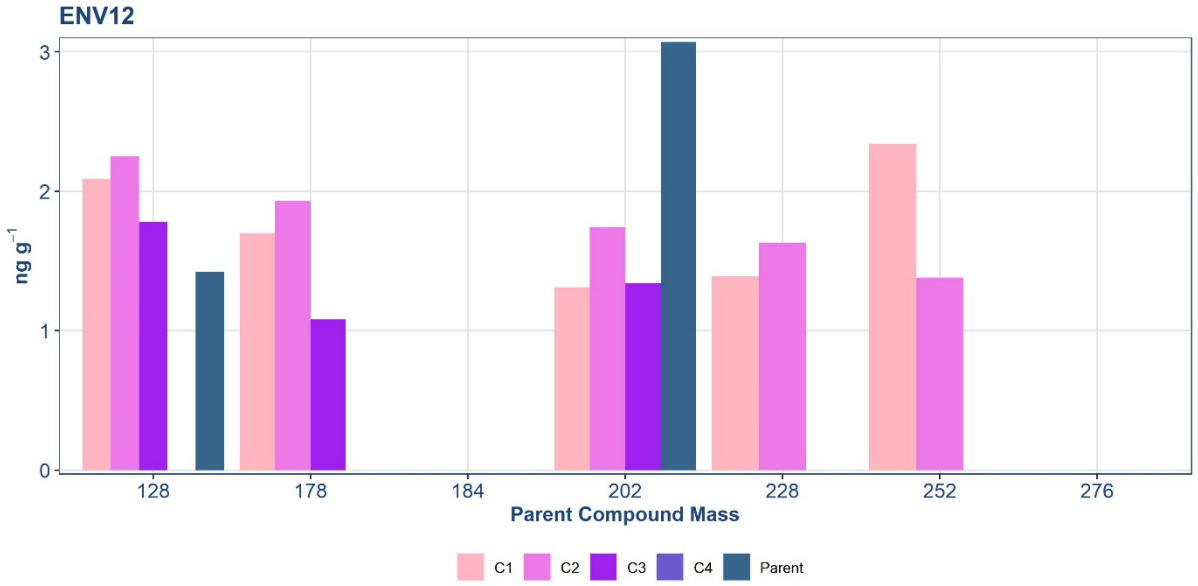

ENV41
ng g⁻¹
0
1
2
3
nC10 nC11 nC12 nC13 nC14 nC15 nC16 nC17 nC18 nC19 nC20 nC21 nC22 nC23 nC24 nC25 nC26 nC27 nC28 nC29 nC30 nC31 nC32 nC33 nC34 nC35 nC36 nC37
Number of Carbons

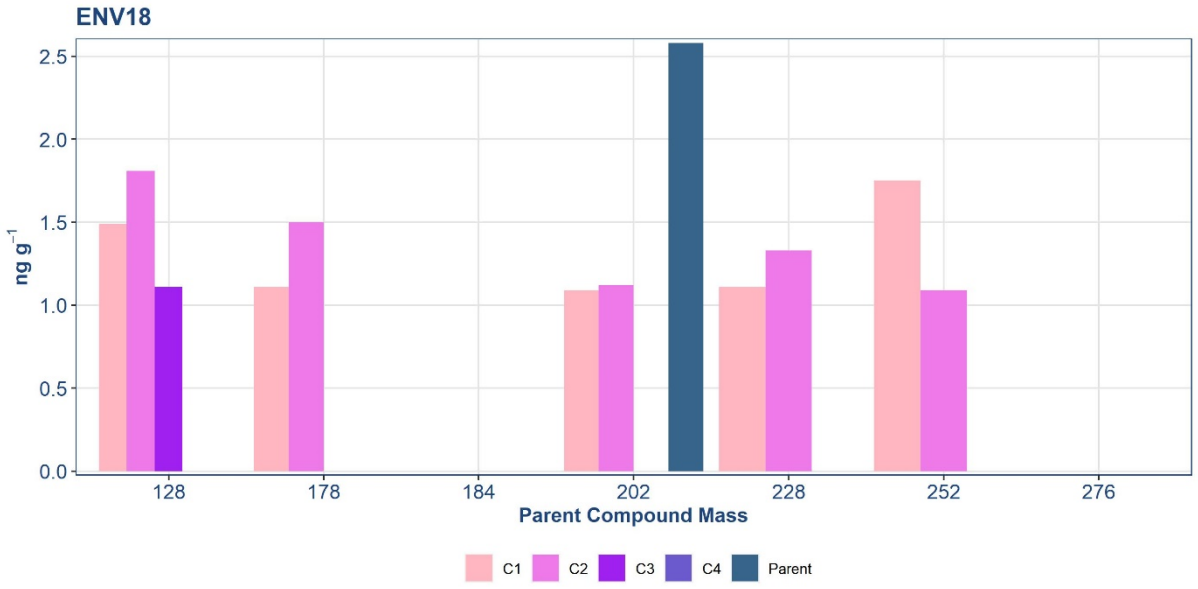


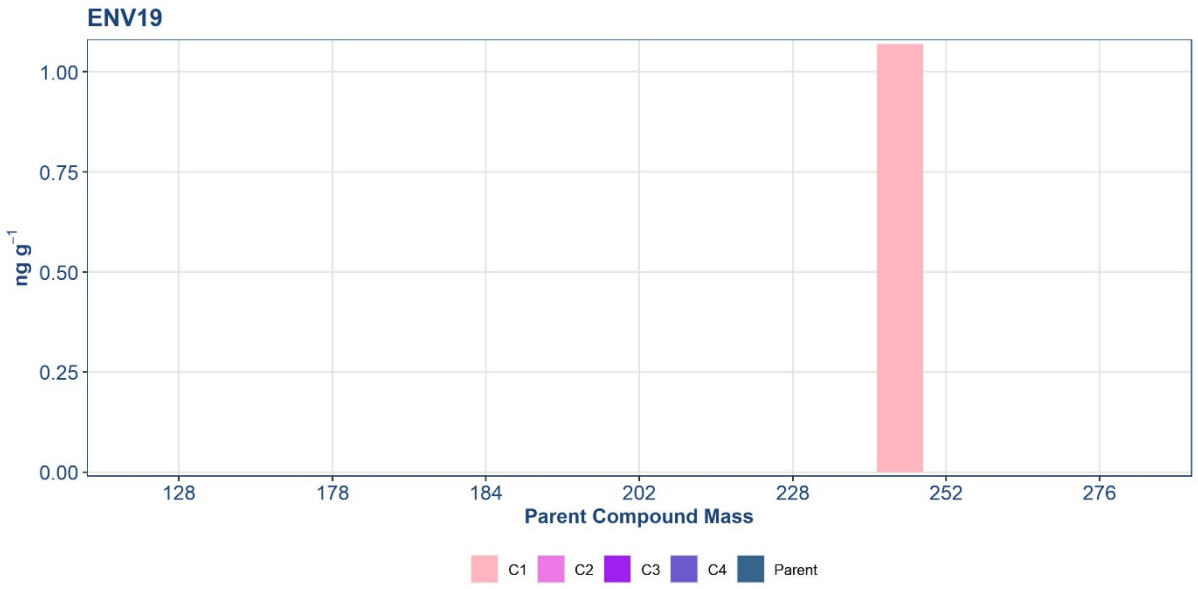


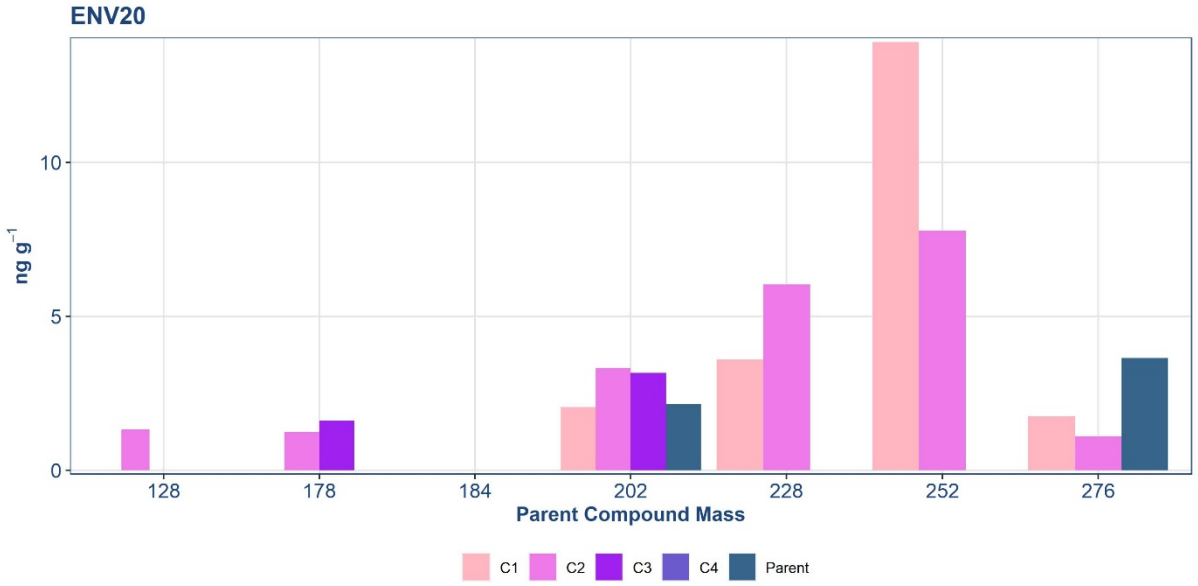


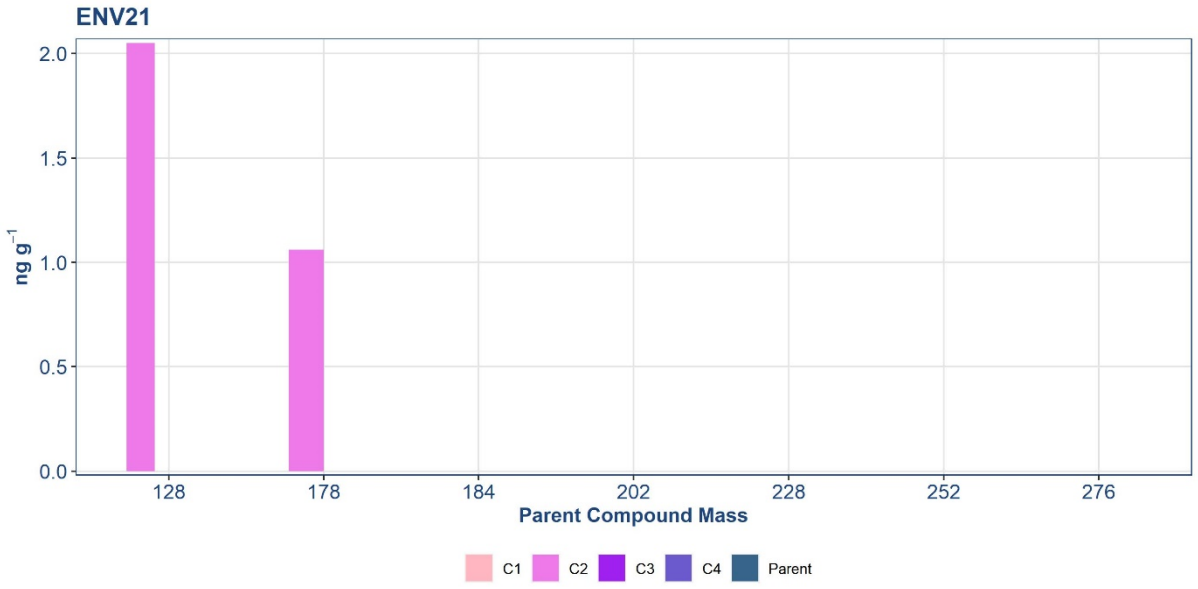
Stations with values all below LOD are not included

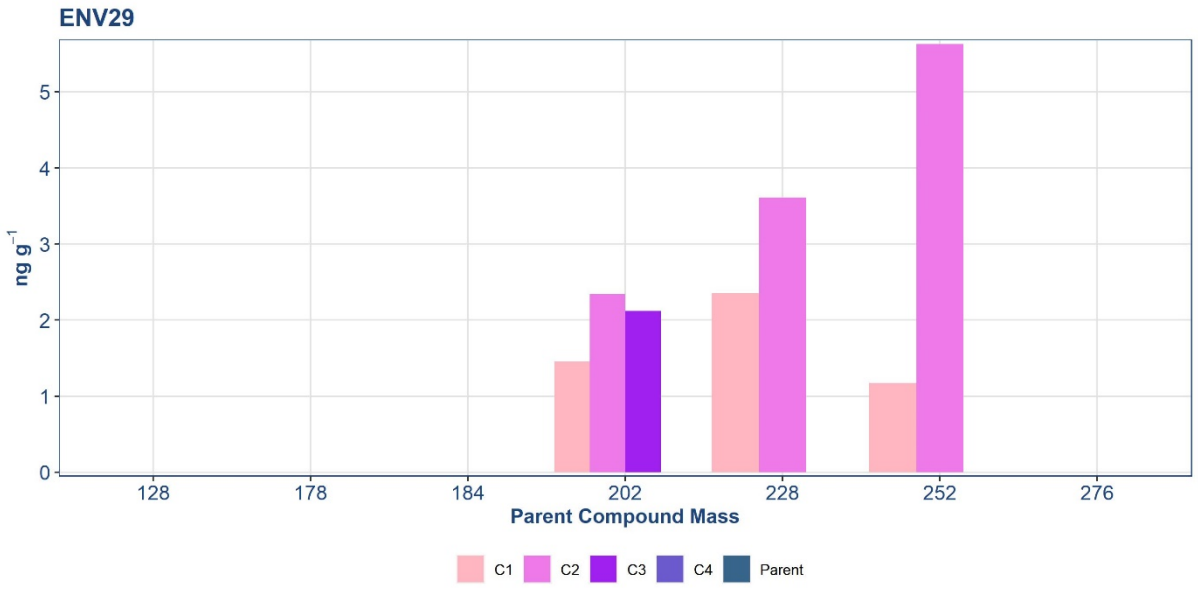

ENV12
ng g⁻¹
0
1
2
3
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

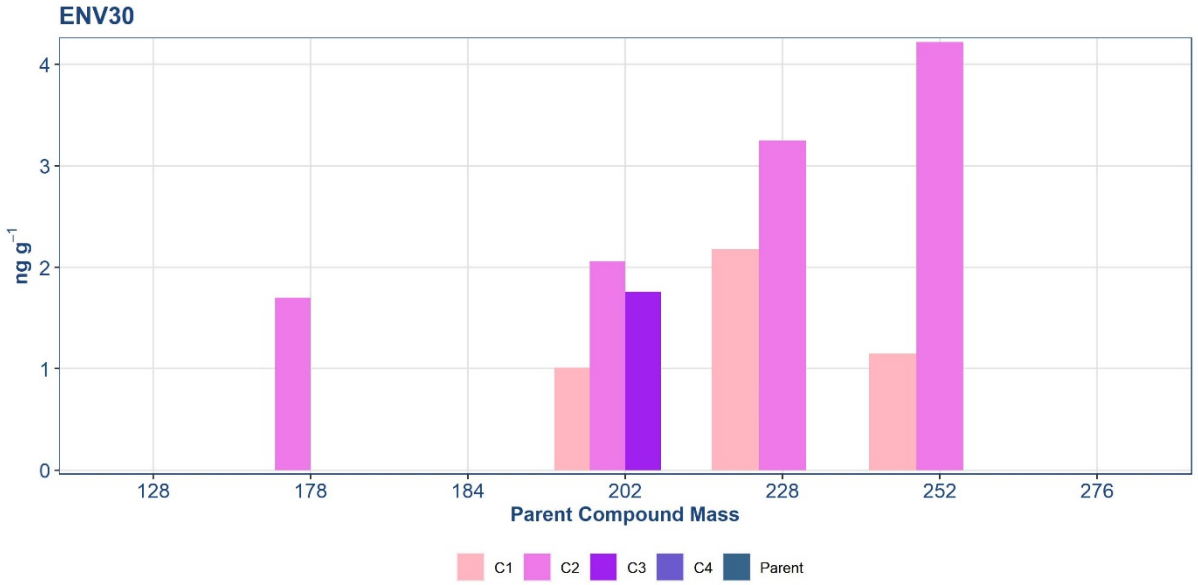

ENV18
ng g⁻¹
0.0
0.5
1.0
1.5
2.0
2.5
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

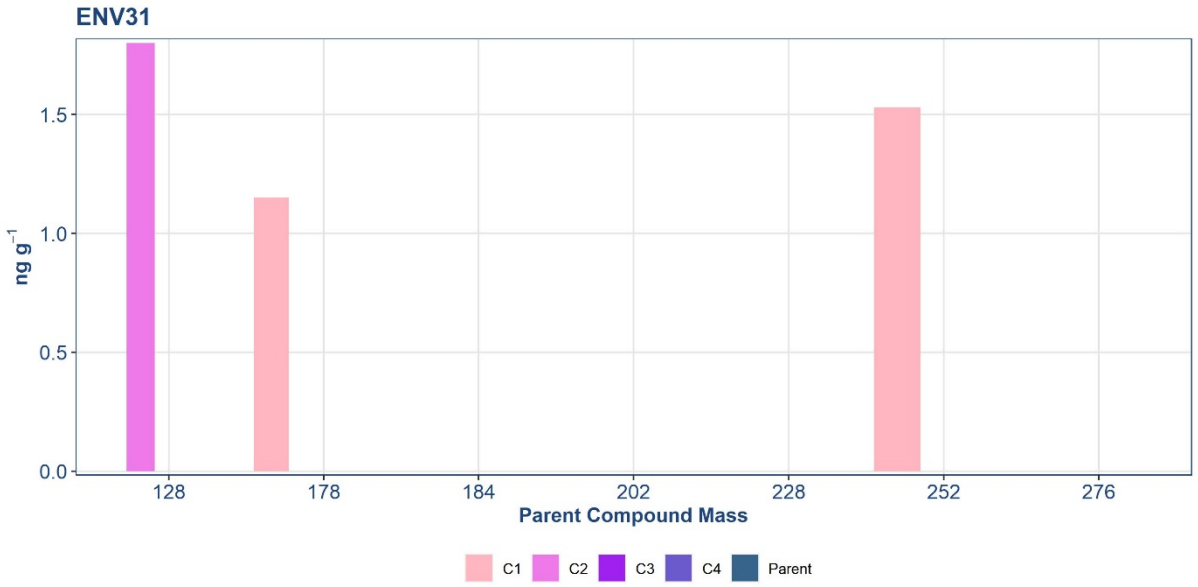

ENV19
ng g⁻¹
0.00
0.25
0.50
0.75
1.00
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

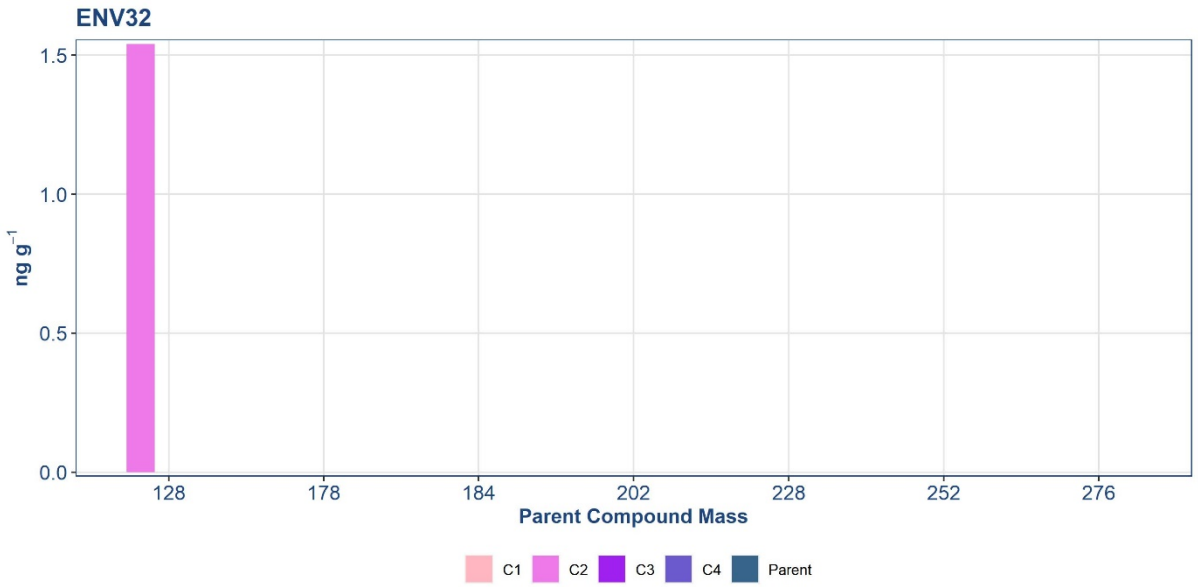

ENV20
ng g⁻¹
0
5
10
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

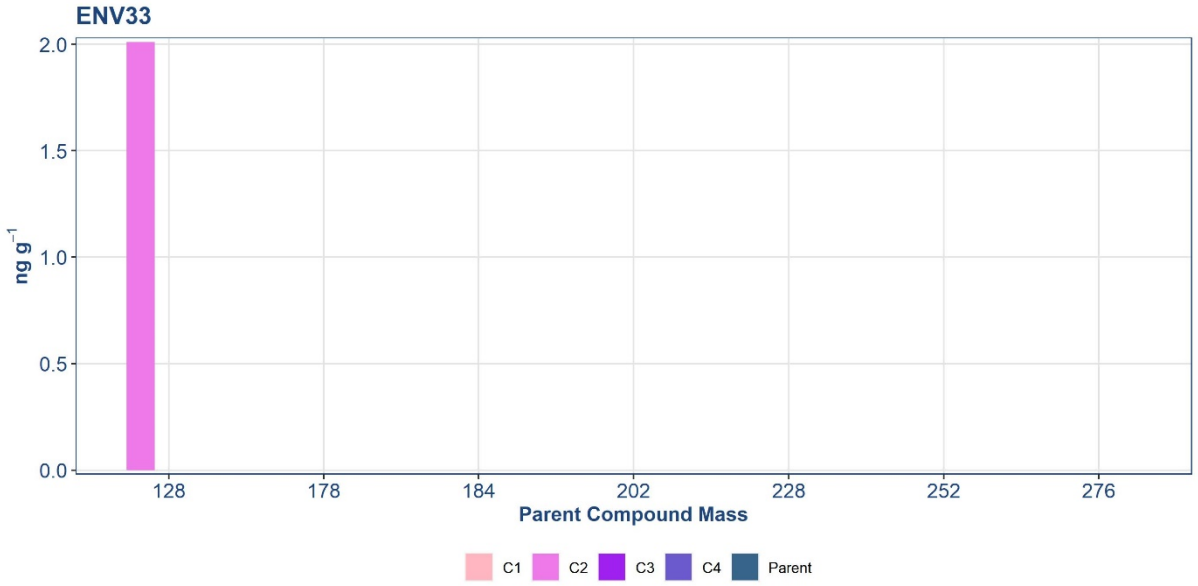

ENV21
ng g⁻¹
0.0
0.5
1.0
1.5
2.0
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

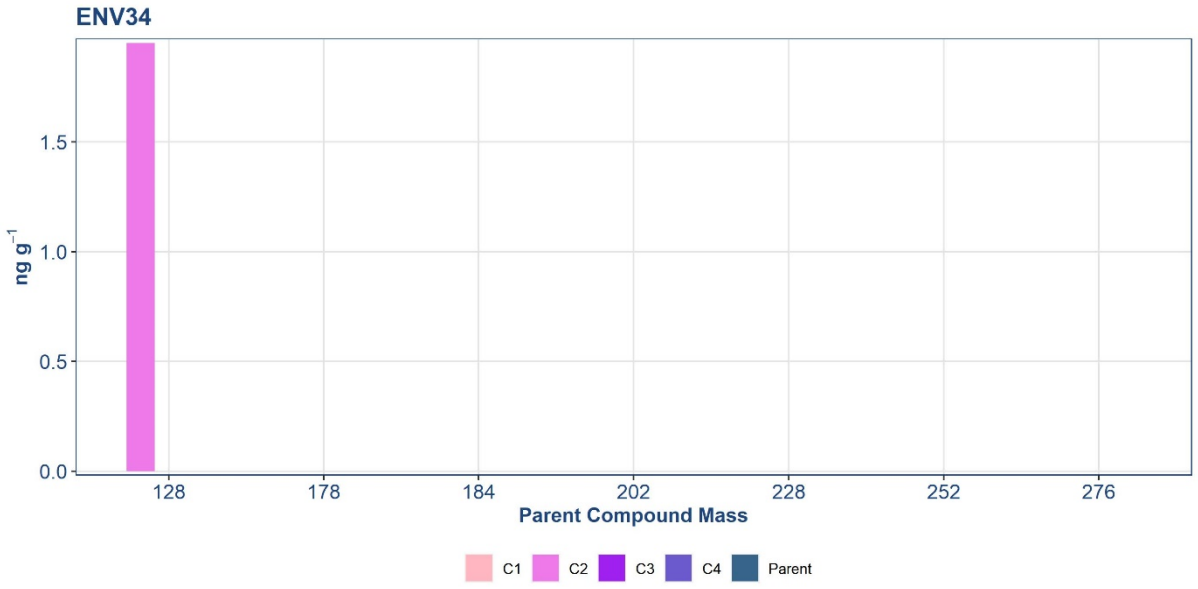

ENV29
ng g⁻¹
0
1
2
3
4
5
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

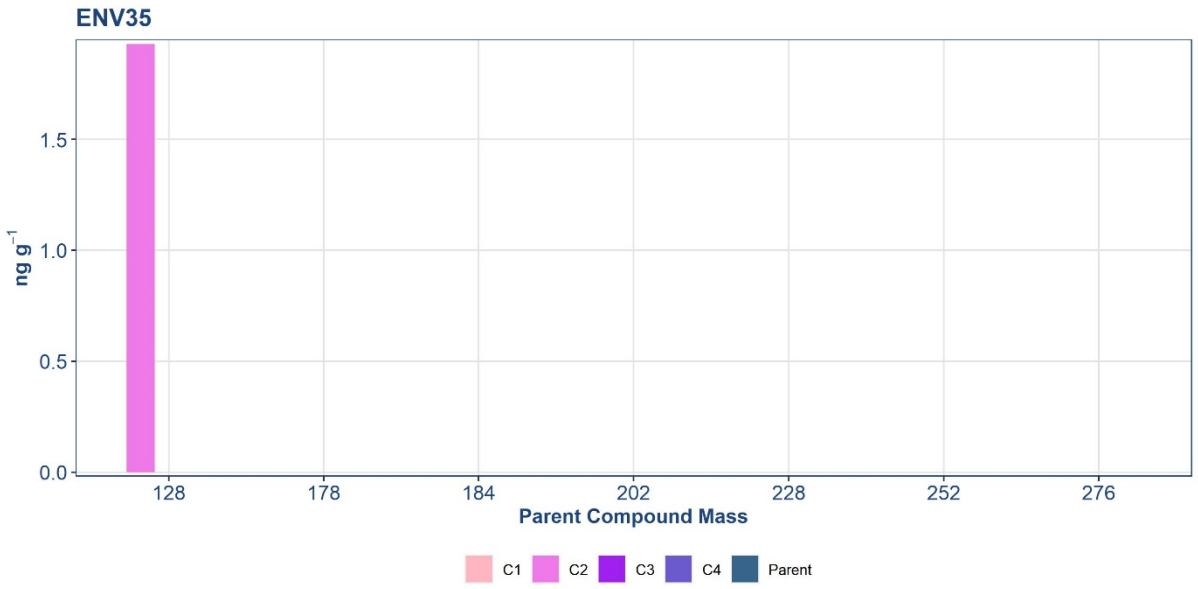

ENV30
ng g⁻¹
0
1
2
3
4
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

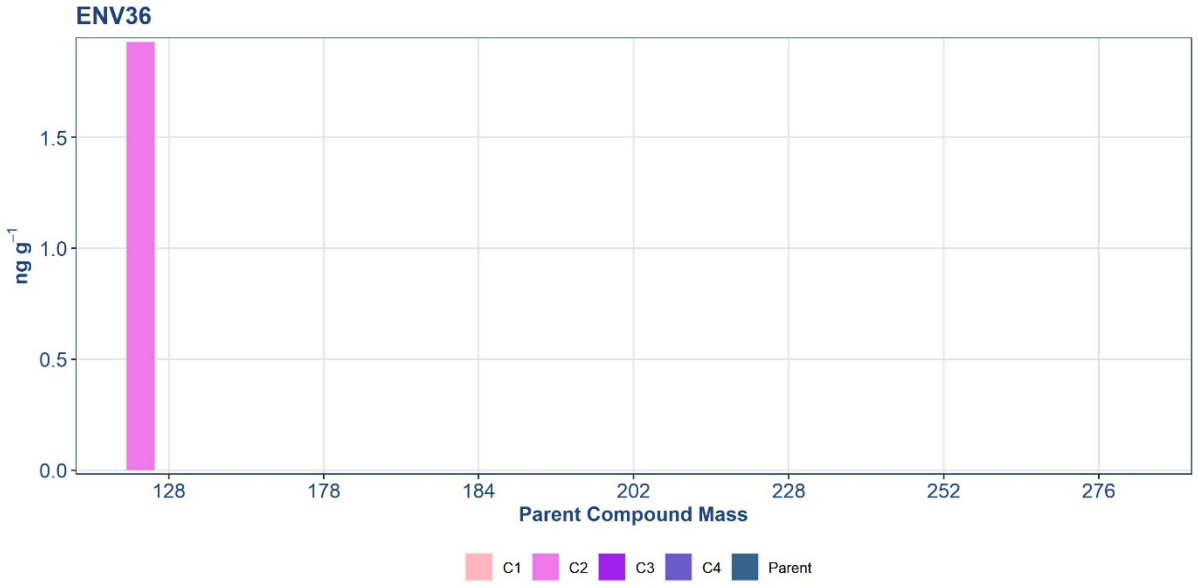

ENV31
ng g⁻¹
0.0
0.5
1.0
1.5
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

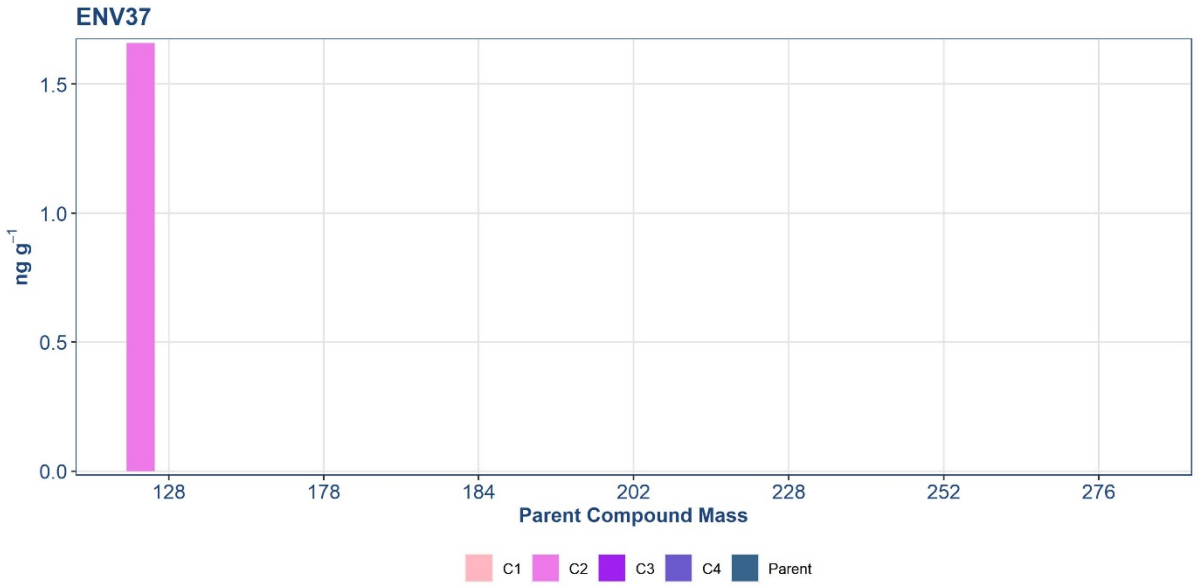

ENV32
ng g⁻¹
0.0
0.5
1.0
1.5
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

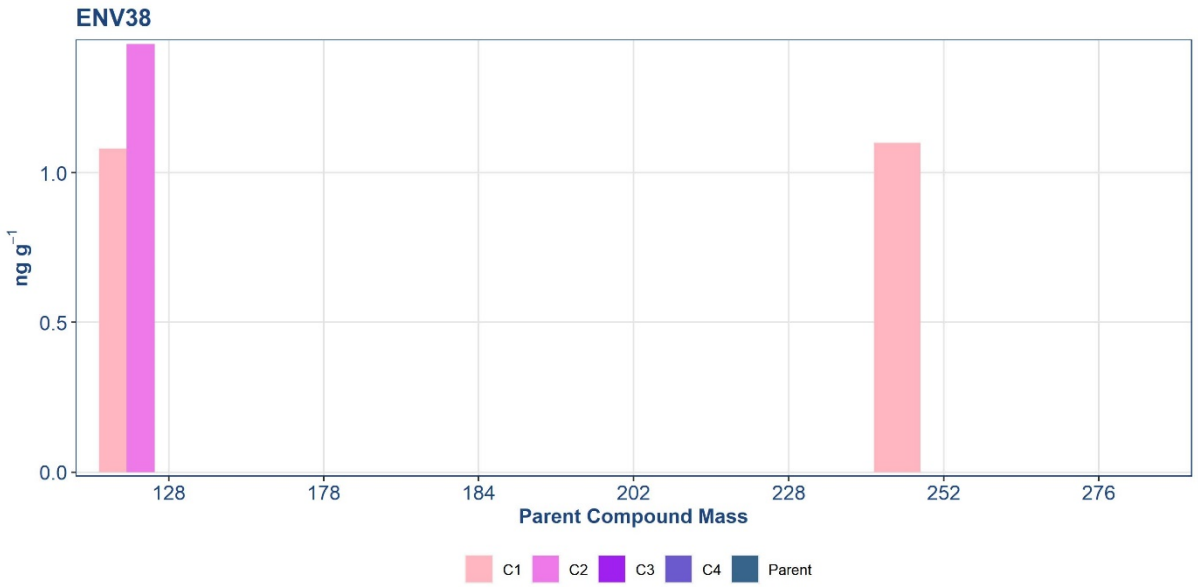

ENV33
2.0
1.5
1.0
0.5
0.0
ng g⁻¹
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

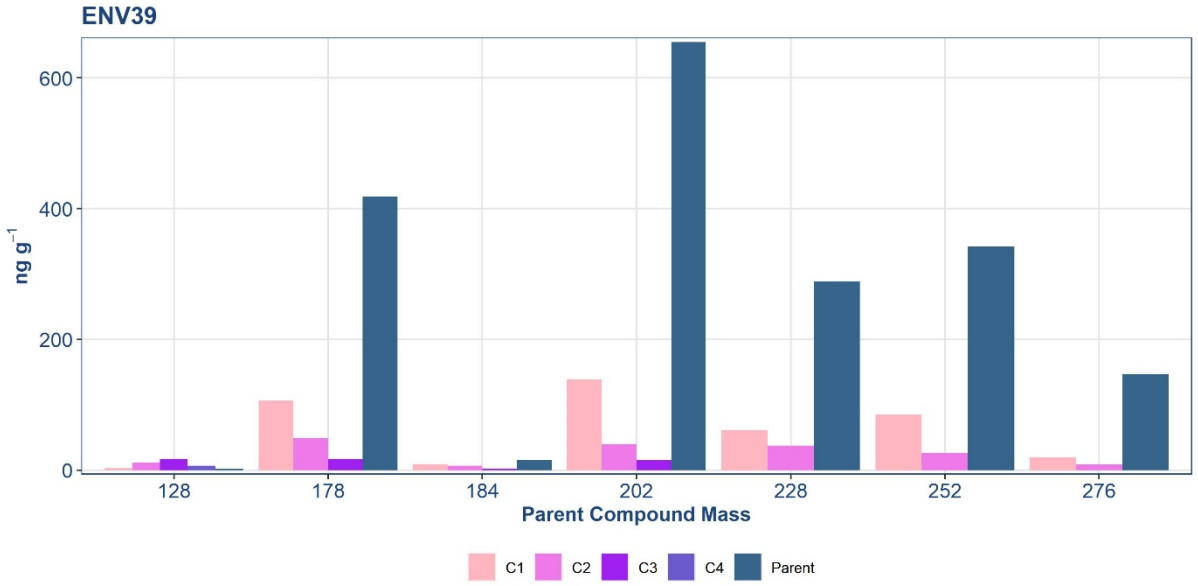

ENV34
1.5
1.0
0.5
0.0
ng g⁻¹
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

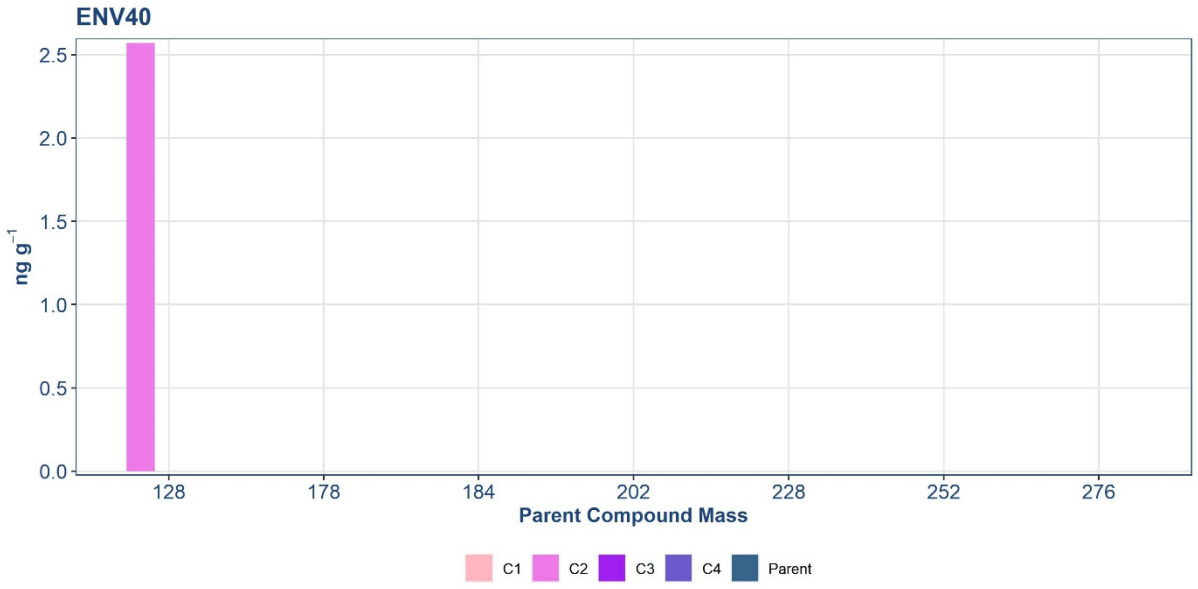

ENV35
1.5
1.0
0.5
0.0
ng g⁻¹
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

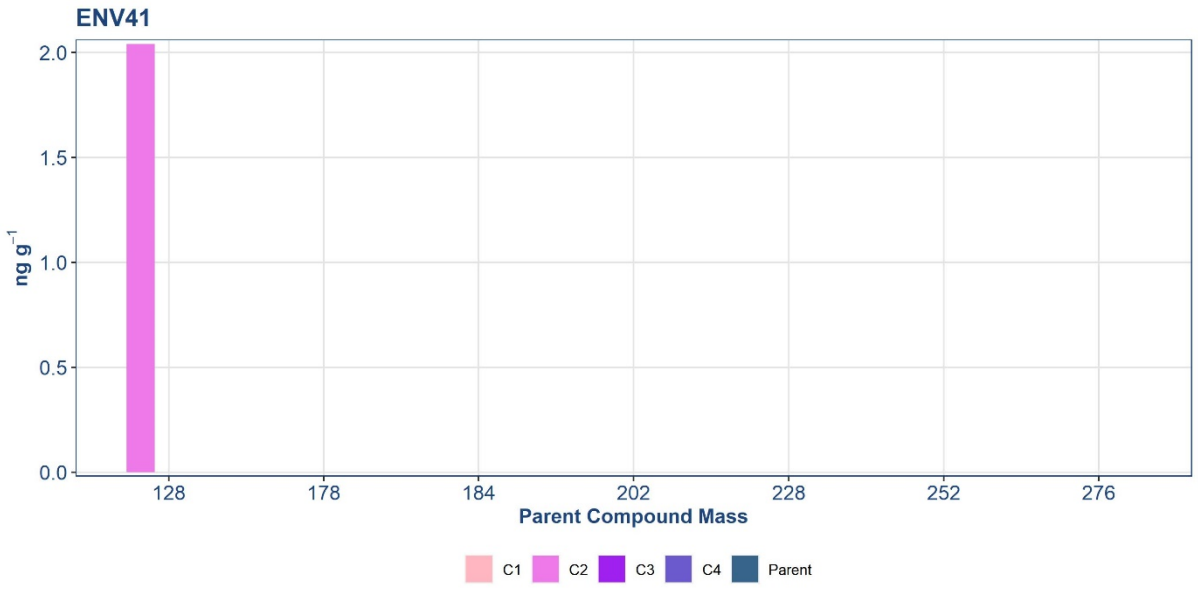

ENV36
ng g⁻¹
0.0
0.5
1.0
1.5
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

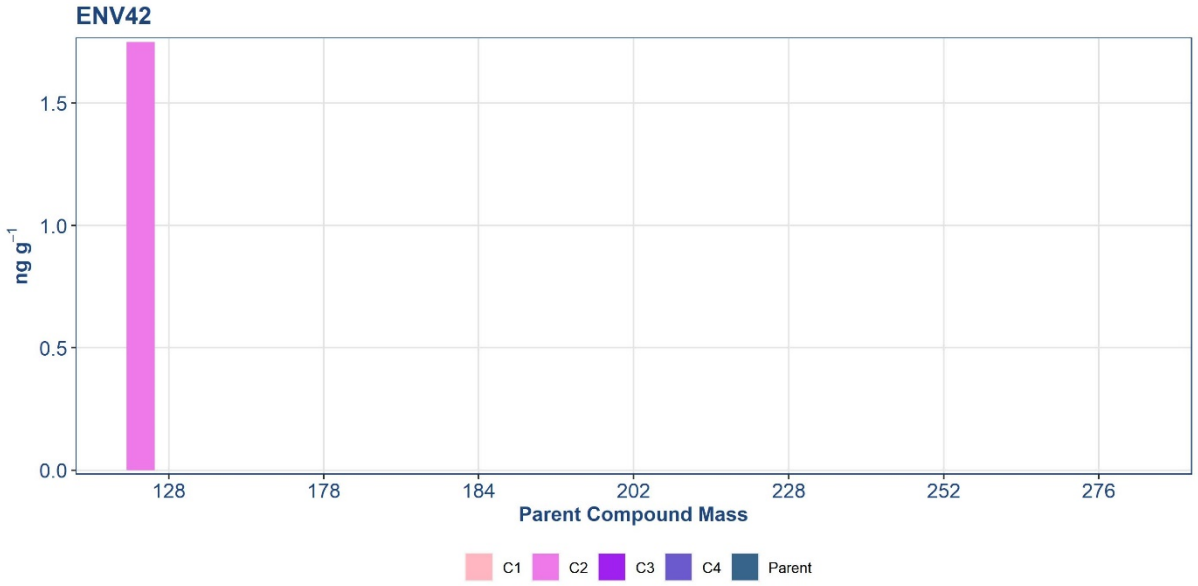

ENV37
ng g⁻¹
0.0
0.5
1.0
1.5
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

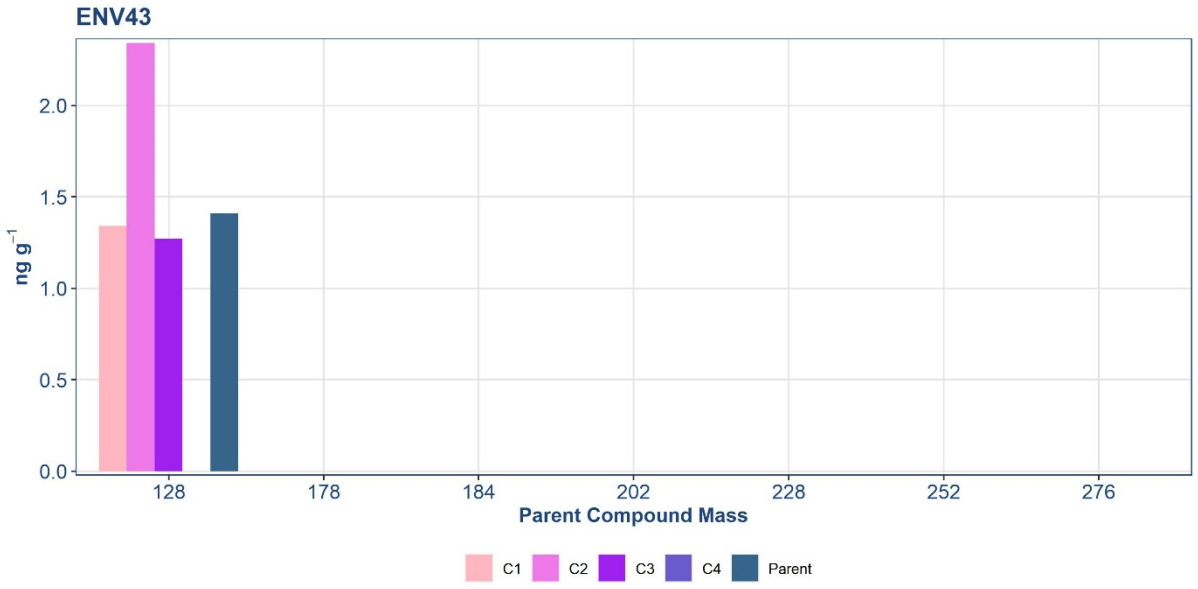

ENV38
ng g⁻¹
0.0
0.5
1.0
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent

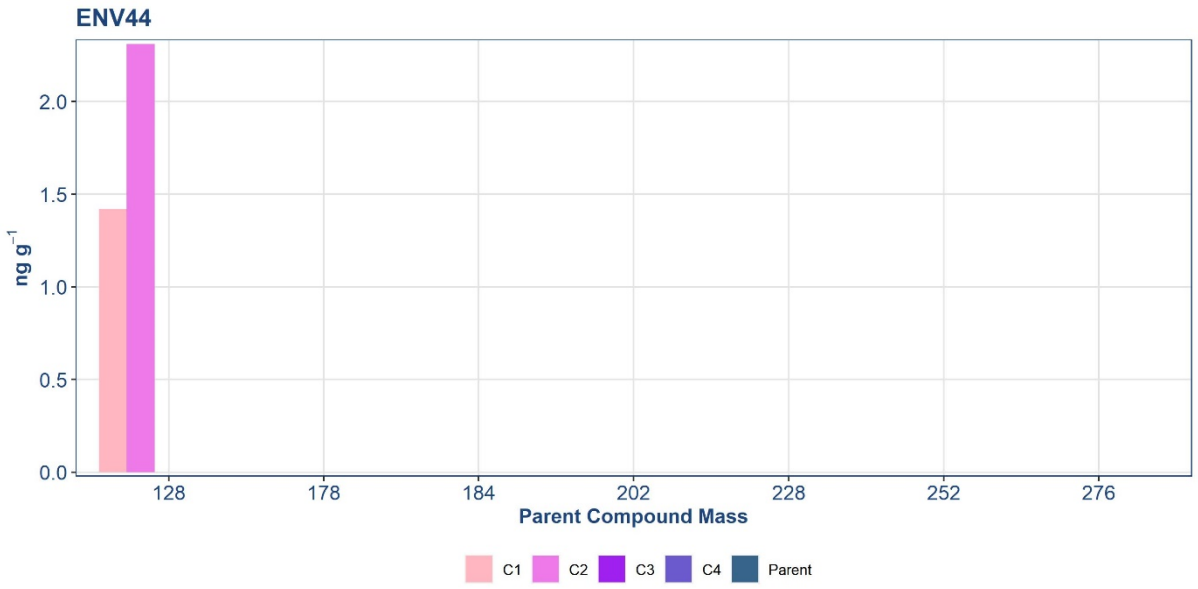

ENV39
600
400
200
0
ng g⁻¹
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent


ENV40
2.5
2.0
1.5
1.0
0.5
0.0
ng g⁻¹
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent


ENV41
2.0
1.5
1.0
0.5
0.0
ng g⁻¹
128
178
184
202
228
252
276
Parent Compound Mass
C1
C2
C3
C4
Parent







Stations with values all below LOD are not included

US EPA 16 PAHS (µg/Kg)		Station																							
	N04a Platform Area	ENV01	ENV02	N04a-N05a Pipe Route	ENV03	ENV04	ENV05	ENV06	ENV07	ENV08	ENV09	ENV10	ENV11	ENV12	ENV13	ENV14	ENV15	ENV16	ENV17	ENV18	ENV19	ENV21	ENV22	ENV23	ENV24	ENV25
Naphthalene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Dibenzothiophene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Benzo[a]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Benzo[b]fluoranthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Benzo[k]fluoranthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo[e]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
Benzo[a]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Perylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	4	2	<1	<1	<1	<1	<1	1
Indeno[123,cd]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenzo[a,h]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo[ghi]perylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total 2-6 ring PAH		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	**26**	NC	NC	NC	NC	NC	**17**	**1**	**3**	NC	NC	NC	NC
LMW 2-3 ring PAH		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	**12**	NC	NC	NC	NC	NC	**7**	NC	**3**	NC	NC	NC	NC
HMW 4-6 ring PAH		NC	NC		NC	NC	NC	NC	NC	NC	NC	NC	NC	**14**	NC	NC	NC	NC	NC	**10**	**1**	NC	NC	NC	NC	NC

US EPA 16 PAHS (µg/Kg)		Station																				Long *et al.*, (1995)		Buchman (2008)
		ENV26	ENV27		ENV20	ENV28	ENV29	ENV30	ENV31	ENV32	ENV33	ENV34	ENV35	ENV36	ENV37	ENV38	ENV39	ENV40	ENV41	ENV42	ENV43	ENV44	ERL	ERM	AET
Naphthalene	N05a Platform Area	<1	<1	N05a-Riffgat OWF Cable Route	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	1	<1	160	2100	230
Acenaphthylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	31	<1	<1	<1	<1	<1	44	640	71
Acenaphthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	6	<1	<1	<1	<1	<1	16	500	130
Fluorene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	31	<1	<1	<1	<1	<1	19	540	120
Phenanthrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	278	<1	<1	<1	<1	<1	240	1500	660
Dibenzothiophene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	15	<1	<1	<1	<1	<1	NR	NR	NR
Anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	141	<1	<1	<1	<1	<1	85.3	1100	280
Fluoranthene		<1	<1		1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	377	<1	<1	<1	<1	<1	600	5100	1300
Pyrene		<1	<1		1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	278	<1	<1	<1	<1	<1	665	2600	2400
Benzo[a]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	150	<1	<1	<1	<1	<1	261	1600	960
Chrysene		<1	<1		<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	139	<1	<1	<1	<1	<1	384	2800	950
Benzo[b]fluoranthene		<1	<1		2	<1	1	<1	1	<1	<1	<1	<1	<1	<1	<1	91	<1	<1	<1	<1	<1	NR	NR	1800
Benzo[k]fluoranthene		<1	<1		1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	63	<1	<1	<1	<1	<1	NR	NR	1800
Benzo[e]pyrene		<1	<1		1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	75	<1	<1	<1	<1	<1	NR	NR	NR
Benzo[a]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	113	<1	<1	<1	<1	<1	430	1600	1100
Perylene		1	<1		69	5	51	29	1	1	<1	<1	<1	<1	<1	1	40	<1	<1	<1	<1	<1	NR	NR	NR
Indeno[123,cd]pyrene		<1	<1		1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	74	<1	<1	<1	<1	<1	NR	NR	600
Dibenzo[a,h]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	10	<1	<1	<1	<1	<1	63.4	260	230
Benzo[ghi]perylene		<1	<1		2	<1	1	1	<1	<1	<1	<1	<1	<1	<1	<1	63	<1	<1	<1	<1	<1	NR	NR	670
Total 2-6 ring PAH		NC	NC		**53**	NC	**19**	**17**	**4**	**2**	**2**	**2**	**2**	**2**	**2**	**4**	**2530**	**3**	**2**	**2**	**6**	**4**	**4022**	**44792**	**1000**
LMW 2-3 ring PAH		NC	NC		**4**	NC	NC	**2**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**665**	**3**	**2**	**2**	**6**	**4**	**552**	**3160**	**1000**
HMW 4-6 ring PAH		NC	NC		**48**	NC	**19**	**16**	**2**	NC	NC	NC	NC	NC	NC	**1**	**1866**	NC	NC	NC	NC	NC	**1700**	**9600**	**1000**

Normalised US EPA 16 PAHS (µg/Kg)		Station																								
		ENV01	ENV02		ENV03	ENV04	ENV05	ENV06	ENV07	ENV08	ENV09	ENV10	ENV11	ENV12	ENV13	ENV14	ENV15	ENV16	ENV17	ENV18	ENV19	ENV20	ENV21	ENV22	ENV23	ENV24	ENV25
Naphthalene	N04a Platform Area	<1	<1	N04a-N05a Pipe Route	<1	<1	<1	<1	<1	<1	<1	<1	<1	22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenanthrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	25	<1	<1	<1	<1	<1	17	<1	<1	<1	<1	<1	<1	<1
Dibenzothiophene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoranthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	26	<1	<1	<1	<1	<1	23	<1	10	<1	<1	<1	<1	<1
Pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	22	<1	<1	<1	<1	<1	20	<1	11	<1	<1	<1	<1	<1
Benzo[a]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chrysene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	18	<1	<1	<1	<1	<1	17	<1	<1	<1	<1	<1	<1	<1
Benzo[b]fluoranthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	22	<1	<1	<1	<1	<1	19	<1	15	<1	<1	<1	<1	<1
Benzo[k]fluoranthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	16	<1	<1	<1	<1	<1	<1	<1	10	<1	<1	<1	<1	<1
Benzo[e]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	23	<1	<1	<1	<1	<1	18	<1	12	<1	<1	<1	<1	<1
Benzo[a]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Perylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	43	<1	<1	<1	<1	84	34	<1	663	<1	<1	<1	<1	34
Indeno[123,cd]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	19	<1	<1	<1	<1	<1	<1	<1	14	<1	<1	<1	<1	<1
Dibenzo[a,h]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo[ghi]perylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	20	<1	<1	<1	<1	<1	<1	<1	21	<1	<1	<1	<1	<1

Normalised US EPA 16 PAHS (µg/Kg)		Station																					OSPAR (2005)	
		ENV26	ENV27		ENV20	ENV28	ENV29	ENV30	ENV31	ENV32	ENV33	ENV34	ENV35	ENV36	ENV37	ENV38	ENV39	ENV40	ENV41	ENV42	ENV43	ENV44	Station Average	BC	BAC
	N05a Platform Area			N05a-Riffgat OWF Cable Route																					
Naphthalene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	38	<1	<1	<1	29	<1	2	5	8
Acenaphthylene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	590	<1	<1	<1	<1	<1	13	NR	NR
Acenaphthene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	118	<1	<1	<1	<1	<1	3	NR	NR
Fluorene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	596	<1	<1	<1	<1	<1	14	NR	NR
Phenanthrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5346	<1	<1	<1	<1	<1	122	17	32
Dibenzothiophene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	294	<1	<1	<1	<1	<1	7	NR	NR
Anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2712	<1	<1	<1	<1	<1	62	3	5
Fluoranthene		<1	<1		10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	44	7250	<1	<1	<1	<1	<1	167	20	39
Pyrene		<1	<1		11	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	5346	<1	<1	<1	<1	<1	123	13	24
Benzo[a]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2885	<1	<1	<1	<1	<1	66	9	16
Chrysene		<1	<1		<1	<1	<1	<1	32	<1	<1	<1	<1	<1	<1	<1	2673	<1	<1	<1	<1	<1	62	11	20
Benzo[b]fluoranthene		<1	<1		15	<1	13	<1	20	<1	<1	<1	<1	<1	<1	<1	1742	<1	<1	<1	<1	<1	42	NR	NR
Benzo[k]fluoranthene		<1	<1		10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1208	<1	<1	<1	<1	<1	28	NR	NR
Benzo[e]pyrene		<1	<1		12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1446	<1	<1	<1	<1	<1	34	NR	NR
Benzo[a]pyrene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2173	<1	<1	<1	<1	<1	49	15	30
Perylene		32	<1		663	100	493	318	26	24	<1	<1	<1	<1	<1	53	767	<1	<1	<1	<1	<1	61	NR	NR
Indeno[123,cd]pyrene		<1	<1		14	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1427	<1	<1	<1	<1	<1	33	50	103
Dibenzo[a,h]anthracene		<1	<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	191	<1	<1	<1	<1	<1	4	NR	NR
Benzo[ghi]perylene		<1	<1		21	<1	12	15	<1	<1	<1	<1	<1	<1	<1	<1	1212	<1	<1	<1	<1	<1	29	45	80

Appendix H. Macrofauna Analysis

Appendix H1: Taxa included in analysis

Aphia ID	Taxa	Qualifier	Units	ENV01 MACA	ENV02 MACA	ENV03 MACA	ENV04 MACA	ENV05 MACA	ENV06 MACA	ENV07 MACA	ENV08 MACA	ENV09 MACA	ENV10 MACA	ENV11 MACA	ENV12 MACA	ENV13 MACA	ENV14 MACA	ENV15 MACA	ENV16 MACA	ENV17 MACA	ENV18 MACA	ENV19 MACA	ENV20 MACA	ENV21 MACA	ENV22 MACA	ENV23 MACA	ENV24 MACA	ENV25 MACA	ENV26 MACA	ENV27 MACA	ENV28 MACA	ENV29 MACA	ENV30 MACA	ENV31 MACA	ENV32 MACA	ENV33 MACA	ENV34 MACA	ENV35 MACA	ENV36 MACA	ENV37 MACA	ENV38 MACA	ENV39 MACA	ENV40 MACA	ENV41 MACA	ENV42 MACA	ENV43 MACA	ENV44 MACA
POLYCHAETA																																															
130707	*Pisione remota*		Count	43	5	0	0	18	39	34	26	82	47	18	2	1	0	43	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	31	2	0	0	0	0	0	3
130749	*Gattyana cirrhosa*		Count	0	9	0	0	0	0	0	0	0	3	2	17	0	0	9	6	0	4	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0
152276	*Malmgrenia arenicolae*		Count	3	11	1	0	2	0	0	11	2	2	5	33	1	3	9	4	0	8	0	0	0	0	0	0	0	2	0	0	0	0	0	0	12	0	1	0	1	0	1	0	0	1	0
130770	*Harmothoe impar*	Aggregate	Count	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129439	*Pholoe*	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130601	*Pholoe inornata*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
130599	*Pholoe baltica*		Count	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131072	*Sigalion mathildae*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0
131073	*Sigalion squamosus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
130616	*Eteone longa*	Aggregate	Count	3	2	0	1	1	0	1	2	2	4	3	4	0	0	4	6	0	1	1	1	1	0	0	0	0	0	0	1	1	0	0	1	2	1	3	1	1	1	0	0	1	0	0
130649	*Hesionura elongata*		Count	37	5	0	0	7	0	3	6	32	15	2	0	6	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
334506	*Phyllodoce groenlandica*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
334512	*Phyllodoce mucosa*		Count	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129445	*Eulalia*	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129446	*Eumida*	Damaged	Count	0	28	0	0	0	0	0	0	0	0	0	13	0	0	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0
129446	*Eumida*	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	5	0	0	0	0	0	0	0
130641	*Eumida bahusiensis*		Count	0	0	0	0	0	0	1	0	0	0	0	7	0	0	11	0	0	7	0	0	0	0	0	0	0	8	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
130644	*Eumida sanguinea*	Aggregate	Count	5	0	0	0	2	0	0	4	0	0	36	76	0	0	11	33	2	15	0	0	0	1	0	0	1	0	0	0	0	0	1	2	18	0	7	13	8	0	1	0	0	0	0
129296	*Glycera*	Juvenile	Count	0	6	0	0	4	6	26	0	29	44	2	18	1	0	8	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	10	1	1	0	0	0	0	0
130123	*Glycera lapidum*	Aggregate	Count	70	27	0	0	69	9	2	51	4	7	43	18	1	3	18	18	2	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	9	0	17	0	0	0	0	0	0
130126	*Glycera oxycephala*		Count	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130145	*Goniadella gracilis*		Count	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	8	0	26	0	0	0	0	0	0	0
238207	*Streptodonta pterochaeta*		Count	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129679	*Syllides*		Count	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
333453	*Exogone dispar*		Count	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0
327985	*Exogone naidina*		Count	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131388	*Sphaerosyllis hystrix*		Count	0	13	0	0	0	0	0	0	2	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131394	*Sphaerosyllis taylori*	Confer	Count	16	0	0	0	11	1	0	0	0	0	0	0	1	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	1	1	0	0	0	0	0	0	0
129659	Myrianida		Count	0	0	0	0	0	0	0	0	0	0	11	4	0	0	1	1	3	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	3	1	0	0	2	0	0	7	0	0	3	2	0
22496	Nereididae	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
492034	*Rullierinereis ancornunezi*		Count	2	0	0	0	0	0	0	2	0	0	0	0	0	0	2	1	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	1	0	0	2
130375	*Eunereis longissima*		Count	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129370	Nephtys	Juvenile	Count	0	0	0	0	0	0	0	0	1	0	0	6	0	0	0	0	2	1	1	0	2	1	0	3	1	0	0	0	1	0	1	2	1	3	1	0	0	8	7	10	0	10	2	5
130353	*Nephtys assimilis*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
130355	*Nephtys caeca*		Count	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
130357	*Nephtys cirrosa*		Count	3	0	8	13	1	2	7	14	4	0	0	0	11	7	2	0	3	1	0	0	0	1	6	2	3	3	5	3	4	5	1	3	1	3	3	2	2	0	0	3	12	0	0	2
130359	*Nephtys hombergii*		Count	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	3	0	0	0	0	0	0	0	0	2	2	2	1	0	0	0	0	0	2	0	1	1	0
130041	*Protodorvillea kefersteini*		Count	9	3	0	0	1	1	1	6	5	12	16	8	0	0	30	13	0	3	0	1	0	0	0	0	0	0	0	0	0	3	0	0	4	0	4	2	3	0	0	0	0	0	0	0
130537	*Scoloplos armiger*		Count	0	17	1	4	0	0	0	0	0	0	4	11	0	1	5	4	13	6	0	1	0	0	10	7	26	10	7	0	2	5	28	34	10	5	8	22	1	3	65	1	9	9	8	18
730747	*Aricidea (Aricidea) minuta*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
326605	*Aricidea (Aricidea) wassi*		Count	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130711	*Poecilochaetus serpens*		Count	0	1	0	0	1	0	0	0	0	0	0	37	0	0	0	4	0	14	0	0	1	0	0	0	0	1	0	0	1	4	0	4	2	0	0	0	1	0	1	0	0	0	0	0
131107	*Aonides paucibranchiata*		Count	151	85	1	0	141	29	43	98	85	228	190	100	3	22	73	60	6	23	0	1	0	0	0	0	2	0	0	0	0	43	0	0	19	1	82	68	196	0	0	0	2	0	1	1
129614	Malacoceros	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
333954	*Malacoceros tetracerus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131117	*Dipolydora coeca*	Aggregate	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131169	*Pseudopolydora pulchra*		Count	0	0	0	0	0	0	0	0	0	0	0	29	0	0	20	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131171	*Scolelepis bonnieri*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129625	Spio	Damaged	Count	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
596180	*Spio arndti*		Count	1	0	0	0	0	0	0	2	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

Aphia ID	Taxa	Qualifier	Units	ENV01 MACA	ENV02 MACA	ENV03 MACA	ENV04 MACA	ENV05 MACA	ENV06 MACA	ENV07 MACA	ENV08 MACA	ENV09 MACA	ENV10 MACA	ENV11 MACA	ENV12 MACA	ENV13 MACA	ENV14 MACA	ENV15 MACA	ENV16 MACA	ENV17 MACA	ENV18 MACA	ENV19 MACA	ENV20 MACA	ENV21 MACA	ENV22 MACA	ENV23 MACA	ENV24 MACA	ENV25 MACA	ENV26 MACA	ENV27 MACA	ENV28 MACA	ENV29 MACA	ENV30 MACA	ENV31 MACA	ENV32 MACA	ENV33 MACA	ENV34 MACA	ENV35 MACA	ENV36 MACA	ENV37 MACA	ENV38 MACA	ENV39 MACA	ENV40 MACA	ENV41 MACA	ENV42 MACA	ENV43 MACA	ENV44 MACA
596189	*Spio symphyta*		Count	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131187	*Spiophanes bombyx*		Count	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0	0	0	1	0	0	0
130269	*Magelona johnstoni*		Count	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	2	33	42	3	12	7	34	2	0	0	44	3	0	1	1	0	0	6	9	6	1	11	9	1
130268	*Magelona filiformis*		Count	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	2	0	0	0
152217	*Chaetozone christiei*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	0	0	1
129955	*Chaetozone setosa*	Aggregate	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152269	*Tharyx killariensis*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
129211	Capitella		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
129892	*Mediomastus fragilis*		Count	1	0	0	0	0	0	0	0	0	1	0	11	0	0	9	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	1	0	0	0
129220	Notomastus		Count	0	0	0	0	5	2	0	0	0	7	0	2	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0
129911	*Pseudonotomastus southerni*		Count	1	0	0	0	0	0	0	2	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
924	Opheliidae	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
130491	*Ophelia borealis*		Count	1	1	1	3	1	0	0	0	0	1	2	7	2	6	8	4	0	3	0	0	0	0	0	0	0	0	0	0	4	11	0	0	5	1	7	5	4	2	0	0	5	0	0	0
129472	Polygordius		Count	1	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
130837	*Protodriloides chaetifer*		Count	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129427	Owenia		Count	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	1	0	1	0	0	0	0	0	2	0	0	4	15	0
980	Pectinariidae	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
152367	*Lagis koreni*		Count	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	1	1	4	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	1	0	0	2	0	0	0	0	0
982	Terebellidae	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
982	Terebellidae	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131495	*Lanice conchilega*		Count	10	12	2	0	1	0	0	12	2	3	2	150	0	5	28	18	3	19	0	0	0	0	0	0	0	4	0	1	0	1	2	0	9	2	16	7	5	0	2	0	1	1	3	0
129700	Loimia		Count	26	60	0	0	14	0	0	6	2	39	85	126	4	4	104	63	7	29	0	0	2	0	0	0	3	1	2	0	1	4	2	0	3	0	1	1	4	0	7	1	0	0	0	0
129710	Polycirrus		Count	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARTHROPODA																																															
120020	*Gastrosaccus spinifer*		Count	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101400	Oedicerotidae	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102915	*Perioculodes longimanus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102916	*Pontocrates altamarinus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0
102918	*Pontocrates arenarius*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
102928	*Synchelidium maculatum*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
236495	*Apolochus neapolitanus*		Count	0	1	0	0	0	0	1	1	0	0	5	5	0	2	7	0	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	1	0	0	0	0
102460	*Leucothoe incisa*		Count	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103166	*Stenothoe marina*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
103169	*Stenothoe monoculoides*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103226	*Urothoe brevicornis*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
103235	*Urothoe poseidonis*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2	
102748	*Tryphosa nana*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
101501	Nototropis	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102139	*Nototropis falcatus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
488966	*Nototropis swammerdamei*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101891	*Ampelisca brevicornis*		Count	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101742	Bathyporeia	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
101742	Bathyporeia	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	24	0	0	0	0	
103058	*Bathyporeia elegans*		Count	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	1	0	2	7	0	0	2	0	3	0	1	2	0	2	0	0	0	1	0	2	0	1	1	3
103060	*Bathyporeia guilliamsoniana*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
102783	*Megaluropus agilis*		Count	0	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
102788	*Abludomelita obtusata*		Count	0	6	0	2	0	0	0	1	0	0	12	10	1	0	45	3	2	13	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	6	0	0	2	0	0	1	0	0
101669	Cheirocratus	Female	Count	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102377	*Megamphopus cornutus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102380	*Microprotopus maculatus*		Count	0	16	0	1	2	0	0	2	0	0	31	16	0	3	25	5	12	6	1	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	4	23	0	0	22	2	0	1	1	0
102383	*Photis longicaudata*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101368	Aoridae	Female	Count	0	1	0	2	0	0	0	1	0	1	1	1	0	0	1	1	1	27	0	0	2	0	1	0	0	6	2	1	0	1	0	0	1	0	3	3	0	0	0	0	0	0	0	0
102012	*Aora gracilis*		Count	0	1	0	1	0	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
101376	Corophiidae	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
101376	Corophiidae	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0

Aphia ID	Taxa	Qualifier	Units	ENV01 MACA	ENV02 MACA	ENV03 MACA	ENV04 MACA	ENV05 MACA	ENV06 MACA	ENV07 MACA	ENV08 MACA	ENV09 MACA	ENV10 MACA	ENV11 MACA	ENV12 MACA	ENV13 MACA	ENV14 MACA	ENV15 MACA	ENV16 MACA	ENV17 MACA	ENV18 MACA	ENV19 MACA	ENV20 MACA	ENV21 MACA	ENV22 MACA	ENV23 MACA	ENV24 MACA	ENV25 MACA	ENV26 MACA	ENV27 MACA	ENV28 MACA	ENV29 MACA	ENV30 MACA	ENV31 MACA	ENV32 MACA	ENV33 MACA	ENV34 MACA	ENV35 MACA	ENV36 MACA	ENV37 MACA	ENV38 MACA	ENV39 MACA	ENV40 MACA	ENV41 MACA	ENV42 MACA	ENV43 MACA	ENV44 MACA
225814	*Monocorophium acherusicum*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101857	*Pariambus typicus*		Count	0	6	0	0	0	1	2	2	0	1	5	41	0	1	25	11	20	59	3	0	1	0	0	0	1	4	0	0	0	0	11	0	5	0	5	11	3	0	16	1	0	1	4	0
101864	*Phtisica marina*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136486	*Tanaissus lilljeborgi*		Count	0	0	9	0	0	0	0	0	0	0	0	1	0	5	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0
110465	*Cumopsis goodsir*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110445	*Bodotria scorpioides*		Count	0	2	0	0	1	0	0	0	0	0	1	2	0	0	3	0	2	11	0	1	1	1	0	0	0	0	0	1	0	0	9	2	1	1	0	1	0	0	3	0	3	0	0	0
422916	*Monopseudocuma gilsoni*		Count	0	0	0	0	5	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0	0	0
110627	*Pseudocuma (Pseudocuma) longicorne*		Count	0	0	3	3	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	2	3	8	0	2	2	0	0	6	1	4	0	0	0	0	0	3	0	0	0	0
110472	*Diastylis bradyi*		Count	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0
108343	*Processa modica modica*		Count	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
106782	Crangonidae	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107552	*Crangon crangon*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
107739	*Upogebia deltaura*		Count	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106738	Paguridae	Damaged	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107232	*Pagurus bernhardus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
205077	Macropodia	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
107281	*Thia scutellata*		Count	2	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107392	*Liocarcinus navigator*		Count	0	0	0	0	0	0	0	0	0	0	1	7	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
107388	*Liocarcinus holsatus*		Count	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
MOLLUSCA																																																
101	Gastropoda	Damaged	Count	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
138952	*Caecum glabrum*		Count	0	7	0	0	0	0	1	2	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138963	*Crepidula fornicata*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138963	*Crepidula fornicata*	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
151894	*Euspira nitida*		Count	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139718	*Epitonium clathratulum*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
141638	*Embletonia pulchra*		Count	15	26	0	0	37	0	0	19	8	1	38	1	1	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	0	0	0	0	0
105	Bivalvia	Species A	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
211	Mytilidae	Juvenile	Count	1	1	0	0	1	4	3	2	2	4	2	4	3	0	8	5	1	3	0	2	1	0	0	0	1	0	0	0	1	4	1	0	9	0	1	0	2	0	0	1	0	0	0	1
140471	*Musculus costulatus*		Count	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146952	*Tellimya ferruginosa*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	1	17	2	1	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	54	0
345281	*Kurtiella bidentata*		Count	0	4	0	0	0	0	0	1	0	0	3	16	0	1	8	4	3	19	0	2	0	0	0	2	2	7	1	0	3	7	0	2	25	4	3	8	9	0	4	1	5	0	3	4
138831	*Goodallia triangularis*		Count	4	0	0	0	4	20	4	9	6	7	0	20	1	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
138159	Spisula	Juvenile	Count	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140300	*Spisula elliptica*		Count	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
140301	*Spisula solida*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
876640	*Ensis leei*		Count	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0
140733	*Ensis ensis*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160539	*Ensis magnus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
14636	Tellinoidea		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
225468	Tellininae	Juvenile	Count	0	2	0	0	0	0	0	0	0	0	1	5	0	0	0	0	27	0	3	0	0	0	10	14	0	1	0	0	0	0	15	6	0	0	0	0	0	0	5	0	0	37	0	0
146907	*Fabulina fabula*		Count	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	7	0	0	0	0	0	10	1	7	4	34	32	0	0	1	9	5	0	4	0	1	0	2	3	6	5	8	24	8
147021	*Moerella donacina*		Count	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
879714	*Asbjornsenia pygmaea*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139604	*Donax vittatus*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	1	1	
138388	*Gari*	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138474	*Abra*	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	1	7	0	0	0	0	1	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0
141433	*Abra alba*		Count	0	5	0	1	0	0	0	0	0	0	0	27	0	0	6	9	0	9	0	2	0	1	4	1	1	1	1	0	6	27	3	2	4	0	11	0	17	0	3	0	2	1	1	7
141436	*Abra prismatica*		Count	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
141908	*Chamelea striatula*		Count	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
745846	*Polititapes rhomboides*		Count	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138636	Dosinia	Juvenile	Count	5	0	0	0	1	0	0	0	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0
141911	*Dosinia exoleta*		Count	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
156961	*Petricolaria pholadiformis*	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
140728	*Mysia undata*		Count	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138211	*Mya*	Juvenile	Count	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

Aphia ID	Taxa	Qualifier	Units	ENV01 MACA	ENV02 MACA	ENV03 MACA	ENV04 MACA	ENV05 MACA	ENV06 MACA	ENV07 MACA	ENV08 MACA	ENV09 MACA	ENV10 MACA	ENV11 MACA	ENV12 MACA	ENV13 MACA	ENV14 MACA	ENV15 MACA	ENV16 MACA	ENV17 MACA	ENV18 MACA	ENV19 MACA	ENV20 MACA	ENV21 MACA	ENV22 MACA	ENV23 MACA	ENV24 MACA	ENV25 MACA	ENV26 MACA	ENV27 MACA	ENV28 MACA	ENV29 MACA	ENV30 MACA	ENV31 MACA	ENV32 MACA	ENV33 MACA	ENV34 MACA	ENV35 MACA	ENV36 MACA	ENV37 MACA	ENV38 MACA	ENV39 MACA	ENV40 MACA	ENV41 MACA	ENV42 MACA	ENV43 MACA	ENV44 MACA
378492	*Varicorbula gibba*		Count	0	2	0	0	0	0	1	0	1	0	1	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
138549	*Thracia*	Juvenile	Count	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
ECHINODERMATA																																														
123080	Asteroidea	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123867	*Astropecten irregularis*		Count	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123206	Amphiuridae	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
123200	Ophiuridae	Juvenile	Count	0	0	0	0	0	0	0	0	0	0	2	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0
124913	*Ophiura albida*		Count	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	8	0	8	0	1	0	4	0	0	0	0
124929	*Ophiura ophiura*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	9	0	0	0	0	0	0	0
124392	*Echinocardium cordatum*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
OTHER																																														
ANNELIDA																																														
137582	*Tubificoides pseudogaster*	Aggregate	Count	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	4	0	0	0	0	0	2	0	0	0	1	3
137349	Grania		Count	107	78	3	0	72	8	31	108	71	17	6	44	33	34	4	154	11	4	0	0	0	0	1	0	0	3	5	1	0	5	1	0	257	7	36	190	4	0	0	0	0	0	2
CHORDATA																																														
104906	*Branchiostoma lanceolatum*		Count	31	0	0	0	42	17	13	20	18	10	4	0	0	1	10	5	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	8	0	0	0	0	0	0	0
1839	Ascidiacea	Juvenile	Count	2	36	0	1	264	460	0	88	76	0	5	4	0	0	8	4	15	0	0	0	0	0	0	1	0	0	0	1	7	14	1	0	0	0	0	0	19	0	0	0	48	0	0	0
CNIDARIA																																														
283798	*Cerianthus lloydii*		Count	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1360	Actiniaria		Count	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	1	0	1	0	1	3	0	0	1	1	0	0	3	0	0	1	4	0
NEMERTEA																																														
152391	Nemertea		Count	7	3	0	0	28	4	1	20	28	0	50	16	1	0	3	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	9	0	6	1	2	0	4	0	0	0
PHORINIDA																																														
128545	Phoronis		Count	0	1	0	3	0	0	0	0	0	0	1	15	4	1	0	0	4	0	4	1	0	0	1	0	1	1	1	0	1	4	0	0	0	0	0	0	0	0	0	55	1	0	0
ARTHROPODA																																														
150520	*Nymphon brevirostre*		Count	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix H2: Taxa excluded from analysis

AphialID	TaxonName	Qualifier	Abundance Unit	ENV01 MACA	ENV02 MACA	ENV03 MACA	ENV04 MACA	ENV05 MACA	ENV06 MACA	ENV07 MACA	ENV08 MACA	ENV09 MACA	ENV10 MACA	ENV11 MACA	ENV12 MACA	ENV13 MACA	ENV14 MACA	ENV15 MACA	ENV16 MACA	ENV17 MACA	ENV18 MACA	ENV19 MACA	ENV20 MACA	ENV21 MACA	ENV22 MACA	ENV23 MACA	ENV24 MACA	ENV25 MACA	ENV26 MACA	ENV27 MACA	ENV28 MACA	ENV29 MACA	ENV30 MACA	ENV31 MACA	ENV32 MACA	ENV33 MACA	ENV34 MACA	ENV35 MACA	ENV36 MACA	ENV37 MACA	ENV38 MACA	ENV39 MACA	ENV40 MACA	ENV41 MACA	ENV42 MACA	ENV43 MACA	ENV44 MACA
2	Animalia	Eggs	P/A	0	0	0	0	P	0	0	0	P	0	0	P	P	P	P	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0
ARTHROPODA																																															
106039	Balanomorpha	Juvenile	P/A	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1080	Copepoda		P/A	0	P	P	0	0	0	0	P	0	P	P	0	0	0	0	0	P	P	0	0	0	0	0	0	0	P	P	0	P	P	P	0	P	0	0	P	0	0	0	0	P	0	0	P
1080	Copepoda	Parasite	Count	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0
1091	Podocopida		P/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRYOZOA																																															
111604	*Alcyonidium parasiticum*		P/A	P	0	0	P	P	0	0	0	0	0	P	P	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	P	0	0	0	0	0	0	0	0	0	0	0	0
111351	*Conopeum reticulum*		P/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0
111354	*Electra monostachys*		P/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	0	0	0
111355	*Electra pilosa*		P/A	0	P	0	P	0	0	0	0	0	0	P	P	0	0	P	P	0	0	P	0	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHORDATA																																															
125999	*Pomatoschistus*		Count	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
125909	*Ammodytes*		Count	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
CILIOPHORA																																															
1692	Folliculinidae		P/A	P	P	0	P	P	0	0	0	P	0	P	0	P	0	P	P	P	0	0	0	0	0	0	P	0	0	P	0	0	0	0	0	P	0	P	P	P	P	0	0	0	0	0	0	0
CNIDARIA																																															
117804	*Phialella quadrata*		P/A	0	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117234	Sertularia		P/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	0	0	0	0	0	0
1606	Campanulariidae		P/A	0	P	P	P	0	0	0	0	0	P	P	P	0	P	P	P	0	P	P	0	0	0	0	P	0	P	0	0	0	P	P	0	P	0	P	P	P	P	P	P	0	0	P	P
117368	*Clytia hemisphaerica*		P/A	0	0	0	P	0	0	0	0	0	0	P	P	0	0	P	0	P	0	P	0	0	0	0	0	0	0	0	0	0	0	P	P	0	0	0	0	0	0	P	0	0	0	0	0
NEMATODA																																															
799	Nematoda		P/A	0	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0	P	P	P	P	0	0	P	0	P	P	P	P	0	P	P	P	P	P	P	P	P	0	P	P	P

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