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Title	**Integration report - Geophysical and geotechnical survey – AO6 OWF Zone 1 area**			
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02/09/2024	*00*	*IFR*	*Issued*	*RAP*	*CBC*	*AN*
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Change log:

The reports has been approved with comments. Please note that the comments presented in the next page remain open and require your attention.

4.1.3	Could you please present a SBP profile to illustrate the quality of the data?	16.09.2024	Open
Figure 4-5	Survey_ID is incorrect, this is an ID for EC area	16.09.2024	Open
-	Why the OWF area is divided in two parts in all the figures ?	16.09.2024	Open
6	"As mentioned in the data source limitations in section 4.1, SBP data is of generally good quality. However, data were supplied with a phase rotation with a greater range of negative amplitudes values than positive" I do not see any need to repeat the statement about the data quality in this section dedicated to the Geological Framework	16.09.2024	Open
6.1	I would remove the "Regional Geotechnical Units" if it comes from an interpretation of UHRS data. You can juste propose a "soil type" in this colomn, I do not see a reason to create a regional geotechnical unit which will create confusion with other units derived from Geotechnical data	16.09.2024	Open
10	"This section details the geotechnical units derived for the AO6 OWF Zone 2 area based on geotechnical data referenced in Section 4.5, aided by the seismo-stratigraphic framework presented in Section 6 and its limitations" Please rephrase to clarify the approach, the units are defined from the stratigraphic framework which has been verified and completed by the data	16.09.2024	Open
Table 32	Please replace the RGT (which are confusing with these new Geotechnical units) with the stratigraphic units	16.09.2024	Open
-	Can you add a word regarding the velocity model ? Is the same velocity shall be applied for each unit? Did you made the a conversion from the units thickness in time and depth to check the velocity model ?	16.09.2024	Open
-	"Due to a similar seismic response, the distinction within the different units is not possible using the UHRS dataset." I guess it is the same case for SAND 1 and SAND 2 also for exemple or for SILT 1 and SILT 2. Could you please mention which units can be differenciated from seismic	16.09.2024	Open
-	How do you make the distinction between CLAY 1 and CLAY 2 based on geotechnical parameters ? What is the treshold for all the units ?	16.09.2024	Open
Table 32	The general ground model does not make sense stratigraphically and geologically speaking. -Why some geotechnical units are present within another unit (example of SAND 1 within SILT2 in the Z1_OWF_B15 or sometimes a unit is above another and sometimes below (example of SAND 1 above CLAY 1 in every log, except for Z1_OWF_B02B where SAND 1 is below) -How do we understand the repartition of these Geotechnical units ? The common way to perform a Ground Model is to define sub-units within stratigraphical units and to define LE, BE, HE parameters within this sub-units. The proposed approach does not present range of parameters within a stratigraphical unit so it cannot be be used as a base for further Ground Model refinement with additional data.	16.09.2024	Open
-	I would include a disclaimer section, explaining the approach considered and mentionning that the geotechnical parameters indicated for Geotechnical Units shall not be considered within a Stratigraphical Unit because some geotechnical tests used for Geotechnical Units characterisation might not be part of the considered Stratigraphical Unit.	16.09.2024	Open
MED AO6 OWF Profiles	Why is there this pink SILT unit ? I understood that there was SILT 1 and SILT 2 ? What are the characteristics of this unit ?	16.09.2024	Open
MED AO6 OWF Profiles	Why the Geotechnical units are not presented in the profiles ?	16.09.2024	Open
MED AO6 OWF Profiles	Can you please present isopachs of all the units instead of Depth of Top Limit.	16.09.2024	Open
-	"Geotechnical units and parameters' estimates (derived from CPT data and lab testing) and presented in section 10 for each of the 7 subunits may only be valid within approximately 100 m radius of the geotechnical locations" This approach is uncorrected: The parameters are invalid even at 5m of the geotechnical locations for design purpose, however, a indicative range of parameters should be presented for soil units that are distributed over the area, otherwise this is not a ground model. Same statement as previous comment, this model can not be used as a base for further refinement. Anyway, I would remove this sentence about the validity of the parameters in the 100m radius, it does not make sense.	16.09.2024	Open
MED AO6 OWF Profiles	Please present the seismic horizon instead of the RGT units limit.	16.09.2024	Open
	Could you please provide recommendations for further surveys with regards to the specific Geotechnical/Stratigraphical units. Which units present large variations in terms of geotechnical parameters? Which unit is not imaged or poorly imaged by the geophysical data ? Etc...	16.09.2024	Open
Figures 6-3/ Regional profiles	Why are presented the tests from the OSS if they are not presented in the report and integrated in the model ?	16.09.2024	Open

TECNOAMBIENTE
A TRADEBE COMPANY

MINISTÈRE
DE LA TRANSITION
ÉCOLOGIQUE

MED_AO6 AREA
OFFSHORE WINDFARM
GEOPHYSICAL AND GEOTECHNICAL SURVEY

MED-TEC-00069_A_ rev01_Integration report - Geophy/Geotech - OWF Zone 1 AO6 area

PROJECT No.
113401341

INTEGRATION REPORT

No. OF PAGES
106 + Appendices

01	*08/04/2025*	*Approved with comments*	*CBC*	*MB*	*AN*	*FLO*	*DGEC*
01	*25/03/2025*	*Issued*	*CBC*	*MB*	*AN*	*FLO*	*DGEC*
00	*02/09/2024*	*Issued*	*RAP*	*CBC*	*AN*	*FLO*	*DGEC*
REV	***DATE***	***DESCRIPTION***	***BY***	***CHK***	***ENG***	***PM***	***CLIENT***

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ABBREVIATIONS

ALARP	As Low as Reasonably Practicable
API	American Petroleum Institute
ASV	Assumed Sound Velocity
BE	Best Estimate
BSB	Below Seabed
c'	Cohesion
CIUc	Isotopically Consolidated Undrained Triaxial Compression
CID	Isotopically Consolidated Drained Triaxial Compression
cm	Centimetre
CPT	Cone Penetration Test
CRS	Constant Rate of Strain Test
DEM	Digital Elévation Model
DGEC	Direction Générale de l'Énergie et du Climat
DR	Relative Density
DS	Direct Shear
DSS	Direct Simple Shear
EC	Export Cable
FC	Fall Cone
GIS	Geographic Information System
HE	High Estimate
LE	Low Estimate
LS	Lower Surface
LV	Lab Vane
m	Meters
MBES	Multibeam Echosounder
ORG	Organic Matter
OSS	Offshore Substation
OWF	Offshore windfarm
PC	Piston Core
Phi'	Friction Angle

PP	Pocket Penetrometer
PSD	Particle Size Distribution
pUXO	Possible Unexploded Ordnance
q_c	Cone tip resistance
Qnet	Net cone resistance
RGTU	Regional Geotechnical Unit
SBP	Sub Bottom Profiler
SHOM	Service Hydrographique et Océanographique de la Marine
SSS	Side Scan Sonar
SSU	Seismo-stratigraphic Unit
Su	Undrained Shear Strength
SRB	Sulphate Reducing Bacteria
TA	Tecnoambiente
THIXO	Thixotropy
TRT	Thermal Resistivity Test
TV	Torvane
u_2	Pore Pressure
US	Upper Surface
UHRS	Ultra-High Resolution Seismic
UTM	Universal Transverse Mercator
UU	Undrained Triaxial Test
UUr	Undrained Triaxial Remoulded Test
UXO	Unexploded Ordnance
VC	Vibrocore
WGS84	World Geodetic System 1984
ZH	Zero Hydrographic

1 EXECUTIVE SUMMARY

DGEC contracted TECNOAMBIENTE to integrate geophysical and geotechnical data and provide an initial ground model for the AO6 Offshore Wind Farm (OWF).

The geophysical dataset used for integration consisted of Ultra-High-Resolution Seismic profiles (UHRS) acquired by Tecnoambiente across the AO6 OWF Zone 1 (OWF 1) area. Multibeam Echosounder (MBES), Sub-bottom Profiler (SBP), and Side Scan Sonar (SSS) datasets were acquired by SHOM in previous campaigns. Prior to the geotechnical investigation, Tecnoambiente obtained 20 UXO area clearances and the corresponding ALARP certificates. Additional MBES and SSS data acquired during the export cable (EC) and UXO survey by Tecnoambiente were factored into the integration work.

The geotechnical survey was performed by Tecnoambiente. 12 CPT locations were tested in OWF 1 (with an additional 3 retests due to refusals). Additionally, 4 PC and 2 VC locations were acquired in Zone 1 with associated offshore and onshore laboratory testing, making a total of 21 geotechnical locations. However, the OWF 1 area polygon was redefined, and some of these locations were excluded as they were considered too far from the new polygon boundary. For integration and ground truthing, 8 geotechnical locations were finally considered, which included 8 CPT, 2 PC and 2 VC.

Geotechnical data was evaluated for the following four (4) main soil types derived and used for integration and ground-truthing purposes.

- Silt
- Sand
- Interbedded sand and clay
- Clay

As part of this integration work, geophysical data provided by SHOM (SBP lines) and Tecnoambiente (UHRS lines) were reprocessed and integrated with geotechnical data to provide

geotechnical units and parameters within the limitations stated herein. Tecnoambiente developed a comprehensive GIS database, which is included in this report, and a set of charts.
The following seven (7) regional geotechnical units were derived from SBP and UHRS datasets:

- RGT unit 1
- RGT unit 2
- RGT unit 3
- RGT unit 4
- RGT unit 5
- RGT unit 6
- RGT unit 7

The following three (3) Geotechnical Units and six (6) Subunits with geotechnical parameters estimates have been obtained within the first 30 m BSB:

- SILT (SILT1 and SILT2)
- SAND (SAND1 and SAND2)
- CLAY (CLAY1 and CLAY2)

Due to the complex geological settings and limitation of the geophysical data discussed herein, soil types (based on ground-truthed horizons) can be extrapolated within a 500 m radius of the geotechnical locations in line with APPENDIX III – INTEGRATED CHARTS. However, geotechnical units and parameter estimates (derived from CPT data and lab testing) may only be valid within approximately a 100 m radius of the geotechnical locations.

1.1 SCOPE OF WORK

The objective of this report is to present the integration work performed on the geophysical and geotechnical data sets (listed in Section 4) and provide an initial ground model together with relevant geotechnical parameters to assist the preliminary AO6 OWF Zone 1 turbines anchoring design.

1.2 SURVEY AREA

The AO6 OWF Zone 1 is located in the Gulf of Lion, at 37.40 km from Cap Leucate and 31.70 km from the Narbonne-plage. The OWF 1 development area is an irregular polygon with 15.45 km width in its maximum axis and around 12.45 km length in its southernmost side. The OWF 1 area is 144.66 sq. km with water depths ranging from -87.01 to -99.18 m and a mean depth of -92.795 m. The AO6 Zone 1 area is divided in three sites (Figure 1-1):

- Offshore Substation (OSS) (10.29 km^2)
- Export cable (EC) (72.51 km^2)
- **Windfarm area (OWF) (295.5 km^2)**

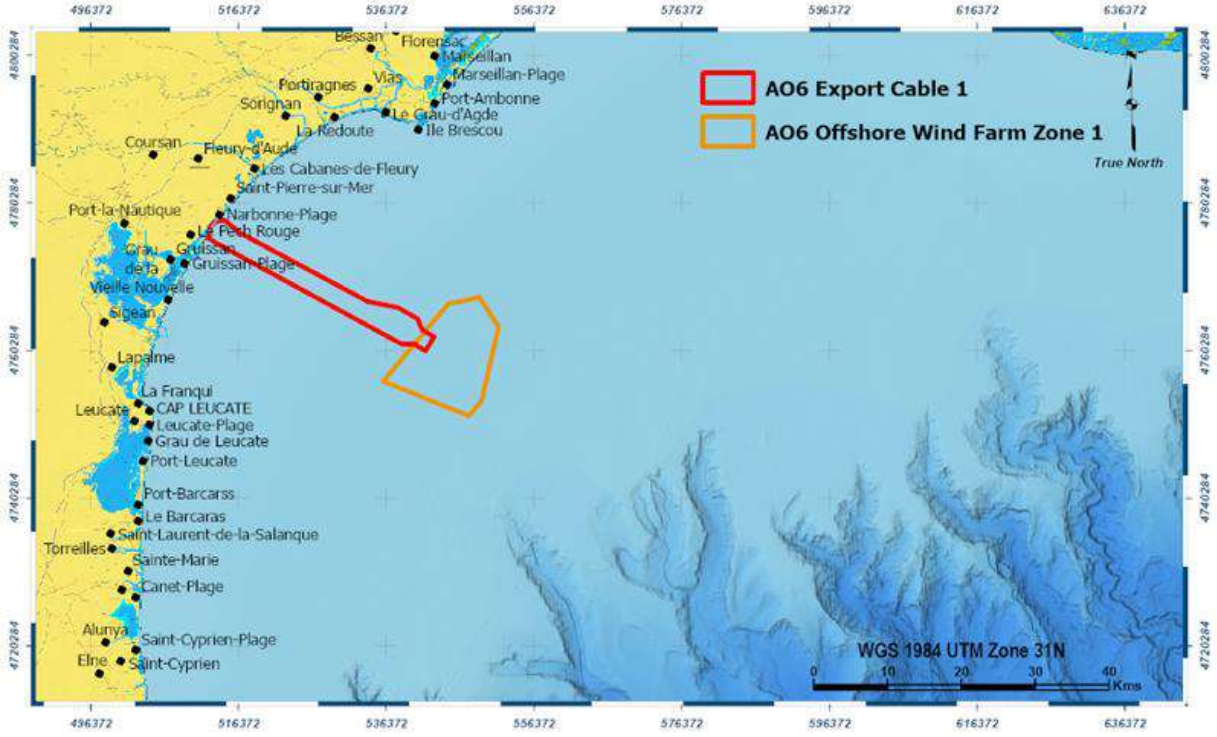

Figure 1-1 AO6 Windfarm area (OWF) and Export cable (EC) in the MED_AO6 Zone 1 Survey area.

2 DATA REFERENCES

The information in this report should be read in conjunction with the supplementary reports and references presented in Table 1 and Table 2.

Table 1 Seismic survey documentation and report reference names created by TA.

Document Type	Name	Ref #
Project Execution Plan	MED_TEC_02_PEP_1	Ref. 1
Project Execution Plan	MED_TEC_76_PEP_rev03	Ref. 2
Offshore Geotechnical Survey Mobilisation Report	MED_GEN_TEC_23_Mobilisation report_Geotechnical survey - AO6 OWF areas_3_A	Ref. 3
Offshore UXO Survey Mobilisation Report	MED_GEN_TEC_22_Mobilisation report_UXO survey - AO6 area_1_A	Ref. 4
Offshore Seismic Survey Mobilisation Report	MED_GEN_TEC_21_Mobilisation report_Seismic survey - AO6 area_2_A	Ref. 5
Offshore Geotechnical Survey Operational Report – OWF area	MED_TEC_38_Operational report - Geotechnical survey - OWF Zones 1 to 4 areas_0	Ref. 6
Offshore Seismic Survey Operational Report – OWF area	MED_TEC_24_Operational report - Seismic survey - OWF Zone 1 AO6 area_1	Ref. 7
Offshore Geophysical UXO Survey Operational Report – OWF area	MED_TEC_31_Operational report - UXO survey - OWF Zone 1 AO6 area_0_A	Ref. 8
Offshore Geotechnical Survey Factual Report	MED-TEC-00062_A_rev02_Factual report - Geotechnical survey - OWF Zones 1 to 4 areas	Ref. 9
Offshore Seismic Survey Factual Report – OWF area	MED_TEC_48_Factual report - Seismic survey - OWF Zone 1 AO6 area_2_A	Ref. 10
Offshore Geophysical UXO Survey Factual Report – OWF area	MED_TEC_55_Factual report - UXO survey - OWF Zone 1 AO6 area_0	Ref. 11
GIS project for AO6	RACC_NAR_area_2022-2023_Gisdata	Ref. 12
Offshore Seismic Survey Factual Report – OSS area	MED_PeM_TEC_00052_IFE_rev03- Factual report - Seismic survey - OSS Zone 1 AO6 area	Ref. 13

Table 2 References to DGEC documentation used for completing this report.

Document Type	Name	Reference name	Ref #
Reconnaissance survey AO6 Parc – Operational report	20221220_RAP_221_DGEC_EMR_Med_Parcs_Golfe_Lion_2021_2022	SHOM, 2022	Ref. 14
Sedimentologic cartography	20190807_NP_SHOM-DOPS-HOM-SEDIM_9-METHODE-CARTOGRAPHIE-SEDIMENTAIRE	SHOM, 2019	Ref. 15

Document Type	Name	Reference name	Ref #
Sediment grab samples	AO6-Med_T4.S3_Granulo_PARC_ZoneB_V2.0	SHOM, 2023	Ref. 16
Final sedimentological report	Rapport_DECF_EMR_AO6-Mediterran-nee_Zone_B_T4.S4_PARC	SHOM, 2022	Ref. 17
Notice du livrable T4.S7 – Fichiers SBP EMR AO6 Méditerranée – zone parc B	Notice_SBP_AO6_parc_B	SHOM, 2022	Ref. 18
Rapport : Campagne de mesures Project de parc eolien en Mediterranee (zone D)	Rapport_WS13_DECF_EMR_AO6-Mediterra-nee_Lot4_T4.C1	SHOM, 2023	Ref. 19
Rapport : Analyse, traitement et qualification des données Volet << Houle>>	Rapport_DECI_EMR_AO6-Med_zoneB_Lot4_Houle	SHOM, 2023	Ref. 20
Preliminary study of the seismotectonic context of the AO6 windfarms in the Gulf of Lion based on available data Final report	BRGM_RC-72169-FR _Final_review_final	BRGM, 2022	Ref. 21
6-Alpha Unexploded Ordnance Threat and Risk Assessment	9797_UXOTARA_with_RMS_AO6 Mediterra-nean_DNV_V4.0	6-Alpha, 2022	Ref. 22
Intermediate Interpretation and Integration Report - AO6 Deep Geotechnical Survey – NAR PEM site	F212871-INT-NAR-001_RTE-A06 - Geotechnical SI OSS Narbonne Intermediate Integration Report	Fugro, 2023	Ref. 23

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2.2 GIS DATABASE

The geophysical dataset was acquired by SHOM and Tecnoambiente in different survey campaigns. The Geophysical datasets has been developed in a project specific GIS package for AO6 project (Ref. 12). Geophysical data (raster and shapefiles) used to produce this report are listed in Table 3:

Table 3 Raster and shapefile datasets.

Dataset	Type	File name	File type	Created
MBES	Bathymetry	RACC_NAR_GPY_GTC_2023_DEM_1m_Z1	Geotiff	SHOM

Dataset	Type	File name	File type	Created
	Bathymetry	RACC_NAR_GPY_2023_1_DEM_05m_01_OWF_Z1	Geotiff	TA
Survey	Survey ID	Survey ID	Shapefile	TA
	UXO OWF boxes	UXO_SEARCH_AREA_PLY	Shapefile	TA
		UXO_VALIDATED_AREAS		
		UXO_TARGET_PNT		
Nautical chart	Basemap	RACC_NAR_GPY_2023_3_NC_10m_01_OWF_n_OSS	Geotiff	Navionics
Side Scan Sonar	Geophysical SHOM survey	RACC_NAR_GPY_2022_1_SSS_2m_OWF_Z1_01	Geotiff	SHOM
		RACC_NAR_GPY_2022_1_SSS_1m_OWF_Z1_02	Geotiff	SHOM
UHRS	Depth BSB	RACC_NAR_GPY_2023_1_UHRS_H10_Depth_BSB_10m_01_OWF_n_OSS_Z1	Geotiff	TA
		RACC_NAR_GPY_2023_1_UHRS_H10_Depth_BSB_10m_01_OWF_n_OSS_Z1	Geotiff	TA
		RACC_NAR_GPY_2023_1_UHRS_H20_H30_Depth_BSB_10m_01_OWF_n_OSS_Z1	Geotiff	TA
		RACC_NAR_GPY_2023_1_UHRS_H30_Depth_BSB_10m_01_OWF_n_OSS_Z1	Geotiff	TA
		RACC_NAR_GPY_2023_1_UHRS_H50_Depth_BSB_10m_01_OWF_n_OSS_Z1	Geotiff	TA
		RACC_NAR_GPY_2023_1_UHRS_H50_H55_Depth_BSB_10m_01_OWF_n_OSS_Z1	Geotiff	TA
		RACC_NAR_GPY_2023_1_UHRS_H55_Depth_BSB_10m_01_OWF_n_OSS_Z1	Geotiff	TA
		RACC_NAR_GPY_2023_1_UHRS_H60_Depth_BSB_5m_01_n_OSS_Z1	Geotiff	TA
SBP	SBP track lines	SURVEY_TRACKLINES_LIN	Shapefile	SHOM

Dataset	Type	File name	File type	Created
Contacts	Features	SEABED_FEATURES_PNT	Shapefile	TA
		SEABED_FEATURES_LIN	Shapefile	TA
		SEABED_FEATURES_PLY	Shapefile	TA
Sedimentology	Seabed classification	SEABED_CLASS_PLY	Shapefile	TA
	Granulometry	GEOLOGIC_FEATURE	Shapefile	TA

3 GEODETIC PARAMETERS

3.1 HORIZONTAL DATUM

Geodetic parameters are included in Table 4 below.

Table 4 Geodetic parameters table.

DATUM	
Survey Datum:	WGS 84
Spheroid	GRS 1980
Semi-Major Axis (a)	6,378,137.000
Semi-Minor Axis (b)	6,356,752.31424
Inverse Flattening (1/f)	1/298.257223563

Projection parameters are included in Table 5 below.

Table 5 Projection parameters table.

PROJECTION	
Projection	UTM
False Easting	500000
False Northing	0
Latitude of Origin	0º00’00.000000’’
Central Meridian	3º00’00.000000’’
UTM Zone	31 N
Scale Factor on CM	0.9996
Units:	Meters

3.2 VERTICAL DATUM

The vertical datum used is Bathyelli v2.0 ZH geoid published by the SHOM in May 2018 (Table 6). The Bathyelli v2.0 ZH is a surface based on the GRS 1980 spheroid, and it is a set of surfaces each of which defines the separation of one vertical datum from the WGS84 ellipsoid to the vertical maritime reference Hydrographic Datum or Hydrographic Zero.
Lorient (Arsenal) is located at the O.L.K3-12 station, is the reference station of the Bathyelli geoid model which belongs to the levelling network of the French IGN. To transform the datasets to LAT it would be necessary to apply an offset to the Bathyelli hydrographic zero, for O.L.K3-12 location in Lorient, this offset is 10 cm.

Table 6 Vertical datum.

VERTICAL DATUM	
Chart Datum	Bathyelli v2
Surface of reference	ZH/ell (Zero Hydrographic to the ellipsoid)

4 DATA SOURCE

Data used to develop the current integration report comes from several sources, summarized in Table 7. The coverage and quality limitations encountered are described in the sections below.

Table 7 Data source of the different data types used for this integration report.

DATA TYPE	SOURCE	COVERAGE	QUALITY	GIS File
OWF POLYGONS	DGEC	-	-	SURVEY_ID RACC_NAR_GPY_2024_1 - OWF
BATHYMETRY	SHOM	Total coverage	Medium (1 x1 m)	RACC_NAR_GPY_GTC_2023_DEM_1m_Z1
	TA	Partial coverage	High (0.5 m pixel /1500 x 1500 m spacing)	RACC_NAR_GPY_2023_1_DEM_05m_01_OWF_Z1
BATHYMETRY - Results	SHOM	Total coverage	1 contact	-
SIDE SCAN SONAR	SHOM	Partial coverage	Medium (2x2 m)	RACC_NAR_GPY_2022_1_SSS_1m_OWF_Z1_02

DATA TYPE	SOURCE	COVERAGE	QUALITY	GIS File
MBES backscatter	SHOM	Total coverage	Low (1 x 1 m)	RACC_NAR_GPY_2022_1_SSS_2m_OWF_Z1_01
Magnetic data	SHOM	Total coverage	-	-
SBP - SGY	SHOM	Total coverage	Good (250 m spacing)	SURVEY_TRACKLINES_LIN
SBP - Results	SHOM	Total coverage	Low (Sediment range)	GEOLOGIC_FEATURE_PLY – Sediment thickness
SBP – Results Raw SBP interpre-tation	SHOM	Total coverage	Low	-
SBP - Results	SHOM	EC1 coverage	Medium	GEOLOGIC_FEATURE_PNT, LIN, PLY – Acoustic mask Dunes at depth Buried Gas Pockets Gas Plums
UHRS	TA	Total coverage	Good (1500 x 1500 m spacing)	Base RGT Unit 1 Base RGT Unit 2 Top RGT Unit 3 Top RGT Unit 4 Top RGT Unit 5 Top RGT Unit 6 Top RGT Unit 7 Stratigraphic model H12 Stratigraphic model H50 Stratigraphic model H55
GRAB SAMPLES	SHOM	Partial cover-age	-	GRAB_SAMPLE_PNT
GEOTECHNICAL DATA	TA	-	Good	GT_SAMPLE_PNT

4.1 SBP, MBES AND SSS (SHOM)

SHOM carried out a geophysical survey as part of the environmental reconnaissance surveys for the future AO6 OWF Zone 1.

The objective of the surveys was to obtain bathymetry, nature and thickness of surface sediments and the potential presence of anthropic objects. Datasets provided by SHOM are listed in the Report references nº [Ref. 14 to Ref. 18].

The coverage from each geophysical survey can be checked in APPENDIX I – NORTH-UP CHARTS.

4.1.1 Bathymetry (MBES)

Two different MBES raster layers provide bathymetric information for the OWF 1, which have different zonal extensions and resolutions (Figure 4-1): a) SHOM bathymetry that covers the entire OWF 1 with a resolution of 1x1 m pixel; and 2) MBES acquired by TA following the UHRS seismic lines, with a resolution of 0.5 m pixel (see section 4.2). These datasets are also included in the GIS database available for the AO6 Zone 1 project (Ref. 12).

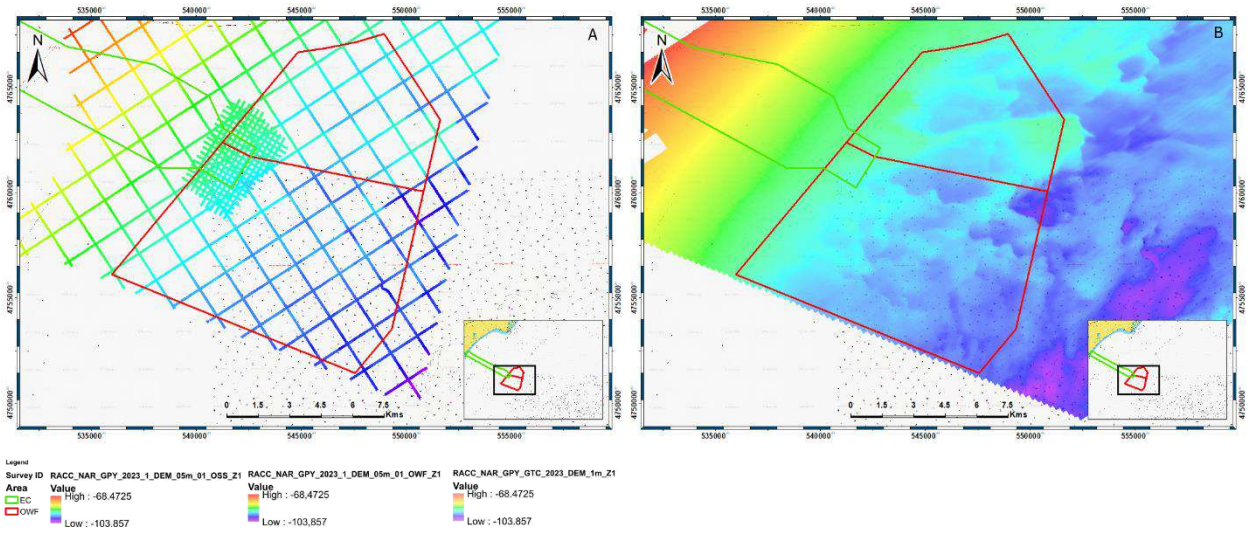


Figure 4-1 Different MBES data coverage available for the OWF 1 area: a) TA, following UHRS lines, b) SHOM. The MBES depth scales are kept consistent across the figures for comparison purposes and adjusted to the study area.

4.1.2 Side-scan sonar (SSS) and MBES backscatter

The SSS and MBES backscatter data acquired by SHOM consists of:

- Side Scan Sonar (SSS) with 2.74 x 2.74 m resolution and partial coverage of the area Figure 4-2. The quality of this dataset was deemed suitable for seabed interpretation where available.

- Grid of seabed reflectivity (backscattered) was derived from the Multibeam Echosounder (MBES) with 1 x 1 m resolution and full coverage of the area (Figure 4-2). In spite of the good resolution and coverage, backscatter was used for information only due to the poor quality of the data.

The ground truthing for seabed classification interpretation was performed using geotechnical VC and grab samples results (reported in section 4.3 and 4.5), however, these data are limited in numbers considering the extension of Zone 1 area.

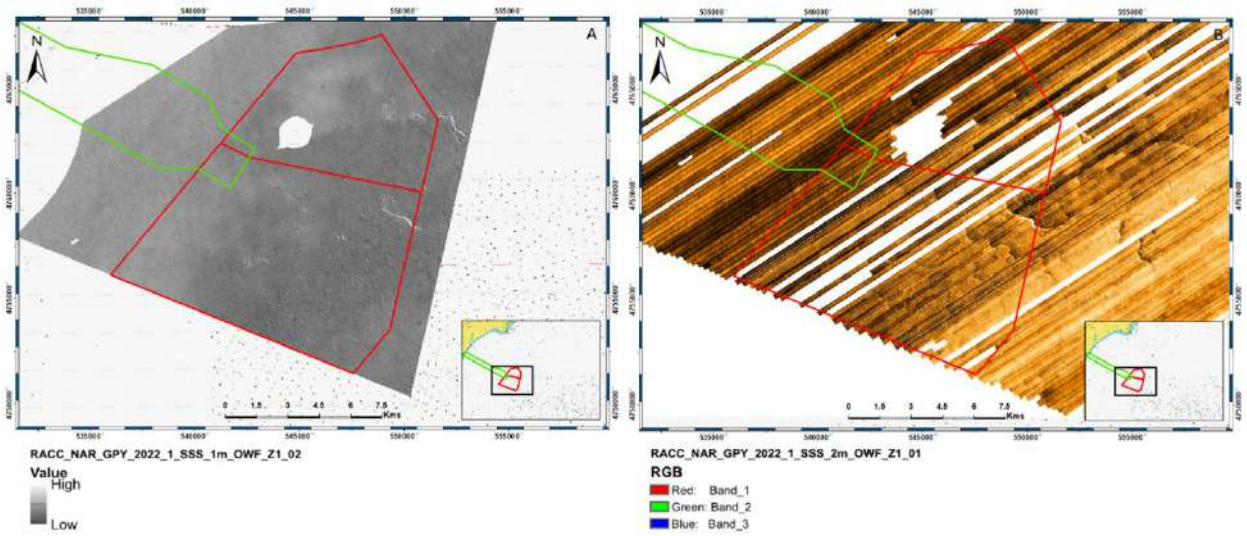


Figure 4-2 SHOM's OWF 1 a) MBES backscatter and b) SSS data.

4.1.3 Sub-bottom profiler (SBP)

SHOM sub-bottom profiler datasets provided were in SEGY format and their interpretation results. SHOM SEGY's covers the whole area with approx. 250 m spaced parallel NE-SW lines and several crosslines (Figure 4-3).

It should be noted that SEGY data were supplied with inverted phase/amplitude response (i.e. gas response would have opposite phase/amplitude as generally expected). Furthermore, the NE-SW orientation of SBP SEGY track-lines which is roughly parallel to the main geological trend and the insufficient cross lines perpendicular made the geological interpretation more challenging. Notwithstanding the above issues, SHOM SEGY dataset was deemed suitable for integration (Figure 4-3).

SHOM performed acoustic basement interpretation and provided sediment thickness map with sediment ranges (Figure 4-4). This data set was not compatible with TA integration workflow, therefore, SHOM SEGY were integrated with UHRS interpretation, which was subsequently ground truthed with geotechnical data to define seismic unit reflectors depths (gridded) in the OWF 1 area.

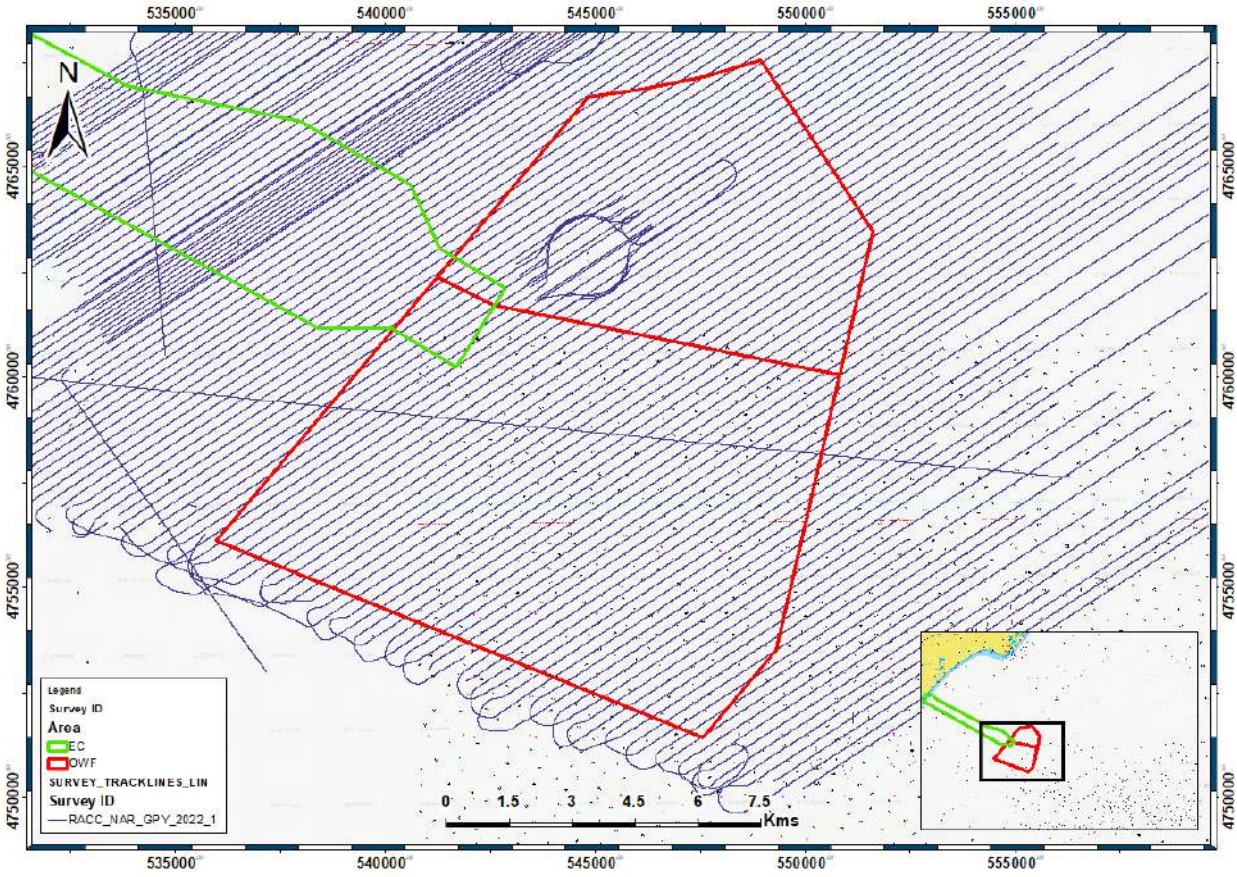


Figure 4-3 Distribution map of SBP profiles track-lines acquired by SHOM in the OWF 1 area (SHOM, 2022 (Ref. 14 and Ref. 17)).

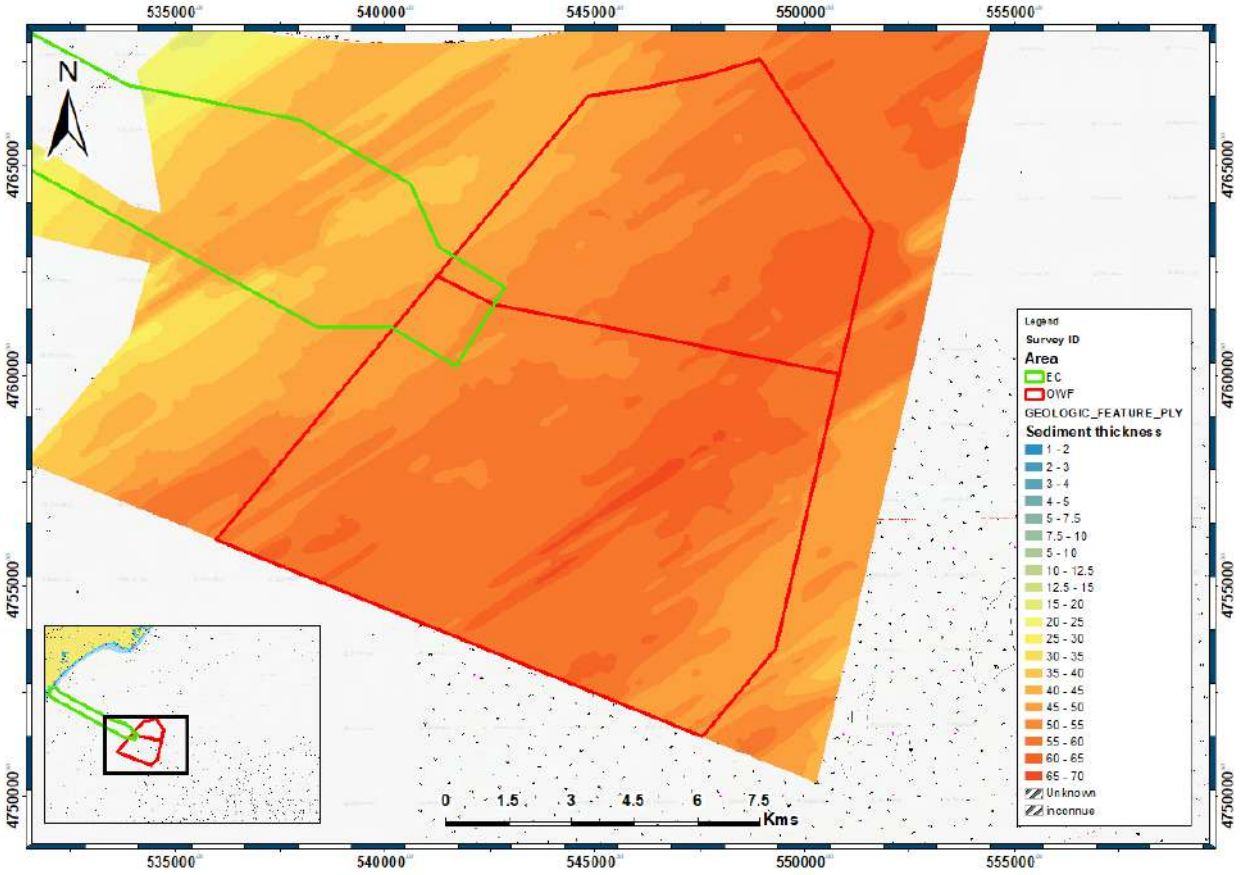


Figure 4-4 AO6 – OWF 1 SHOM SBP sediment thickness map with sediment ranges in meters BSB of the Acoustic Basement (AB) (SHOM, 2022 (Ref. 14 and Ref. 17)).

4.2 UHRS, SBP AND MBES (TA)

Tecnoambiente carried out a geophysical survey over the proposed AO6 OWF Zone 1 site to acquire Ultra High Resolution Seismic (UHRS) reflection profiles to provide a preliminary ground model over the OWF 1 site. MBES and SBP data were also acquired along UHRS profiles. A total of 110.01 km of UHRS, SBP and MBES data were obtained. Figure 4-5 shows the UHRS, SBP and MBES survey line plan for the OWF. For more details on the MBES, SBP and UHRS survey please refer to dedicated Report Ref. 5, Ref. 7 & Ref. 10.

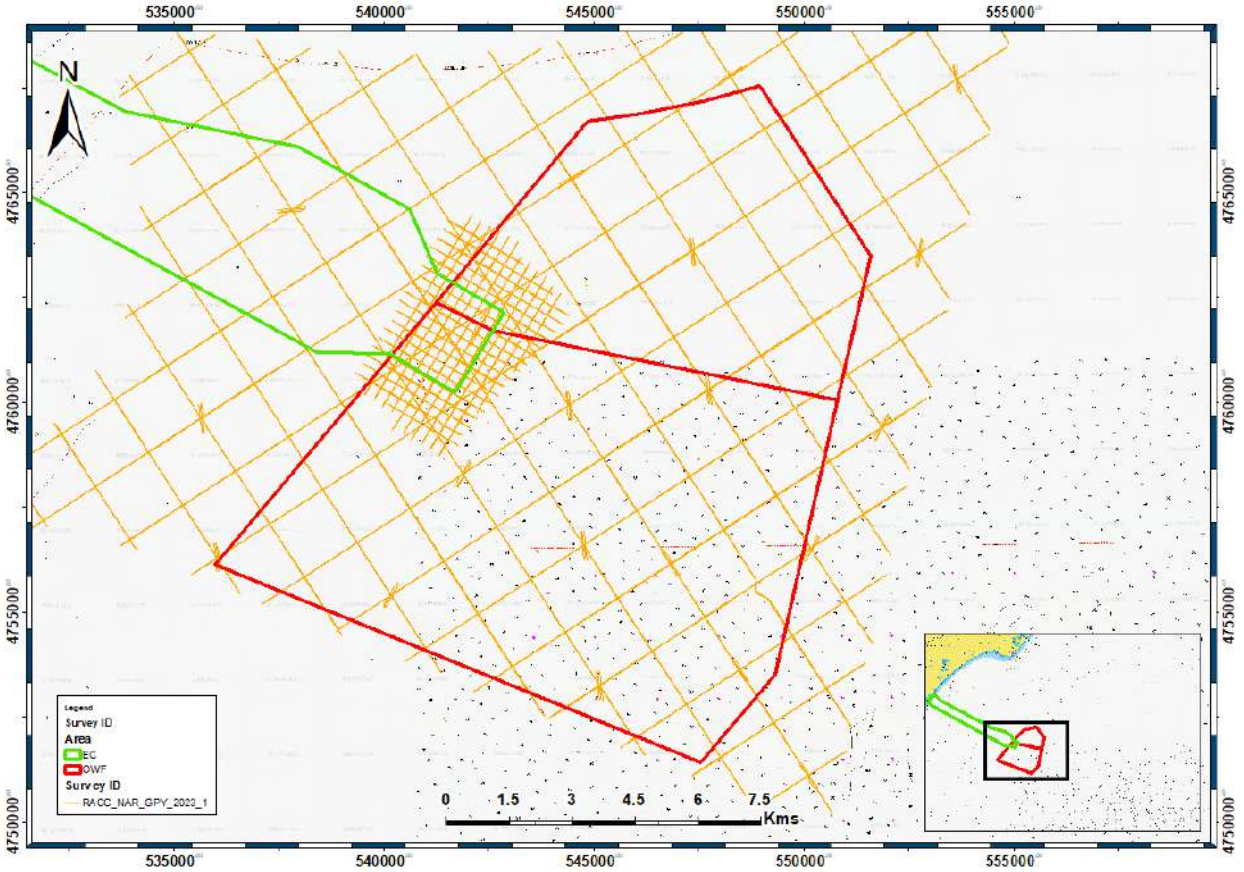


Figure 4-5 UHRS, SBP and MBES Line plan for MED_AO6 windfarm area (OWF) (TA).

For comparison and visualisation purposes, UHRS performed within the OSS area was presented in some figures, regional profiles and charts. We refer to the factual report for further information (Ref. 13).

4.3 GRAB SAMPLES

The SHOM acquired grab samples over the AO6 Zone 1 area, five of them are within the current polygon of the OWF 1.

The obtained grab samples results have been used to support the seabed classification. It should be noted that grab samples have low-density coverage (Figure 4-6), therefore, the ground-truthing phase for the seabed classification of the area was limited.

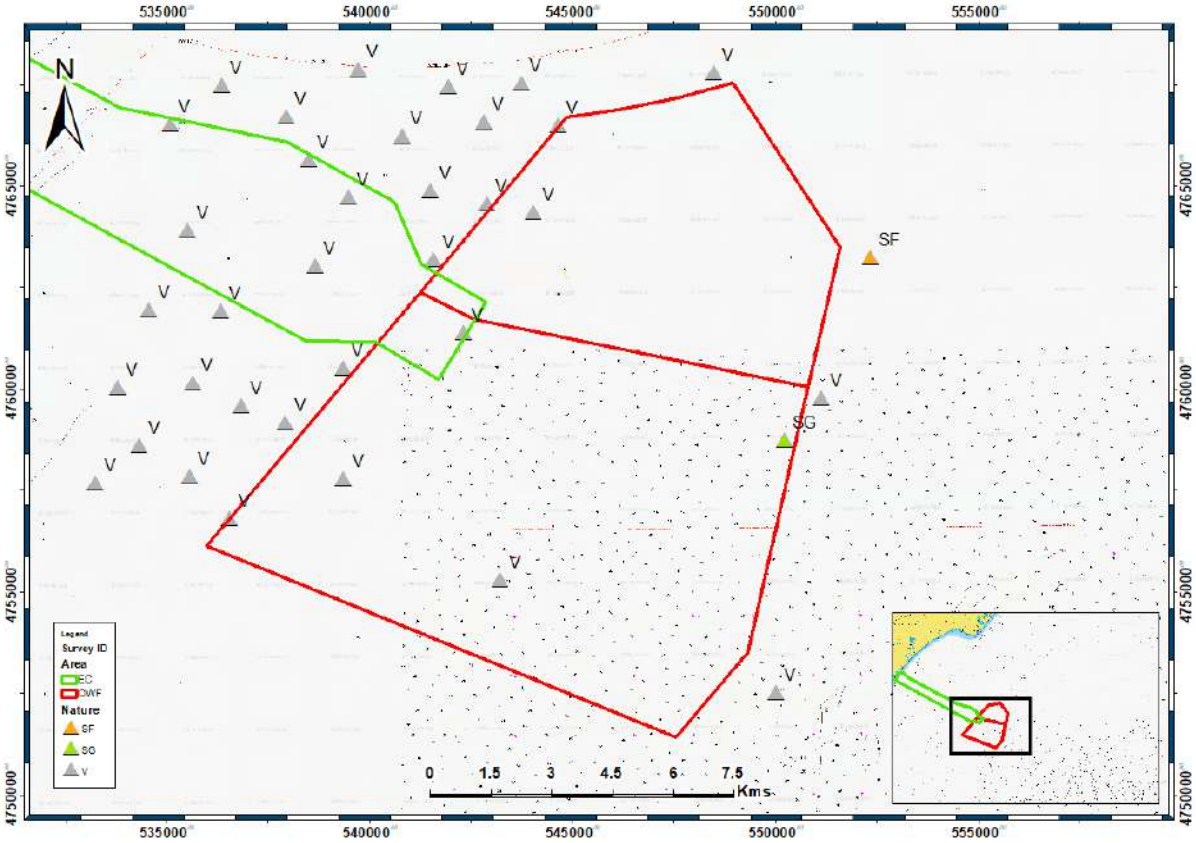


Figure 4-6 Grab samples data in the OWF area where V stands for mud, SV for fine sand and SG for gravelly sand.

4.4 UXO (TA)

UXO survey was performed by Tecnoambiente over the planned AO6 OWF Zone 1 geotechnical investigation locations. The survey consisted of the acquisition of MBES, SSS and SBP datasets. The location of the OWF 1 final validated UXO boxes is shown in Figure 4-7.

Side-scan sonar anomalies were picked and listed along the side-scan sonar lines in the UXO boxes, and they were integrated into the report and GIS geodatabase. For the survey lines containing only SSS data, specific seabed contacts and objects were identified without ferromagnetic results. Therefore, it can be difficult to distinguish anthropogenic elements from geological elements (boulders, gravel, coarser sediments, etc.).
For more details on the UXO survey, please refer to dedicated Report Ref. 8 & Ref. 11.

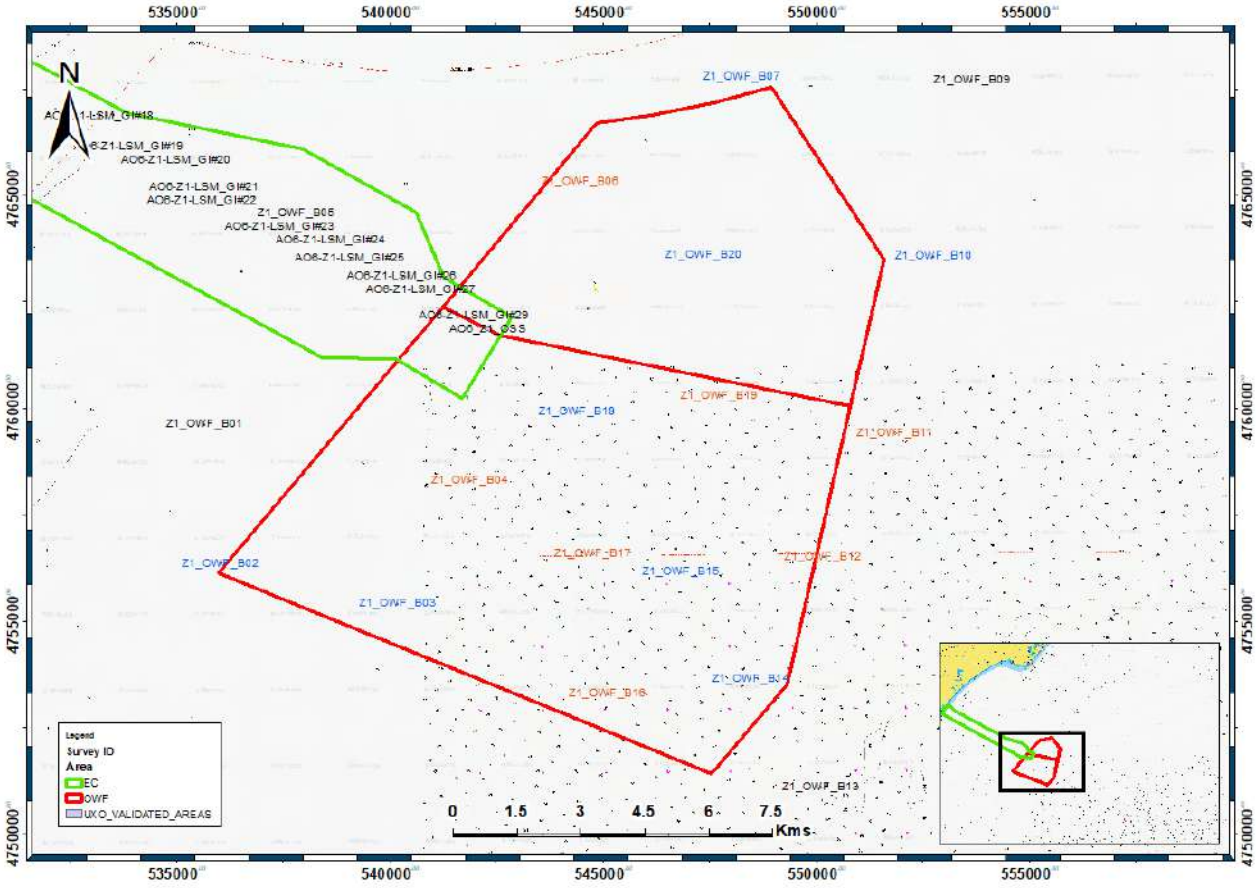


Figure 4-7 UXO box locations within the OWF 1 area are highlighted in orange and blue colour. The blue ones are the ones which finally had a geotechnical location.

The 20 surveyed UXO boxes comprised a total square area of 900 m^2 each, with a run area of 400 meters. Of these, 15 UXO areas are within AO6 Zone 1, and 8 of them coincide with geotechnical locations. ALARP areas of 18.000 m^2 have been found for the 20 Geotechnical locations.

4.5 GEOTECHNICAL DATA

Tecnoambiente (TA) conducted the geotechnical investigation for the AO6 Geotechnical Site Investigation for the offshore windfarm (OWF).

Due to changes in the scope of work, the geotechnical survey finally included a total of 21 locations, being 15 seabed CPT locations alongside 4 PC and 2 VC. Counting all the retests, a total of 21 locations were tested.

For integration and ground truthing, 8 geotechnical locations were considered (Z1_OWF_B02B, Z1_OWF_B03, Z1_OWF_B07B, Z1_OWF_B10, Z1_OWF_B14A, Z1_OWF_B15, Z1_OWF_B18, Z1_OWF_B20) (Figure 4-8):

- CPTs: 5 that fall within the OWF 1 area and 3 in the vicinity.
- PC: 2 that fall within the OWF 1 area.
- VC:1 VC that fall within the OWF 1 area and, 1 in the vicinity.

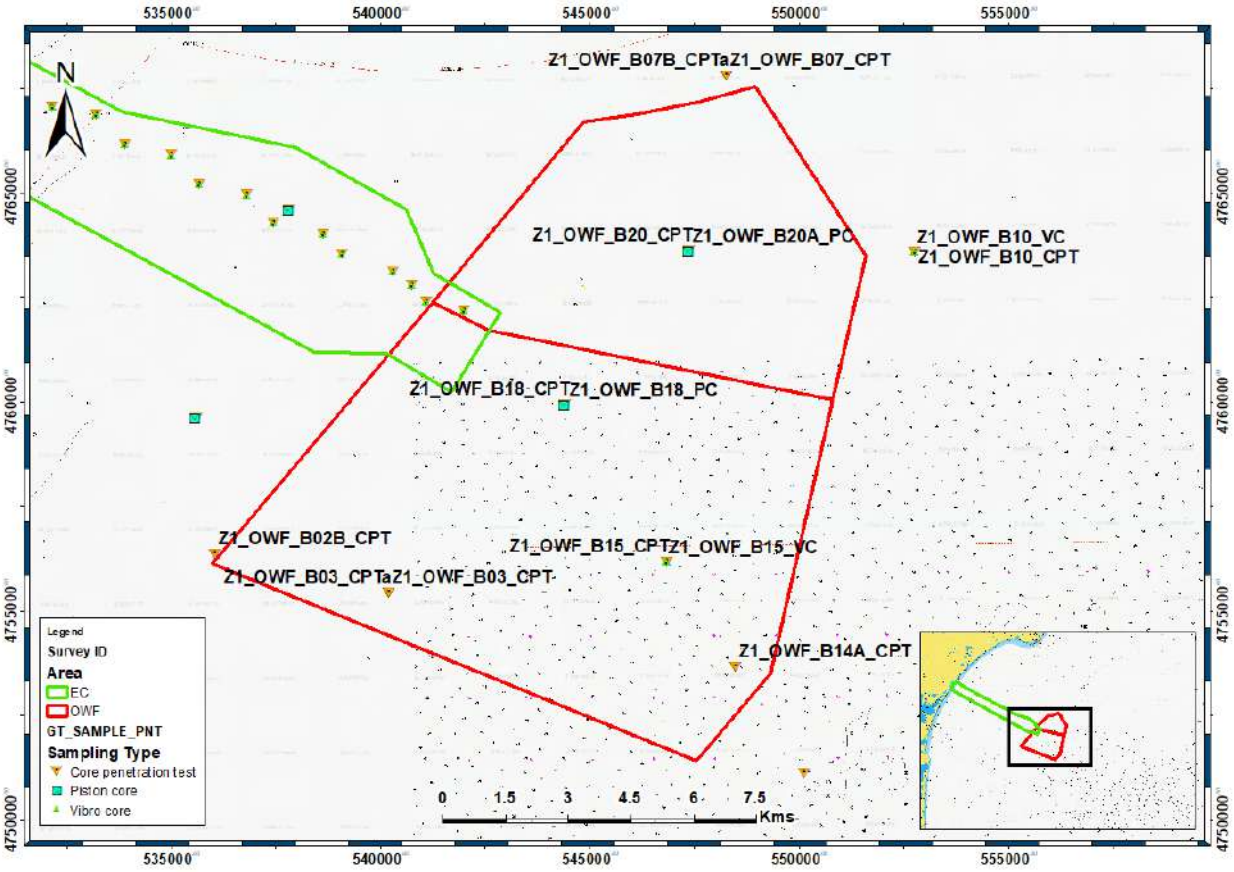


Figure 4-8 Location of the boreholes relative to the OWF 1 offshore substation.

Final geotechnical combined logs for TA survey are presented in APPENDIX IV – BOREHOLE LOGS, digital data are included in APPENDIX V – DIGITAL GEOTECHNICAL DATA.

The tables overleaf show the list of completed locations (Table 8 and Table 9):

Table 8 CPT geotechnical points from OWF 1 geotechnical survey.

Point ID	Type	Actual E (m)	Actual N (m)	Water Depth (ZH) - MBES (m)	Penetration (m)	Notes
Z1_OWF_B01B_CPT	CPT	535595.02	4759617.32	-85.11	26.55	Not in A06 Z1 area
Z1_OWF_B01B_CPTa	CPT	535590.89	4759605.9	-85.01	20.73	Not in A06 Z1 area
Z1_OWF_B02B_CPT	CPT	536024.66	4756343.19	-88.90	28.29	
Z1_OWF_B03_CPT	CPT	540173.2	4755417.32	-93.90	24.24	
Z1_OWF_B03_CPTa	CPT	540185.64	4755420.06	-93.96	19.98	
Z1_OWF_B05_CPT	CPT	537802.22	4764592.9	-82.35	25.71	Not in A06 Z1 area
Z1_OWF_B07_CPT	CPT	548245.88	4767784.63	-89.34	18.26	
Z1_OWF_B07B_CPTa	CPT	548259.43	4767796.5	-89.37	19.48	
Z1_OWF_B08_CPT	CPT	553283.12	4771040.14	-88.86	23.79	Not in A06 Z1 area
Z1_OWF_B10_CPT	CPT	552748.23	4763567.91	-95.47	30.64	
Z1_OWF_B13_CPT	CPT	550109.22	4751107.06	-99.94	30.1	Not in A06 Z1 area
Z1_OWF_B14A_CPT	CPT	548461.56	4753650.04	-96.38	28.93	
Z1_OWF_B15_CPT	CPT	546832.01	4756171.29	-94.30	27.96	
Z1_OWF_B18_CPT	CPT	544394.81	4759927.8	-94.02	30.54	
Z1_OWF_B20_CPT	CPT	547350.77	4763598.43	-93.54	30.87	

Table 9 VC and PC geotechnical points from OWF 1 geotechnical survey.

Point ID	Type	Actual E (m)	Actual N (m)	Water Depth (ZH) - MBES (m)	Penetration (m)	Recovery (m)	Recovery (%)	Notes
Z1_OWF_B01A_PC	PC	535587.67	4759613.72	-85.09	5.4	4.9	91%	Not in A06 Z1 area
Z1_OWF_B05_PC	PC	537809.48	4764591.61	-82.39	7.8	5.95	76%	Not in A06 Z1 area
Z1_OWF_B10_VC	VC	552748.92	4763576.47	-95.45	5.8	7.16	123%	
Z1_OWF_B15_VC	VC	546825.15	4756175.46	-94.29	9	8.28	92%	
Z1_OWF_B18_PC	PC	544394.51	4759917.16	-93.86	3.05	2.12	70%	
Z1_OWF_B20A_PC	PC	547344.34	4763598.69	-93.55	4.7	4.05	86%	

Geotechnical data were evaluated for the following four (4) main soil types were derived and used for integration and ground-truthing purposes.

- Silt
- Sand
- Interbedded sand and clay
- Clay

Further details of the geotechnical methodology can be found in the Factual report - Geotechnical survey - OWF Zones 1 to 4 areas (Ref. 9).

For comparison purposes, boreholes performed within the OSS area were presented in some figures, regional profiles and charts, however, were not used for geotechnical parameters calculations. We refer to the Intermediate Interpretation and Integration report for further information (Ref. 23).

4.5.1 Geotechnical equipment

All boreholes were completed using different techniques and equipment, dividing the methodologies in the 3 main sample types. All this information is collected in Table 10.

Table 10 Drilling Rig Details.

Technique	Equipment
CPT	CPT Manta-200 SW
	Geomil CPT Cone
	CPT Ballast Plate
PC	Carma Piston corer
VC	Vibrocorer Geocorer 3000+6000 engine
WINCH	DEGRA Winch DWH34
	Vime Winch JAL2100

4.5.2 Geotechnical laboratory testing

The summary of completed laboratory tests to date for all the PC and VC locations of the broader area of OWF 1 is presented in the following tables.

Table 11 Overview of offshore laboratory testing complete for OWF 1 samples.

Type	Test	Zone 1
Chemical	SRB	8
Undrained Shear Strength	Hand Torvane	14
	Pocket Penetrometer	8
Thermal Resistivity	TRT	26

Index tests, such as PP and TV, are used for an indicative assessment of soil strength, whereas the other onshore strength tests have been used for parameter evaluations.

Table 12 Overview of onshore laboratory testing with standards used for OWF 1 samples.

Type	Test	N° of Results Z1	Lab. standard
Classification	EN-ISO soil description with PP and TV in cohesive material plus photograph	2xPC 2xVC	EN-ISO
	Water content	36	ISO 17892-1:2014
	Particle density	3	ISO 17892-2:2014 - Method 5.1
	Min. & Max. Density	2	ASTM D4254-16 - Method A
	Submerged Unit weight	36	ISO 17892-2:2014 - Method 5.1
	Atterberg limits	5	ISO 17892-12:2018
	PSD wet sieve (sedimentation if fines are more than 15%)	18	ISO 17892-4:2016
	Sedimentation	12	ISO 17892-4:2016
Strength	Lab Vane + remoulded	6+6	ASTM D4648/D4648M-16
	Fall cone + remoulded	6+6	ISO 17892-6:2017
	Pocket Penetrometer	10	ISO19901-8:2014
	Torvane test	10	ASTM D8121/D8121M - 19

Type	Test	N° of Results Z1	Lab. standard
	UU (Undrained Triaxial)	3	ISO 17892-8:2018
	UUr (Undrained Triaxial Remoulded)	2	ISO 17892-8:2018
	CIUc (Isotropically Consolidated Undrained Triaxial Compression (Ciu))	1	ISO 17892-9:2018
	DS (Direct Shear at (20, 40 and 80 kPa)	4	ISO 17892-10:2018
	CIDc (Isotropically Consolidated Drained Triaxial Compression)	1	ISO 17892-9:2018
	DSS (Direct Simple Shear)	3	ASTM D6528-17
	THIXO (Thixotropy)	3	ISO 19901-8:2014 - ISO 17892-6:2017
	Oedometer CRS	2	ASTM D4186 / D4186M-20
Chemical and thermal	$CaCO_3$	3	ISO 10693-14
	ORG	2	ASTM D2974-20 - Method C
	Thermal Conductivity	4	ASTM D 5334-22

5 OWF FOUNDATION LAYOUT AND CONCEPT

At the time of writing, locations and anchor types for the planned AO6 OWF Zone 1 wind turbines have not yet been defined. This report presents a generalised assessment of the ground conditions and geotechnical parameters, limited to the borehole locations and depths.

Ground conditions and geotechnical unit distribution based on ground-truthed reflectors can be extrapolated to a 500 m radius and beyond in line with APPENDIX II – UHRS REGIONAL PROFILES. However, geotechnical parameters derived from CPT data and offshore/onshore lab testing, may only be valid for approximately a 100 m radius from the geotechnical locations.

6 GEOLOGICAL FRAMEWORK

The geological map of the area (Figure 6-1) extracted from the Report Ref. 21 provides a general overview of the geology of the Gulf du Lion.

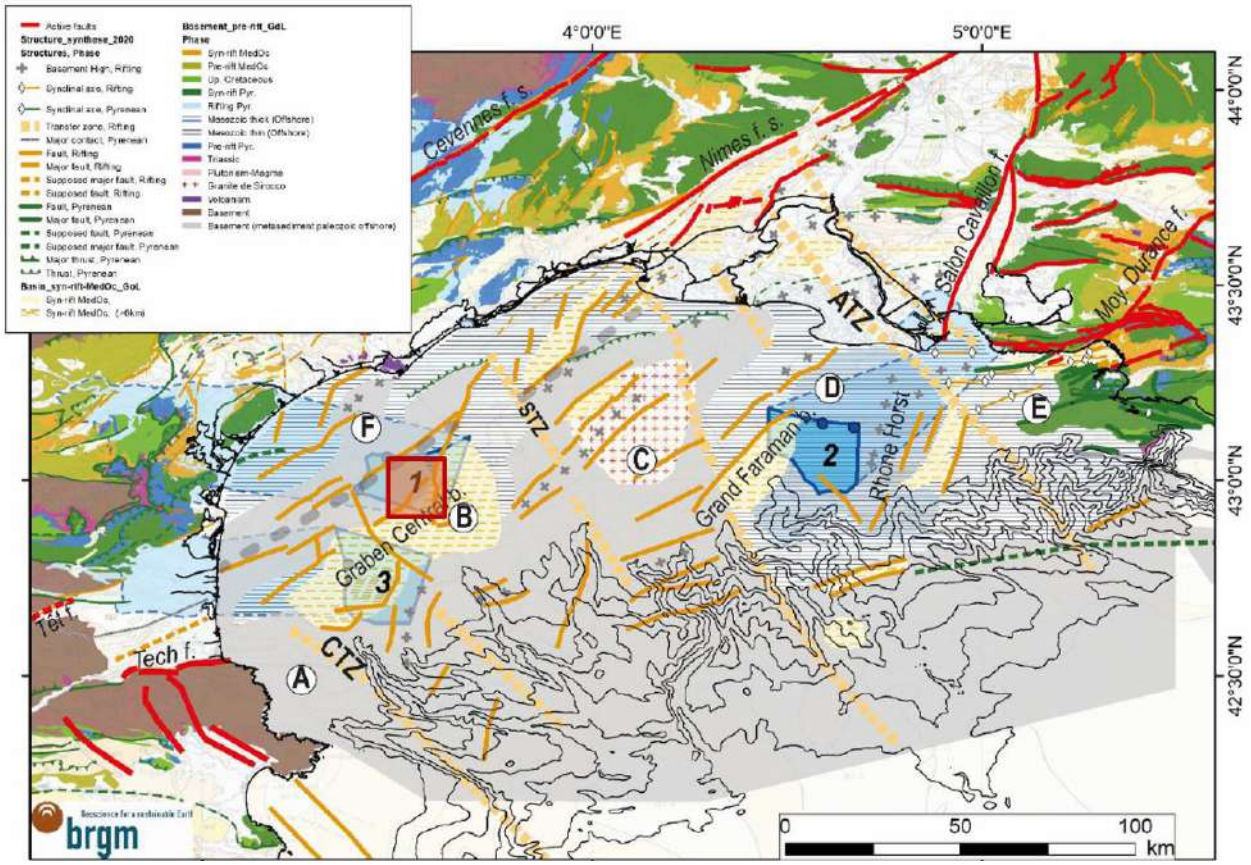


Figure 6-1 Geological map of the Gulf of Lion shelf (Report Ref. 21). The AO6 OWF 1 is located within the red rectangle.

The Gulf of Lions is in the northwestern sector of the Mediterranean Sea bounded by the Pyrenees and the Alps. It comprises a wide shelf and continental slope, before descending to the abyssal area of the Algero-Balearic Basin. The basin formed as a result of tectonic rifting during the Oligocene – Miocene period (Gorini, et al. 1994, Bib. Ref [12], leading to the accumulation of a large amount of clastic sediments forming a thick wedge on the inner shelf, and more than 2 km on the outer shelf (Lofi, 2002, Bib. Ref [23] . The continental shelf edge leads to the prograding margin observed in the Gulf of Lions during the end of the last glacial cycle. The geology within the Golf of Lion is described as a relatively low energy passive prograding margin, dominated by

a rapid period of sedimentation during the Late Pleistocene, with layers of reworked sediments at a time when sea-levels were about 100 m lower. At the end of the Last Glacial Maximum, sea levels were cyclically higher and lower as ice masses in the two hemispheres contracted and advanced. The deglacial succession overlies the major erosional discontinuity related to sea level rises since the Last Glacial Maximum. It consists of basal transgressive deposits, subsequently reworked into dunes and sand ridges, interbedded with regressive prograding, marine derived sediments. The shelf 'relict' sands, pass rapidly into marine muds. The transition between sand and mud is outlined by a distinct regional step in seafloor morphology. The geology within the depth of interest is comprised of a thick sedimentary package of Holocene and Plio-Quaternary sedimentary deposits. They overlie older rocks (Miocene), that are not detected in the study area. (Figure 6-1).

The geological stratigraphic sequence and the lithological descriptions provided below are derived from the integration and ground truthing with the geotechnical data set obtained within the AO6 OWF 1 area, of the SHOM SBP, TA UHRS and SBP data sets (Ref. 17 and Ref. 10, respectively) and the regional geological literature. All depths are indicative and quoted in meters below the seabed (m BSB).

As mentioned in the data source limitations in the section 4.1, SBP data is of generally good quality. However, the NE-SW orientation of SBP SEGY track-lines which is roughly parallel to the main geological trend and the lack of cross lines perpendicular to them, creates difficulties in geological interpretation. This data is still usable for integration and geological/geotechnical mapping.

For integration and ground truthing, 8 geotechnical locations were considered (Z1_OWF_B02B, Z1_OWF_B03, Z1_OWF_B07B, Z1_OWF_B10, Z1_OWF_B14A, Z1_OWF_B15, Z1_OWF_B18, Z1_OWF_B20) (Figure 6-2):

- CPTs: 5 that fall within the OWF polygon (Z1_OWF_B03, Z1_OWF_B14A, Z1_OWF_B15, Z1_OWF_B18, Z1_OWF_B20) and 3 in the vicinity (Z1_OWF_B02B, Z1_OWF_B07B and Z1_OWF_B10)
- PC: 2 that fall within the OWF polygon (Z1_OWF_B18, Z1_OWF_B20).
- VC:1 VC that falls within the OWF 1 (Z1_OWF_B15), and 1 in the vicinity (Z1_OWF_B10).

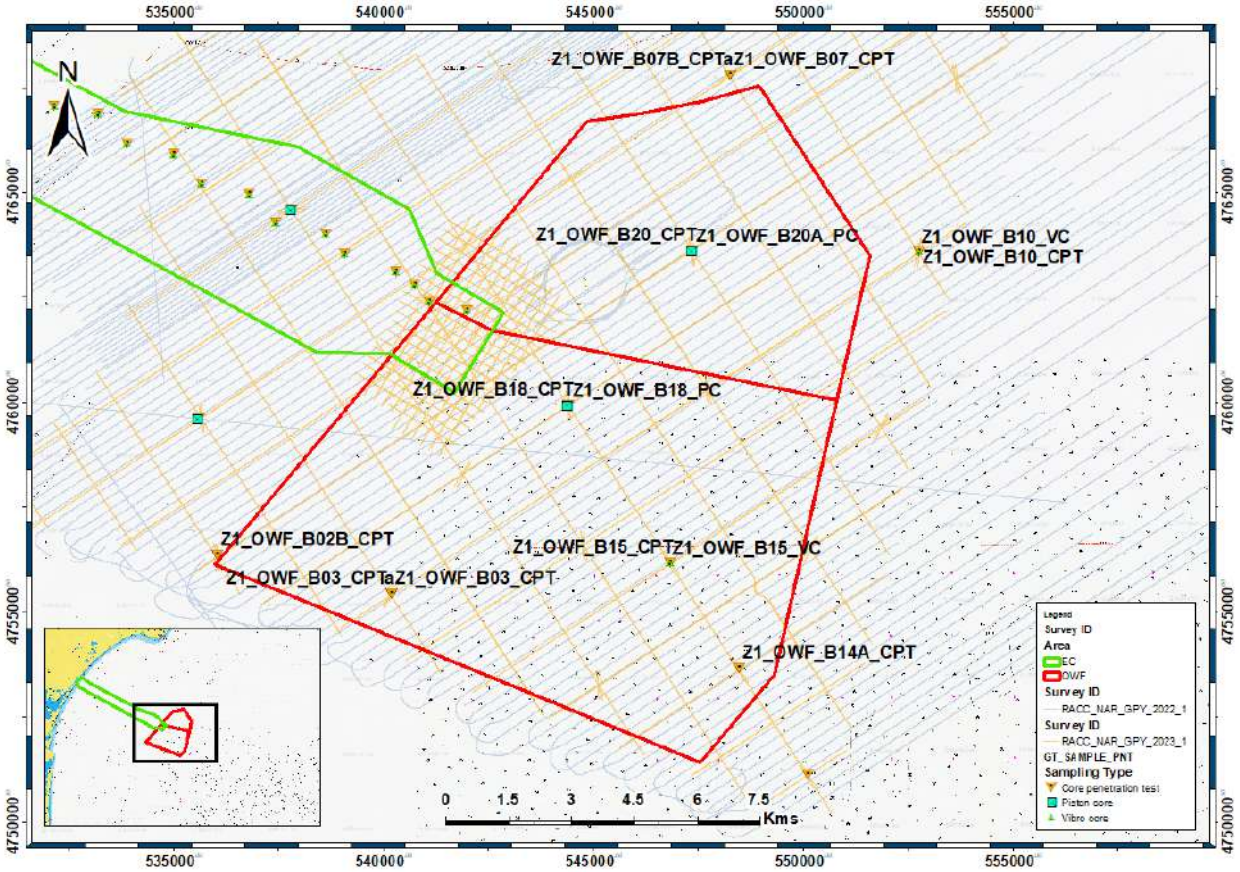


Figure 6-2 Location of the geotechnical investigated sites within the OWF 1 area. SBP track-lines are shown in light blue colored lines.

6.1 SBP AND UHRS GROUND TRUTHING

After TA assessment of results provided from SHOM of their SBP data (raw interpretation and sediment thickness map with thickness ranges) was concluded this data was not usable, because these results are for the acoustic basement (maximum profiler signal penetration), a surface not relevant for the geology of the study area. Therefore, SHOM SBP SEGYs were integrated with the previous TA SBP and UHRS datasets and results. SHOM SBP had good penetration due to a thick sediment package, reaching a maximum seismic depth of approximately 30 m below sea-bed (BSB), and relatively good quality, allowing to ground truth and refine the previous SBP and UHRS interpretation results.

This process was conducted based on geotechnical information identifying Regional geotechnical units, redefining, were needed, previous sequence stratigraphy and unit boundaries which marked pronounced unconformable events by bounding changes in the seismic facies. The regional geotechnical units here (named RGT Unit 1, RGT Unit 2 etc.) are equivalent to the seismo-stratigraphic units (Unit 1, Unit 2 etc.) defined in previous phases of reporting (Report Ref. 10). The new dataset together with the geotechnical information allowed to define H08 horizon (Top of RGTU 4) separating RGT Units 3 and 4, which previously was not possible. New horizons related to Regional geotechnical units have been created following previous results and new dataset, the new integrated interpretation, can be related with the previous results as shown in Table 13, and following text.

Table 13 Correlation between shallow seismo-stratigraphic units of the OWF 1 survey area and new Regional Geotechnical Units.

SS. U.: Seismo-stratigraphic Unit; U.S: Upper Surface; L.S: Lower Surface. RGT.U.: Regional Geotechnical Unit.

SS.U.	U.S.	L.S.	Depositional Environment & Seismic character (UHRS)		RGT.U.	U.S.	L.S.	Geotechnical Description
1	Seabed	H05	Shallow marine	Acoustically semi-transparent to high amplitude chaotic reflectors to, low to moderate amplitude sub-parallel reflectors. Base reflector is continuous, medium to high amplitude.	RGT Unit 1	Seabed	Base RGT Unit 1	Extremely low shear strength silty slightly sandy CLAY/SILT
2	H05	H06	Estuarine/lacustrine & terrestrially reworked	Discontinuous reflectors. Acoustically of higher amplitude than the surrounding units. Multiple events of depositional reworking and erosion. Exposed above sea level. Evidence of unconformities, channelling, contourites. Top of the unit characterized by a strong reflector (normal phase); the base is usually marked by a reverse phase reflector.	RGT Unit 2	Base RGT Unit 1	Top RGT Unit 3	Very low to medium shear strength sandy CLAY becoming medium dense SILT/SAND
3/4	H06	H08	Marine deposits during rapid sea level rise	Acoustically quiet unit with no, or very few, structures within it. Subparallel reflectors.	RGT Unit 3	Top RGT Unit 3	Top RGT Unit 4	Very low to very high shear strength CLAY/SILT with occasional loose to medium dense SAND

SS.U.	U.S.	L.S.	Depositional Environment & Seismic character (UHRS)		RGT. U.	U.S.	L.S.	Geotechnical Description
3/4	H08	H10	Estuarine/lacustrine & terrestrially reworked	Discontinuous reflectors, a package of sediment marking multiple events of depositional reworking and erosion. Exposed above sea level. Acoustically of higher amplitude than Unit 3 above. Evidence of unconformities, channelling, contourites within. Top of the unit characterized by a strong reflector (normal phase); the base is usually marked by a reverse phase reflector.	RGT Unit 4	Top RGT Unit 4	Top RGT Unit 5	Medium dense to very dense silty SAND interbedded with high shear strength sandy CLAY
5	H10	H20	Marine deposited during rapid sea level	Acoustically quiet unit with no, or very few, structures within it. Interpreted as marine clays rapidly deposited during a period of rapid sea level rise and higher sea levels during warmer periods at the end of the last glacial maximum.	RGT Unit 5	Top RGT Unit 5	Top RGT Unit 6	Medium to very high shear strength sandy CLAY with occasional very loose sand partings
6	H20	H30	Estuarine/lacustrine & terrestrially reworked	Discontinuous reflectors, a package of sediment marking multiple events of depositional reworking and erosion. Exposed above sea level. Acoustically of higher amplitude than the surrounding units. Evidence of unconformities, channelling, contourites within. Top of the unit characterized by a strong reflector (normal phase); the base is usually marked by a reverse phase reflector.	RGT Unit 6	Top RGT Unit 6	Top RGT Unit 7	High shear strength silty CLAY interbedded with very loose to very dense silty SAND
7	H30	H50 - -	Marine deposits during rapid sea level	Acoustically quiet unit with no, or very few, structures within it. Interpreted as marine clays rapidly deposited during a period of rapid sea level rise and higher sea levels during warmer periods at the end of the last glacial maximum.	RGT Unit 7	Top RGT Unit 7	H50 - -	High shear strength slightly sandy CLAY
8	H50	H55- -	Estuarine/lacustrine & terrestrially reworked	Discontinuous reflectors, a package of sediment marking multiple events of depositional reworking and erosion. Exposed above sea level. Acoustically of higher amplitude than the surrounding units. Evidence of unconformities, channelling, contourites within. Strong normal phase reflector at the top of the unit, the base is usually marked by a reverse phase reflector.	Unit 8	H50	H55 - -	Dense silty SAND

The data from the geotechnical locations were used to ground truth the SBP and UHRS seismic datasets, shown in Figure 6-3. Based on the correlation with the geotechnical data, an Assumed Sound Velocity (ASV) of 1600 m/s was proven to be accurate for the time-depth conversion of

the SBP and UHRS interpretation. There is good correspondence between the geotechnical data, interpretations and the various sub-seabed geophysical data. Some of the increases in shear strength did not correlate with reflectors that could be extrapolated across the survey area, in these cases sediment descriptions for geophysical units have been grouped to incorporate the range of encountered geotechnical conditions. The shallow sequence is split into seven Regional geotechnical units and horizons have been picked/created at the top and base of each unit. Apart from RGT Unit 2 and unit 8, the units are present throughout the survey area.

RGT Unit 1 (RGTU 1) is present across the OWF 1 area with thicknesses ranging from 0.1 to ~4 m. H05 horizon has good correspondence with geotechnical data and SHOM SBP data and was picked as the base of the RGTU 1. Geotechnical data show the unit is consistently extremely low shear strength silty slightly sandy CLAY/SILT.

RGT Unit 2 presence is discontinuous across de OWF 1 area, with depth BSB ranging from 0.4 to ~6 m. H06, the discontinuous base of RGT Unit 2, was mapped with TA SBP data. Geotechnical data within the unit is described as very low to medium shear strength sandy CLAY becoming medium dense SILT/SAND.

RGT Unit 3, the geotechnical data and the new dataset allowed to resolve the previously picked discontinuous horizon, H08, that allows to distinguish between RGTU 3 and 4. **RGTU 3** extends across the entire OWF 1 area with depth BSB ranging from ~0 to ~4 m. RGT Unit 3 is described as very low to very high shear strength CLAY/SILT with occasional loose to medium dense SAND.

RGT Unit 4 extends across the entire OWF 1 area with depth BSB ranging from ~0.5 to ~11 m. RGTU 4 base is formed by H10, well resolved in the UHRS data, and is described as medium dense to very dense silty SAND interbedded with high shear strength sandy CLAY.

RGT Unit 5 extends across the entire OWF 1 area with depth BSB ranging from ~1.8 to ~32 m, with a depocenter towards the south-east of the OWF 1 area. RGTU 5 base is mapped by H20, well resolved with UHRS data and is consistently represented in geotechnical logs as medium to very high shear strength sandy CLAY with occasional very loose sand partings.

RGT Unit 6 extends across the entire OWF 1 area with depth BSB ranging from ~11 to ~35 m, with a roughly depocenter towards the south-east of the OWF 1 area. RGTU 6 is base bounded by H30, well resolved in the UHRS data, is sampled by three logs within the survey area and is described as high shear strength silty CLAY inter-bedded with very loose to very dense silty SAND.

RGT Unit 7 extends across the entire OWF 1 area with depth BSB ranging from ~14 to ~48 m, with a depocenter towards the south-east of the OWF 1 area. RGTU 7 is base bounded by H50, well resolved in the UHRS data, is only sampled once within the survey area and is described as high shear strength slightly sandy CLAY

Seismo-stratigraphic Unit 8 is discontinuous in the area with presence in the west and east of the study area (Report Ref. 10). It is just crossed by the end of CPT B01B where is described as dense silty SAND.

This seismic unit correlation with the geotechnical data is presented in Figure 6-3 and in APPENDIX I – NORTH-UP CHARTS, APPENDIX II – UHRS REGIONAL PROFILES and APPENDIX III – INTEGRATED CHARTS.

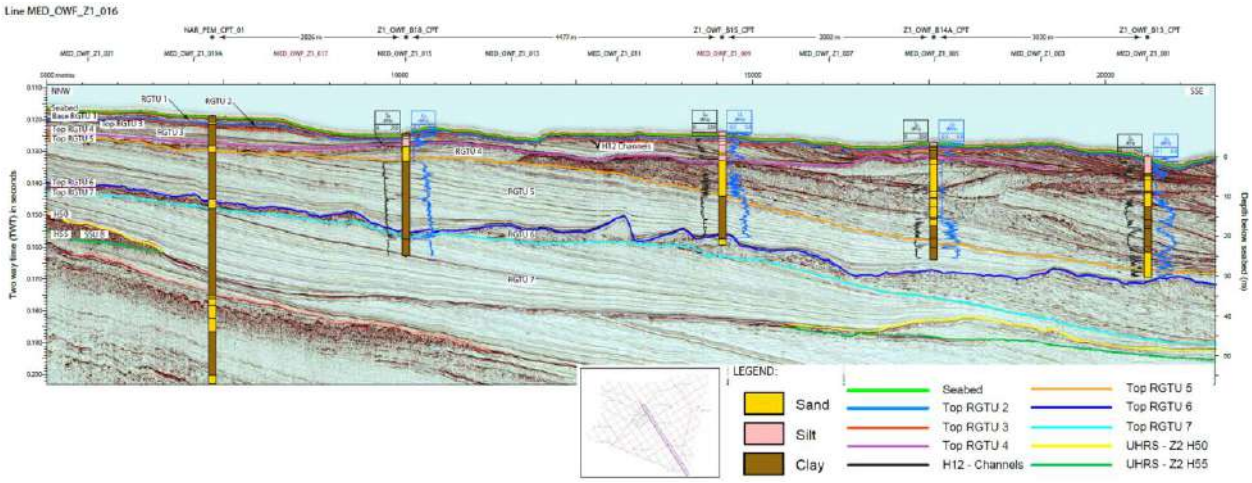


Figure 6-3 Stratigraphic unit overview within the survey area.

6.2 UHRS REGIONAL PROFILES

Six UHRS seismic profiles, integrated with the geotechnical data, have been selected for representing the regional geology and stratigraphic units of the AO6 OWF 1 area (Figure 6-4). UHRS regional profiles can be found at APPENDIX II – UHRS REGIONAL PROFILES.

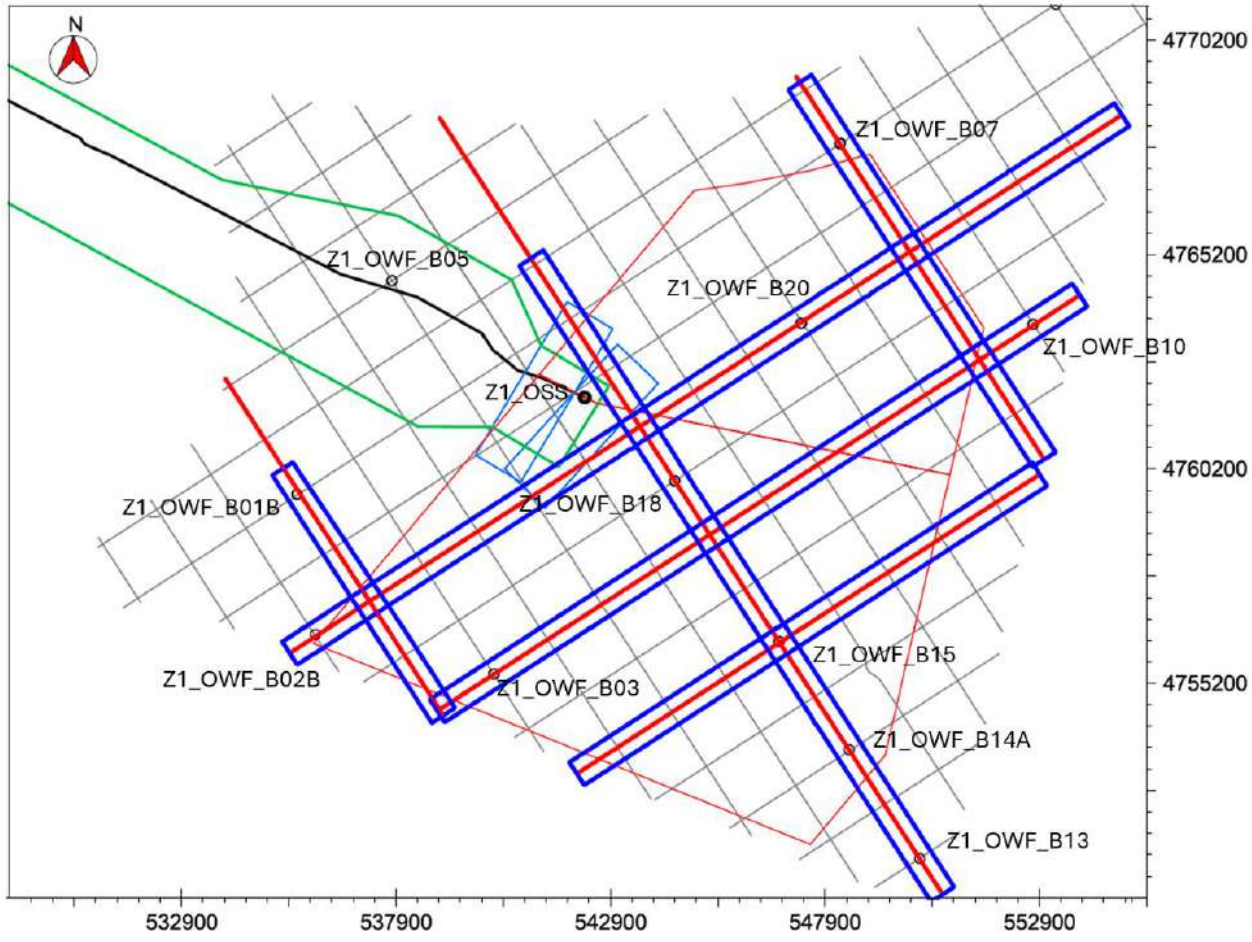


Figure 6-4 UHRS lines selected for depicting the seismic regional profiles.

7 SEABED CONDITIONS

This section provides a summary of the main seabed features, geohazards and seabed constraints identified within the AO6 OWF Zone 1 area.

APPENDIX I – NORTH-UP CHARTS includes eleven (11) north-up charts presenting: MBES bathymetric model, MBES slope model, SSS and MBES backscattered mosaics, SSS seabed classification and features, including UXO surveyed area contacts, and seven new ground truthed SBP-UHRS surfaces (Base of RGT Unit 1, Top of RGT Unit 2, 3, 4, 5, 6 and 7).

BATHYMETRY

All descriptions are based on SHOM bathymetry, which is the only data source that covers the whole OWF 1 area. The bathymetry of the OWF 1 area is presented in the north-up chart 1 in APPENDIX I – NORTH-UP CHARTS with 1 x 1 m and 0.5 x 0.5 m pixel resolution and in Figure 7-1. Bathymetric details are summarized in Table 14. In Figure 7-2 and Figure 7-3 there is a set of two profiles of the bathymetry and the slope that provide a general characterization of the OWF 1 area.

Bathymetry within the OWF 1 area has a general trend of increasing depth towards the SE (Figure 7-1). However, this trend is occasionally interrupted by sudden rises and drops associated with escarpments and shallow depressional areas, as detailed in section 7.2. Moving from west to east, two types of textures can be observed: the western part is characterized by round elevations, referred to as seabed mounds (section 7.2.2), while escarpments become more prominent towards the eastern area.

Table 14 Summary of bathymetry within the OWF 1 area.

Attribute along OWF 1 area	Value	Location
Minimum water depth	-85.97 m ZH	NW region of the OWF 1 area.
Maximum water depth	-99.13 m ZH	SE region of the OWF 1 area.
Average (natural) seabed gradient	0.49°	-
Maximum gradient	31.63°	In the escarpment areas

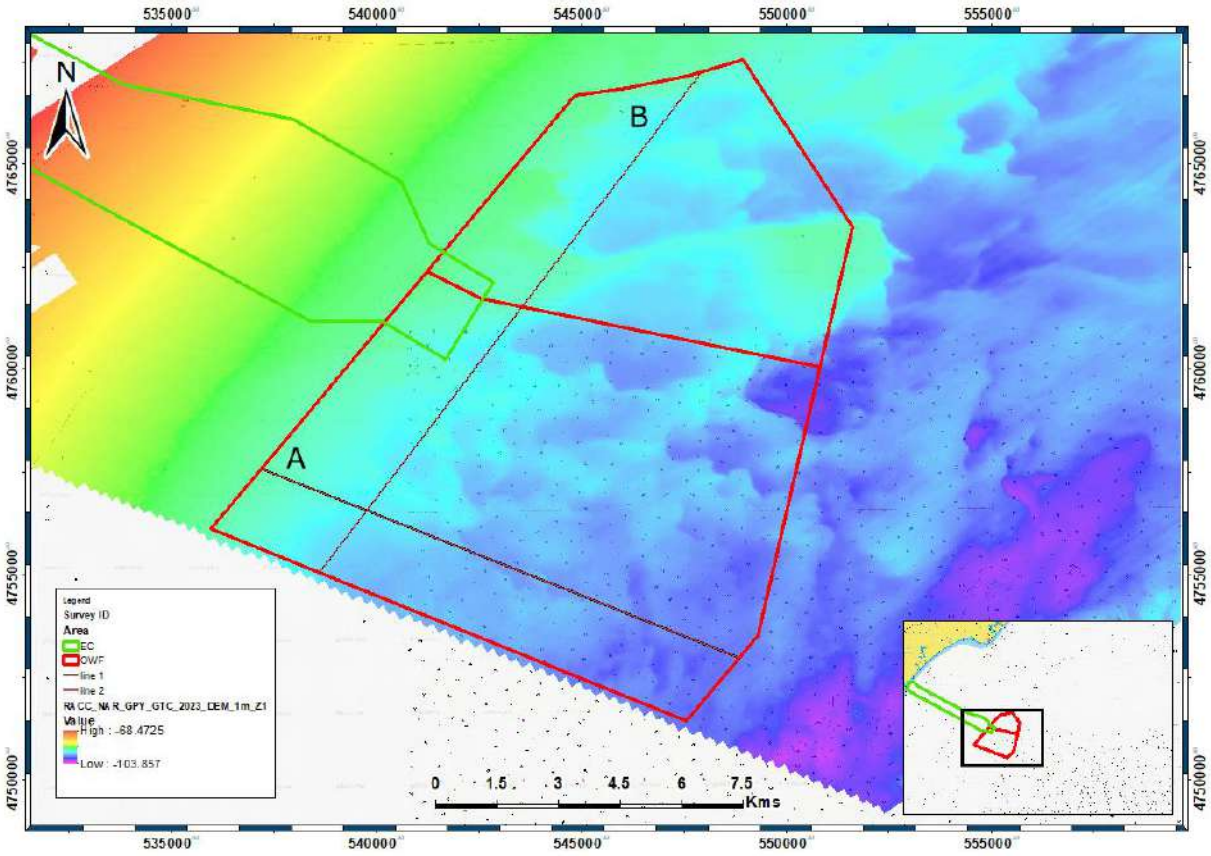


Figure 7-1 Localization map of the profiles with the bathymetric map represented.

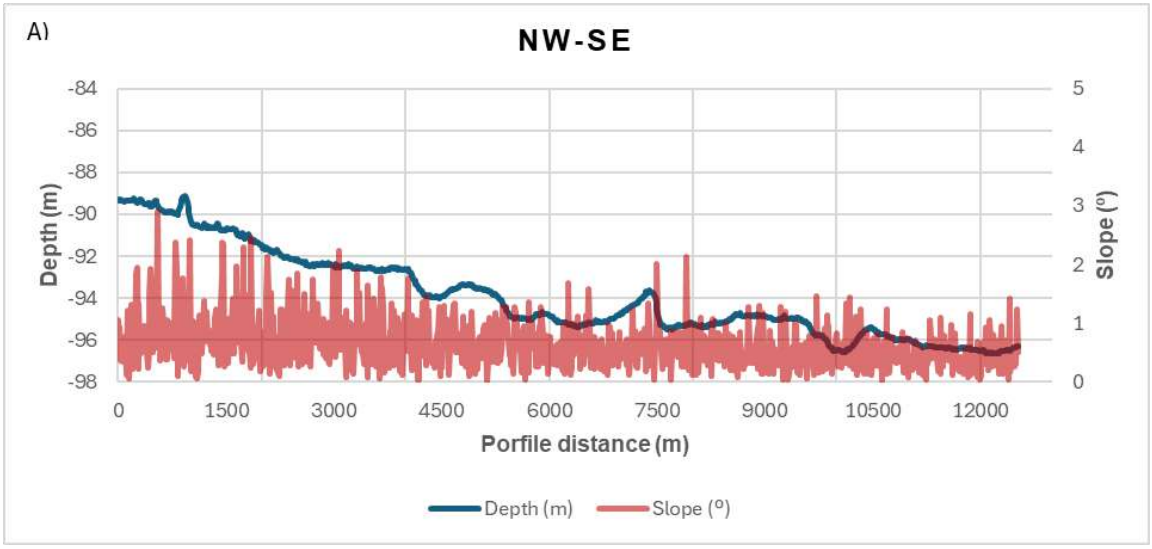


Figure 7-2 Profiles a) with the bathymetry as the blue line and the slope as the red one. The location of this profile can be found in Figure 7-1.

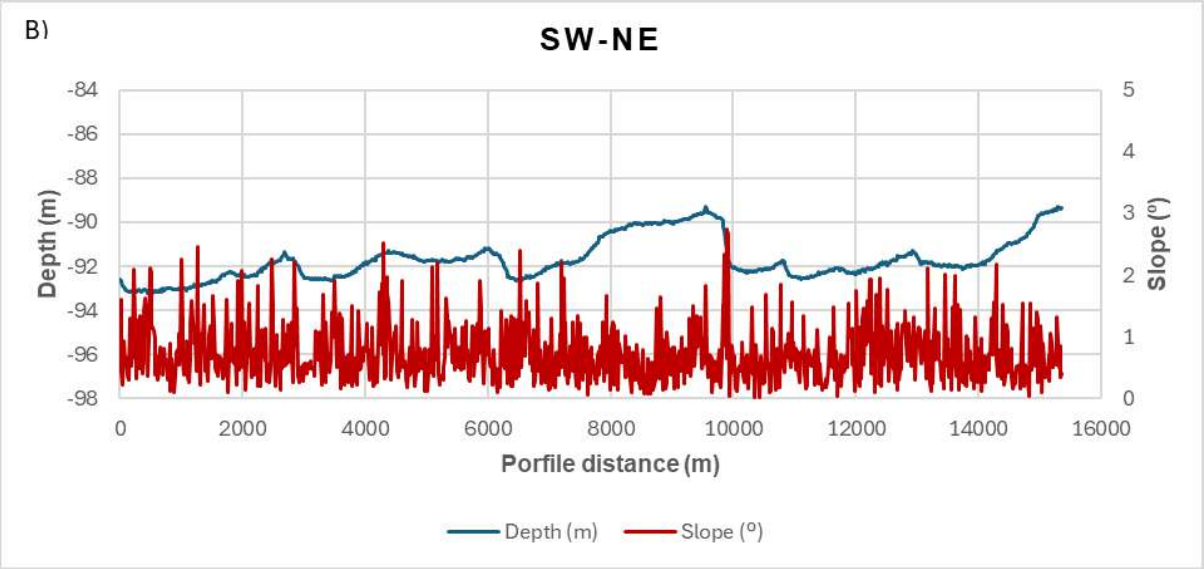


Figure 7-3 Profiles b) with the bathymetry as the blue line and the slope as the red one. The location of this profile can be found in Figure 7-1.

7.1 AREAS OF STEEP GRADIENT

The slope along the AO6 OWF Zone 1 area is presented in the north-up charts in APPENDIX I – NORTH-UP CHARTS. All descriptions are based on the SHOM bathymetry (1x1 m pixel resolution), which is the only data source that covers the whole study area. For the calculation of the statistics, data were cut to fit the OWF 1 study area polygon.

Seabed slope on the OWF 1 area has an average value of 0.49º, with a maximum value of 31.63º. Moderate slopes are associated with the escarpments observed within the study area.
Table 15 provides the colour and gradient classification for the slope and
Figure 7-4 shows a general distribution of the slope at OWF 1 area.

Table 15 Seabed gradient classification along AO6 offshore substation.

Slope classification	Gradient (º)	Colour
Very gentle	<1º	
Gentle	1º - 5º	
Moderate	5º – 10º	
Steep	10º - 15º	
Very steep	>15º	

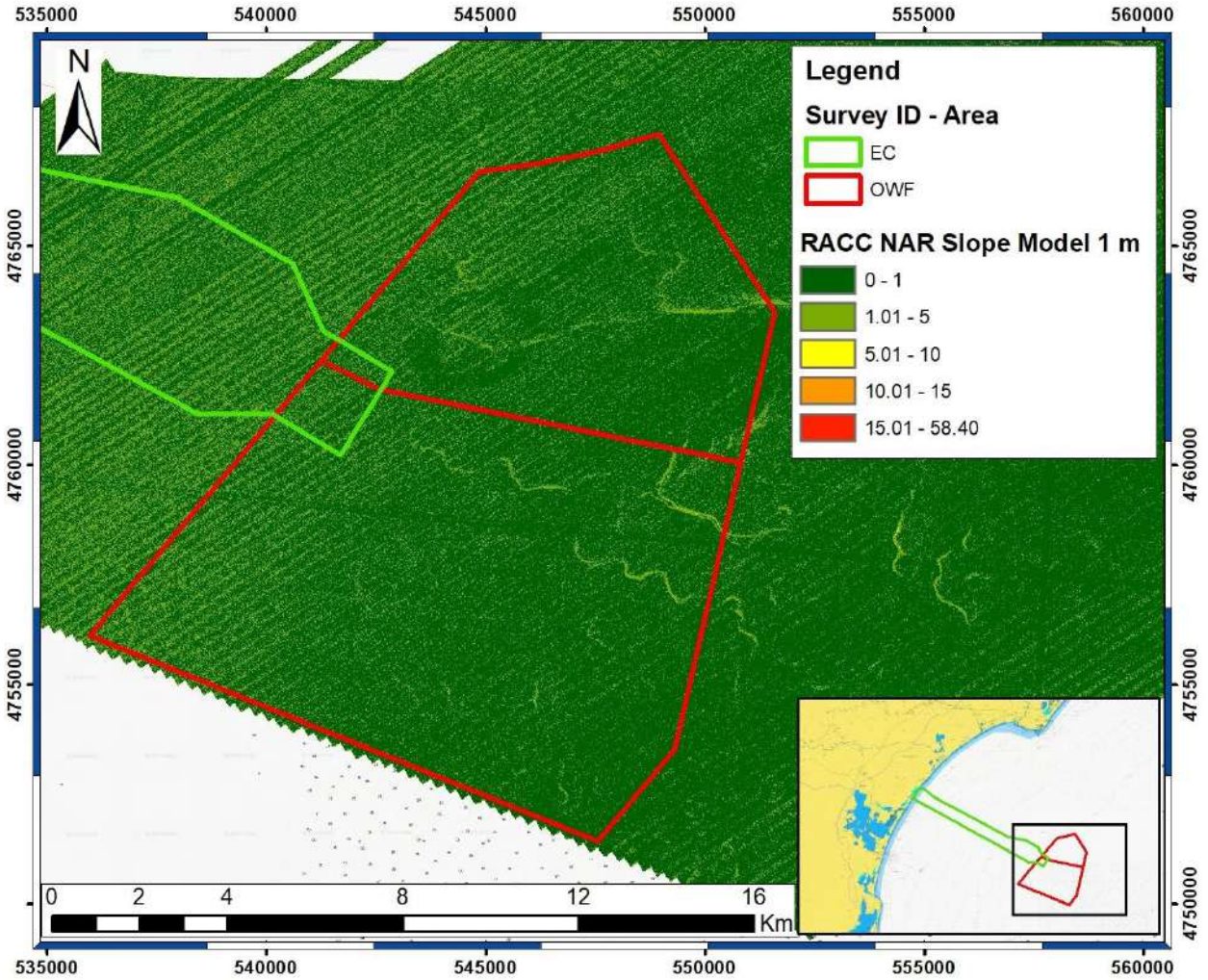


Figure 7-4 Slope map from **OWF 1** area. Slope raster calculated from the SHOM bathymetry. Note that the linear moderate slopes orientated SW to NE are processing line artefacts.

7.2 BEDFORMS

Sediment classification and sediment features along the AO6 OWF Zone 1 area are presented in APPENDIX I – NORTH-UP CHARTS.

The identification and characterization of seafloor bedforms along the OWF 1 area was conducted using available marine geophysical survey data, primarily bathymetry from multi-beam echo sounder (MBES) and side-scan sonar (SSS) where available (SHOM SSS mosaic coverage is presented in Figure 7-5). MBES backscatter was also available however it is difficult to identify the different seabed features and changes of sediment from this data, possibly due to the acquisition parameters (Figure 7-6).

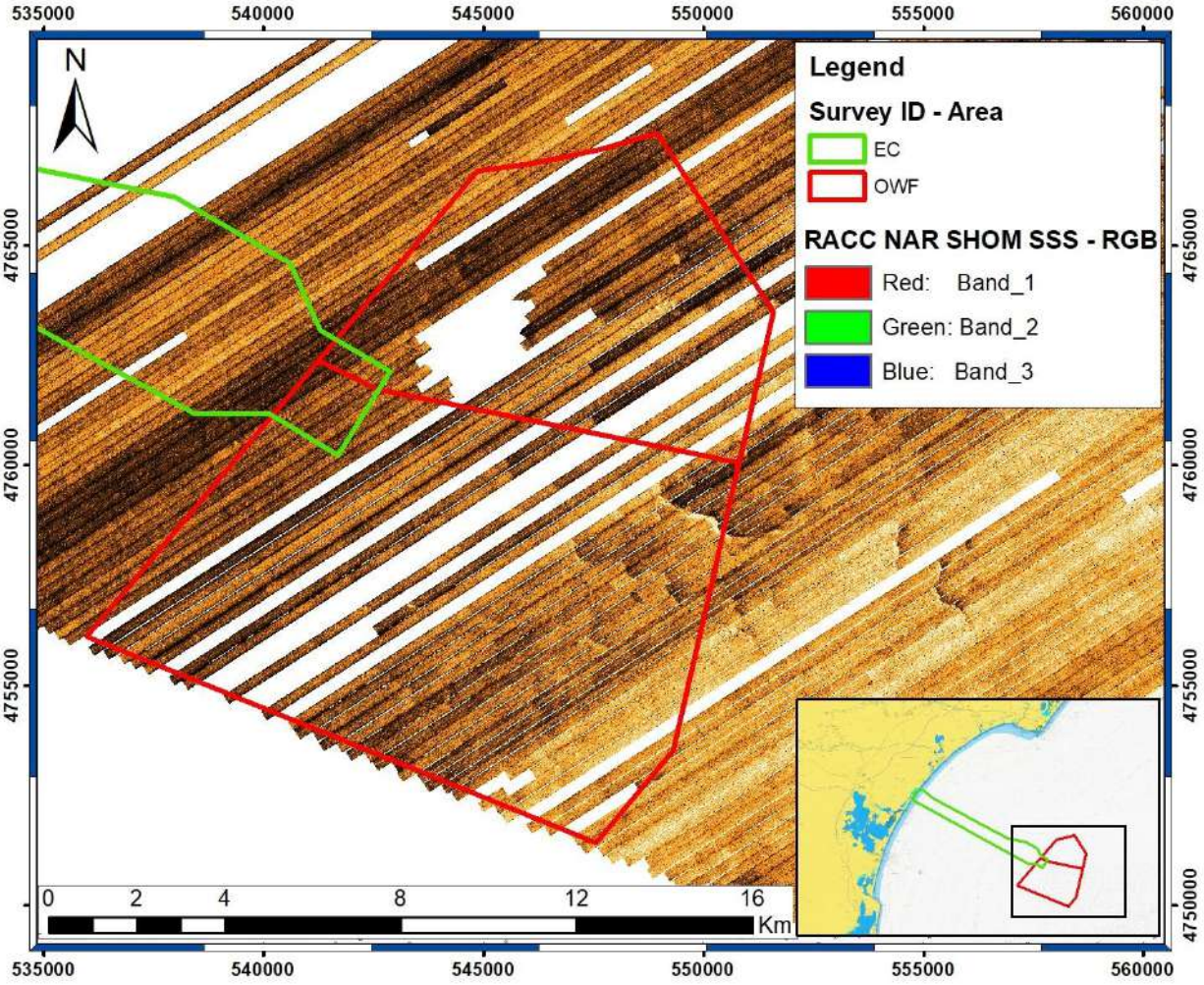


Figure 7-5 SSS SHOM datasets for OWF 1 area (UTM 31N, WGS84).

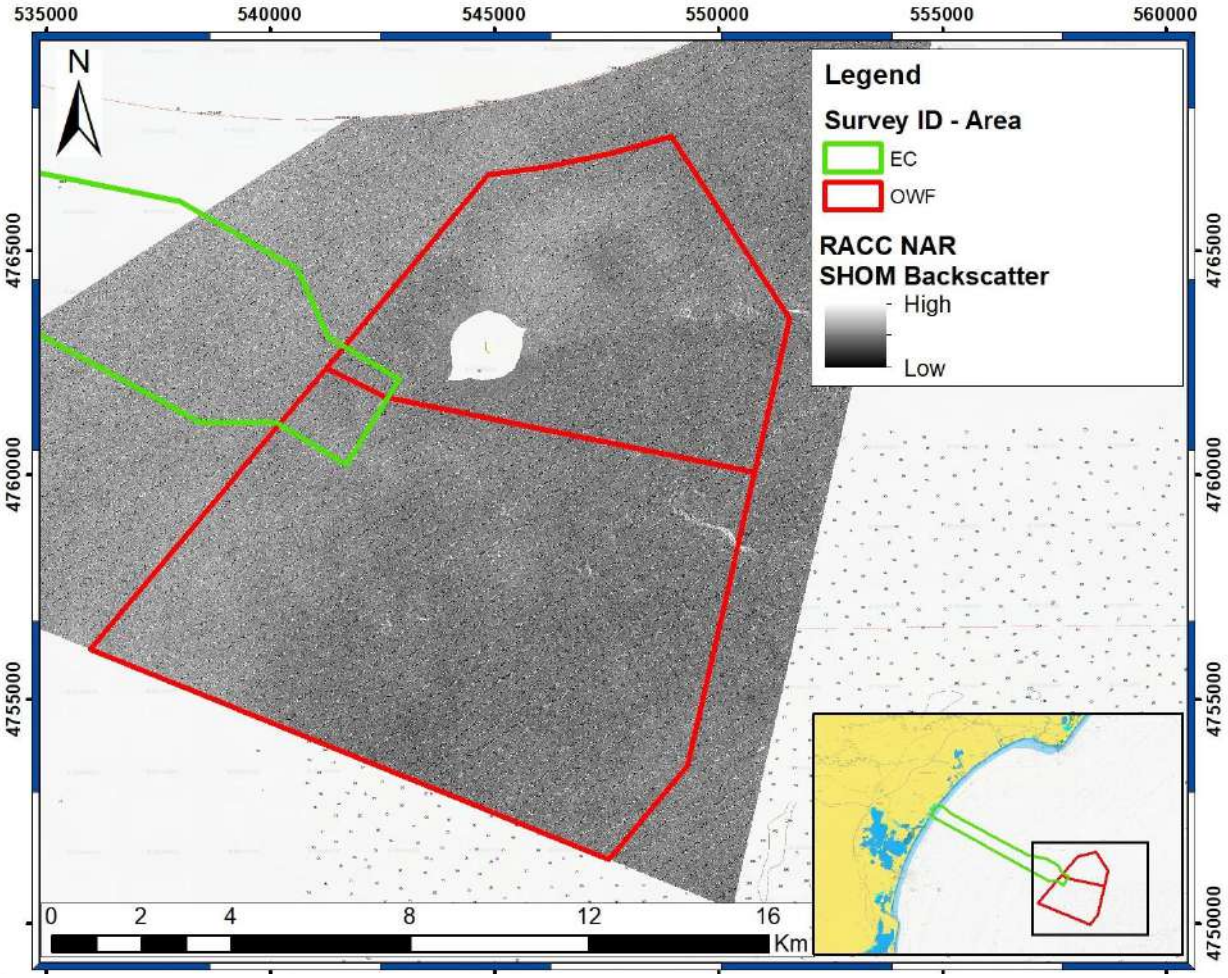


Figure 7-6 SHOM Backscatter for OWF 1 area (UTM 31N, WGS84).

7.2.1 Areas of scour and escarpments

Numerous escarpments have been interpreted within the AO6 OWF Zone 1. These are up to 4.6 m in height and approximately 7 km in length with various orientations. The origin of these escarpments is uncertain; however, it is proposed that they are formed by mobile sediment that is episodically reworked by currents created by wind stress (Bassetti, 2006. Bib. Ref. [5]). Geotechnical sampling of these features is sparse, however, Grab sample 28 is located on the edge of one of the escarpments and demonstrates the presence of gravelly sand. The majority of the other geotechnical samples not located on the escarpments are predominantly mud or occasionally sandy silt.

In addition to these escarpments ‘areas of scour’ have been interpreted. These are shallow depressional areas proximal to the escarpments. Again, geotechnical sampling is sparse, although one grab sample outside the study area is described as fine sand, the SSS mosaics do not show a clear change of material from mud to fine sand, and the dominant in the area mud is chosen for these areas of scour. The escarpment and scour interpretation are presented in Figure 7-7.

Due to the presence of a fairly homogenous shallow marine drape, it is likely that any wind driven current reworking is historic.

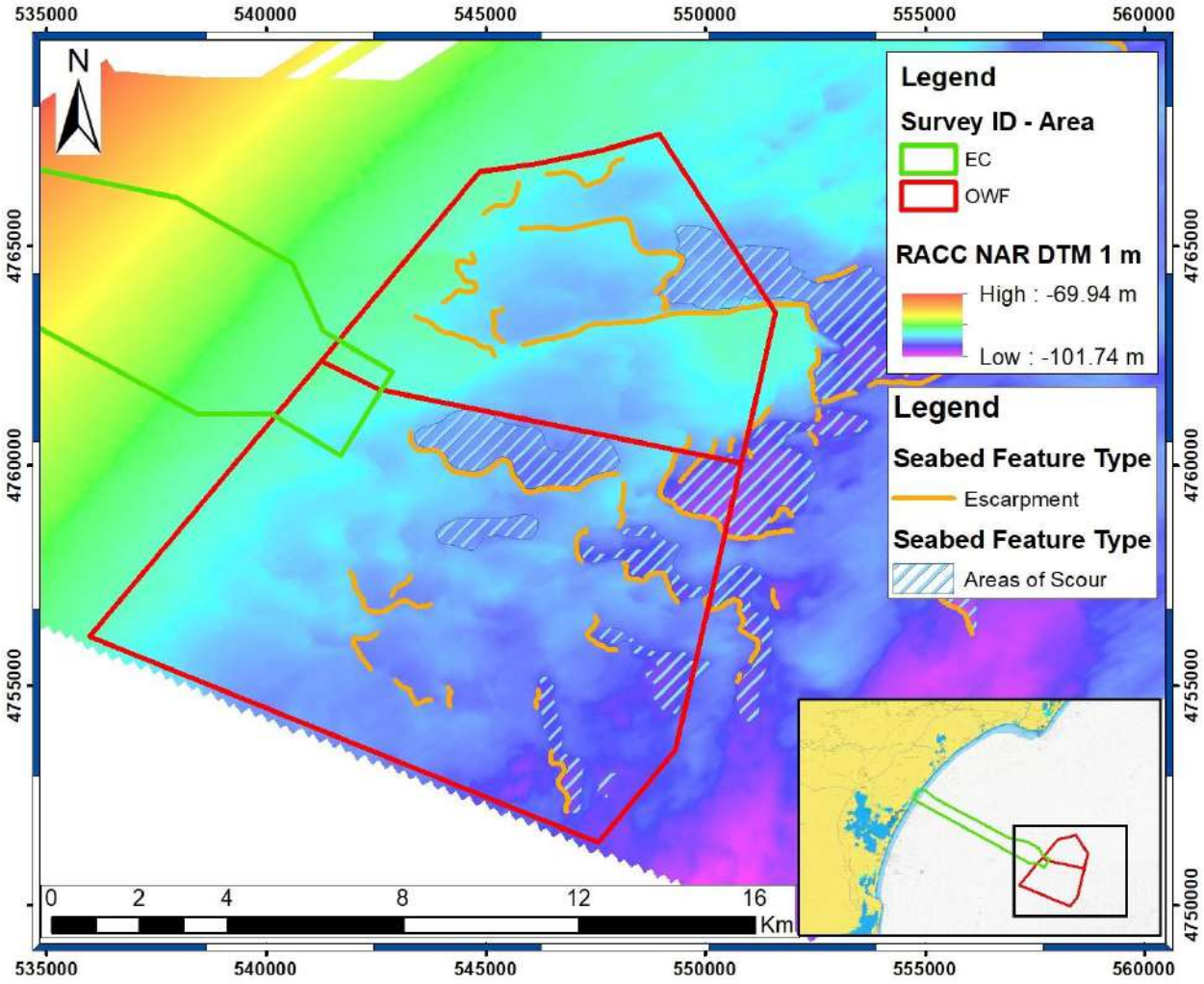


Figure 7-7 Interpretation of areas of scour and escarpments within the OWF 1.

7.2.2 Seabed Mounds

Numerous seabed mounds are interpreted within the AO6 OWF Zone 1 survey area. These mounds are round structures ~ 50 m (occasionally > 150 m) in diameter and varying in height from 10 cm to 2 m, examples of these seabed mounds are presented in Figure 7-8 and Figure 7-9. These features may be authigenic carbonate mounds formed by the presence of gas (relic and/or present day) (Bohrmann et al. 1998, Catherine et al. (2017) (Bib. Ref. [8])) The SBP lines that cross these mounds did not display significant acoustic blanking that is usually associated with the presence of gas. The lack of observed acoustic blanking suggests that rather than being gas pockets, these mounds could be relic gas related features or gas release may be episodic, alternatively their formation could be unrelated to gas.

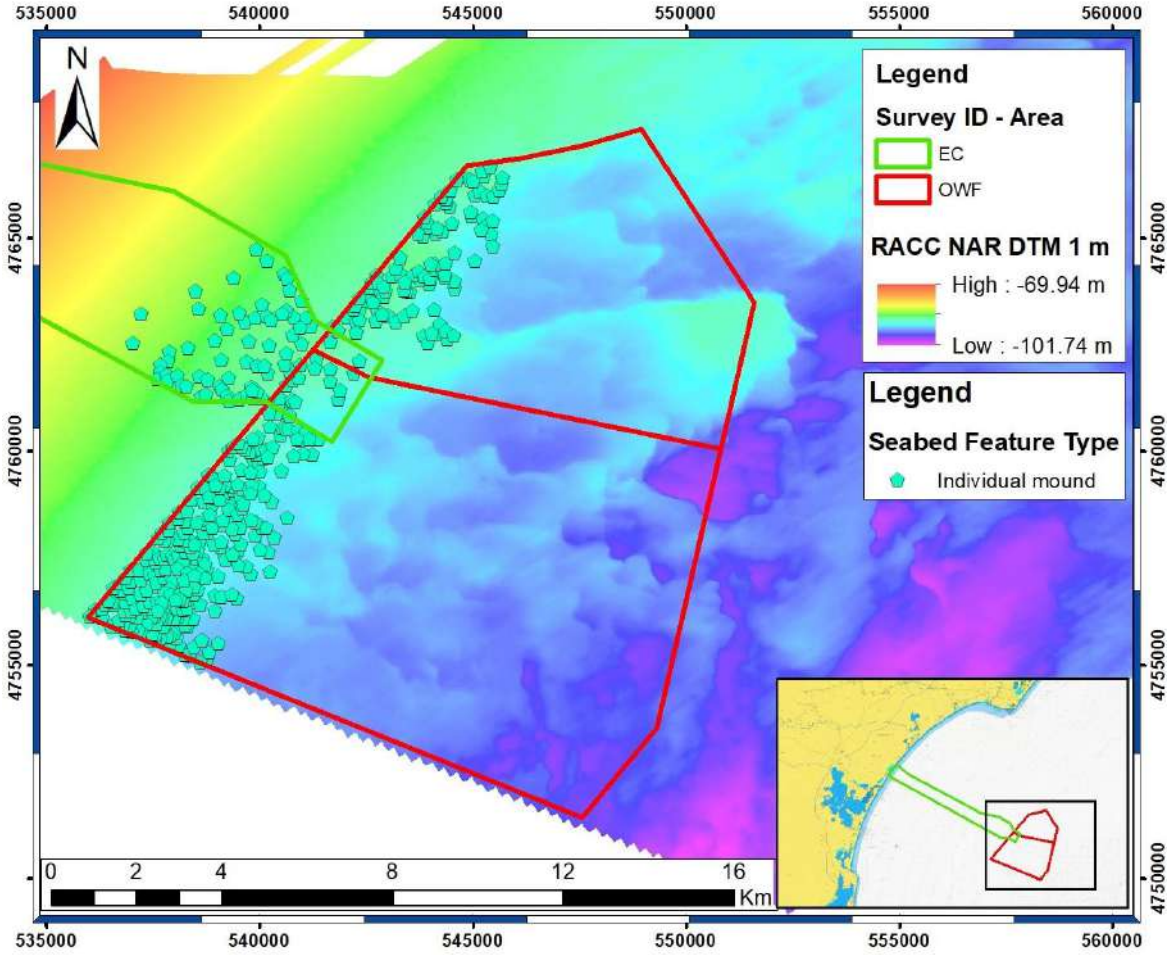


Figure 7-8 Interpretation of seabed mounds within the OWF 1.

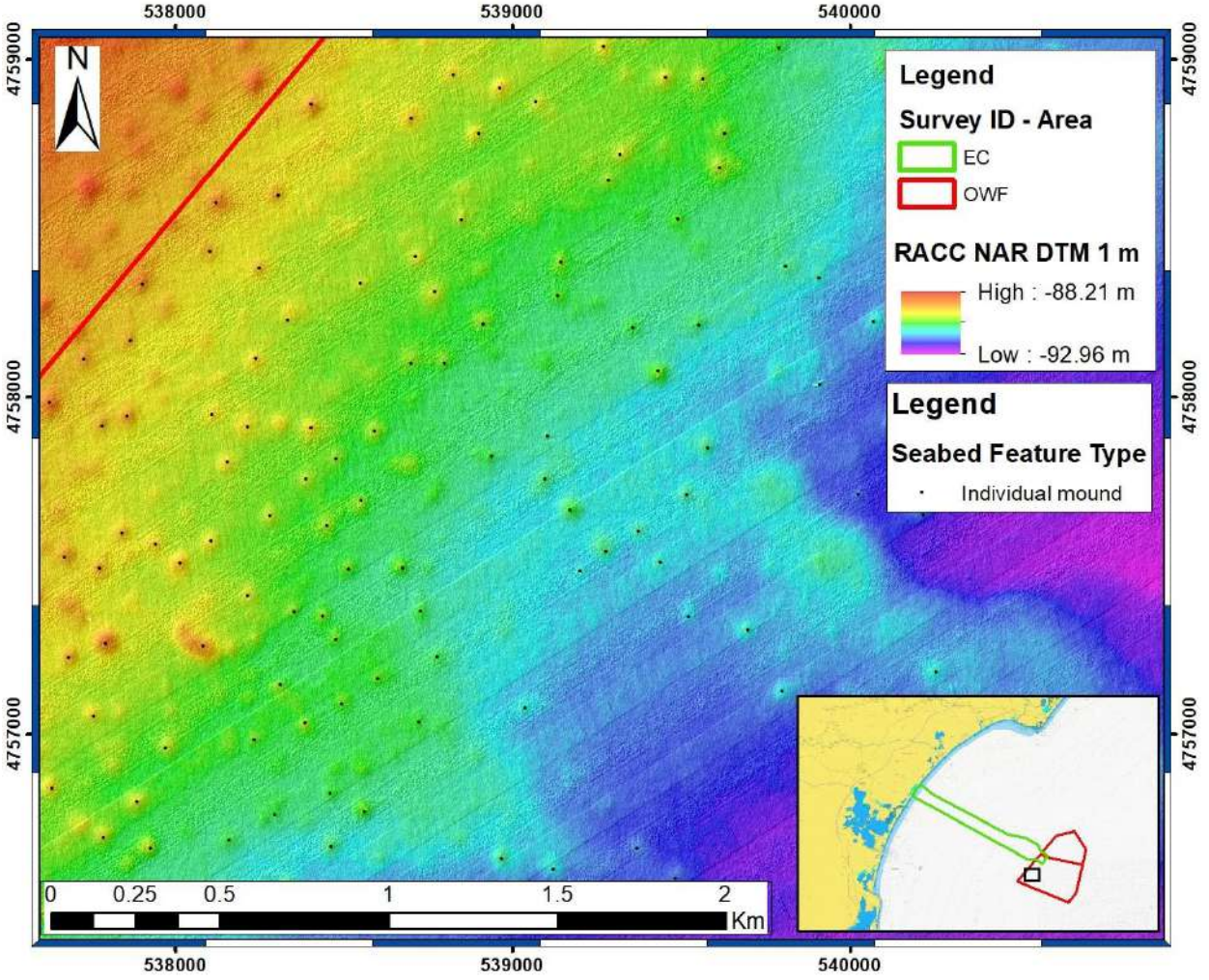


Figure 7-9 Hillshade MBES data example of seabed mounds within the OWF 1.

7.2.3 Depressions

Numerous depressions have been interpreted from the MBES data; these are more discreet than the areas of scour. They are up to approximately 600 m in length and 200 m in width. Their origin is unknown.

An overview of the depressions is presented in Figure 7-10.

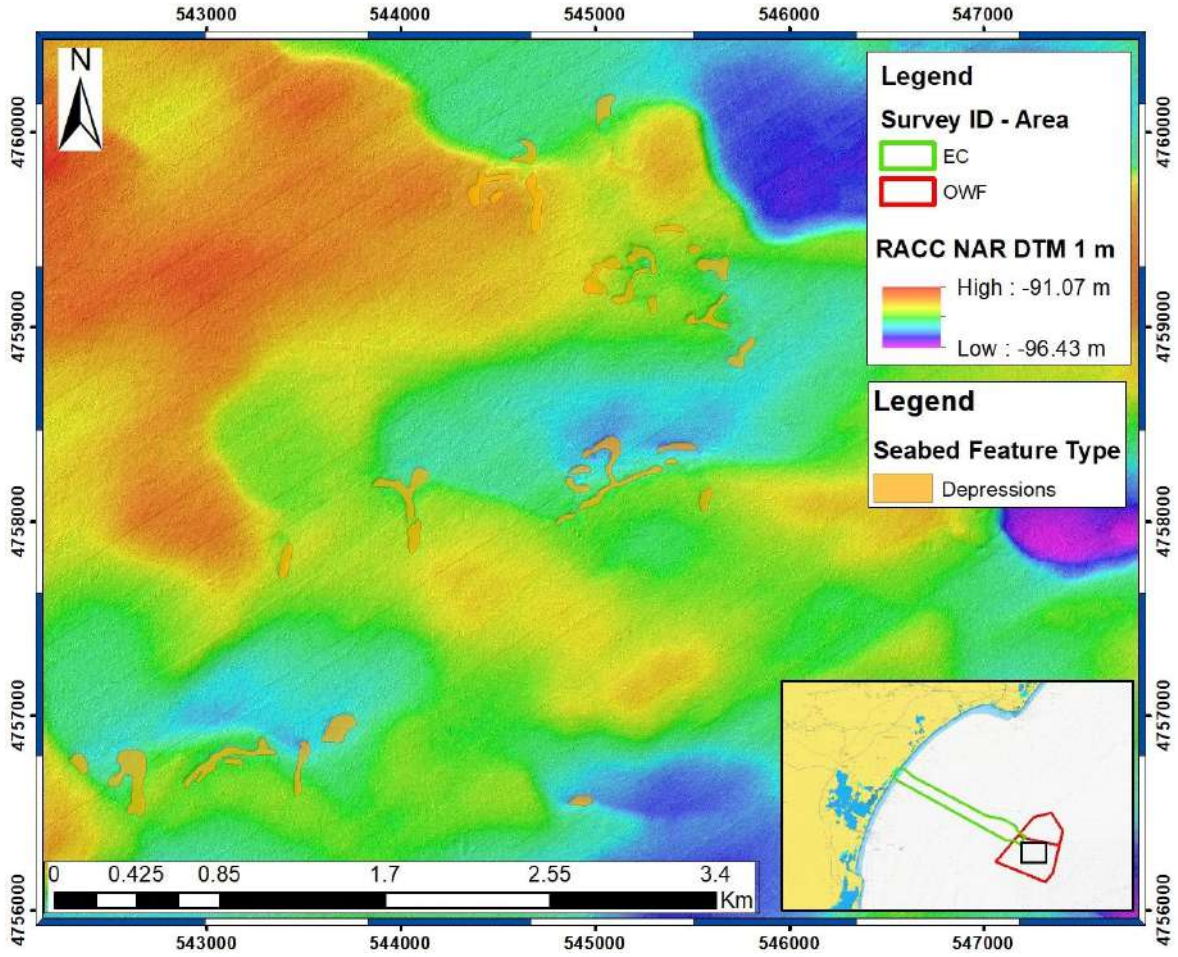


Figure 7-10 Interpretation of depressions within the OWF 1.

7.2.1 Other bedforms

No ripples, megaripples or sandwaves are interpreted within AO6 OWF Zone 1 from the available data.

7.3 SEDIMENT INTERPRETATION

Two sediment types, (Mud and Gravelly Sand) have been mapped in the geophysical data, primarily interpreted from the MBES data, but assisted by the SSS and SBP data where available. Geotechnical data has been extrapolated using the geophysical data. Gravelly sand is associated with an escarpment edge and mud dominates in the remaining survey area. Figure 7-11 presents an overview of the sediment interpretation within OWF 1.

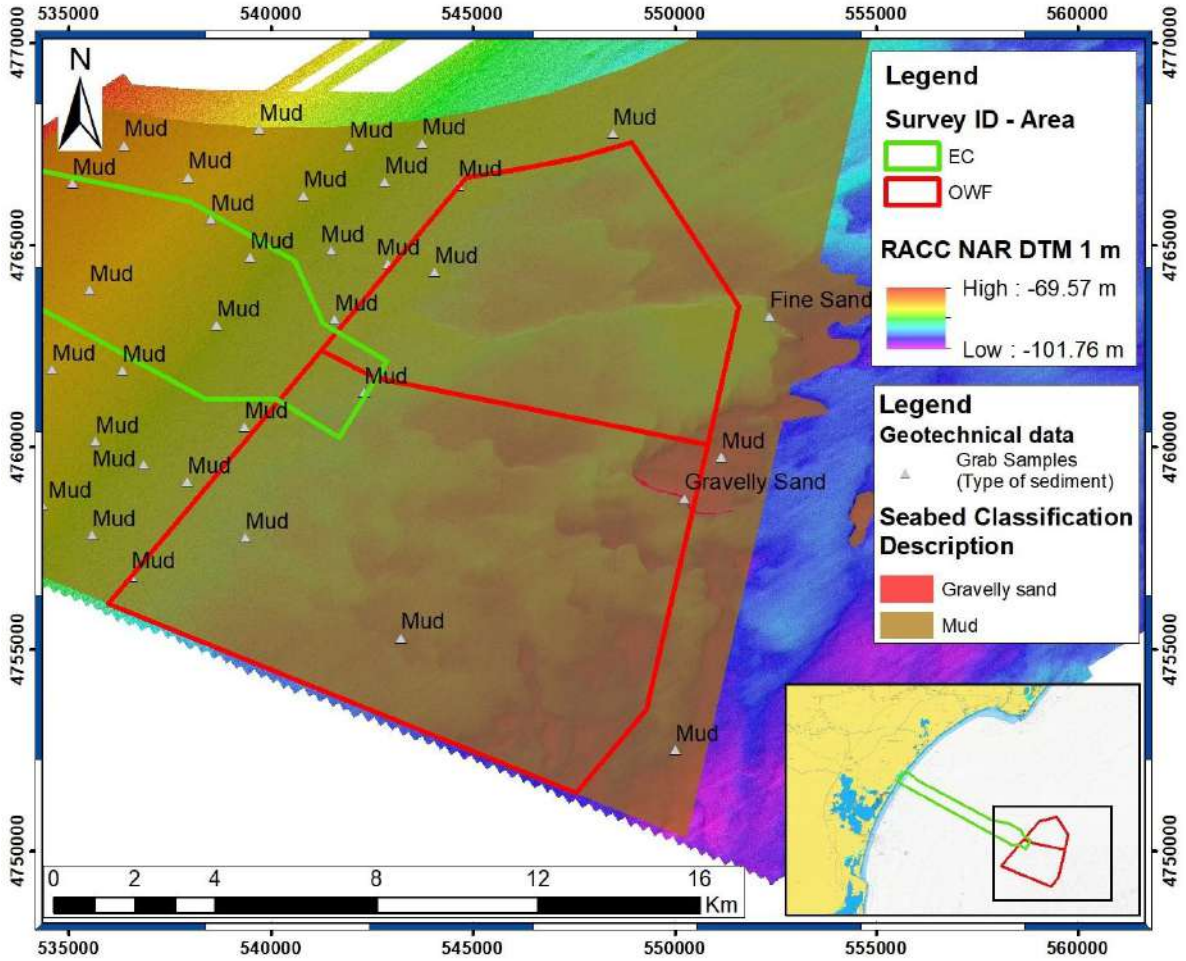


Figure 7-11 Interpretation of sediment types within the AO6 OWF Zone 1.

7.4 GEOLOGICAL FAULTS

There is no evidence of faulting in the survey area.

7.5 pUXO Contacts

During the UXO survey, 286 side scan sonar contacts and 92 sub-bottom profiler contacts contacts. This data can be consulted in the UXO Factual report (Report Ref. 11) and the GIS package for AO6 project (Ref. 12 A total ALARP area of 18.000 m^2 was obtained for the 20 Geotechnical locations. A total ALARP area of 13.500 m^2 was obtained for the 15 Geotechnical locations within

the area of interest. Of these 15 ALARP areas, only 8 were finally surveyed in the geotechnical survey.

Punctual objects have been identified, but it was not possible to specify if there are ferromagnetic elements. Therefore, it can be difficult to distinguish anthropogenic elements from geological elements (boulders, gravel, coarser sediments, etc.). Thus, any anomaly corresponds to a potential UXO.

A 15 m avoidance distance was established from any isolated anomaly. Consequently, 4 of the 20 GI boxes had to be relocated to an area that would not interfere with the safety buffers (highlighted in pink in Table 16.

Table 16 Final GI box location. In pink are the GI boxes where an alternative location had to be found.

ID	Name GI	Easting UTM31N	Northing UTM31N	Within AO6 Zone 1	Geotechnical survey
1	Z1_OWF_B01	535653.00	4759631.00	NO	NO
2	Z1_OWF_B02	536029.88	4756351.93	YES	YES
3	Z1_OWF_B03	540174.00	4755418.00	YES	YES
4	Z1_OWF_B04	541885.00	4758300.00	YES	NO
5	Z1_OWF_B05	537801.00	4764594.00	NO	NO
6	Z1_OWF_B06	544468.00	4765336.00	YES	NO
7	Z1_OWF_B07	548247.00	4767787.00	YES	YES
8	Z1_OWF_B08	553282.00	4771042.00	NO	NO
9	Z1_OWF_B09	553644.00	4767710.00	NO	NO
10	Z1_OWF_B10	552748.00	4763567.00	YES	YES
11	Z1_OWF_B11	551851.00	4759421.00	YES	NO
12	Z1_OWF_B12	550173.00	4756522.00	YES	NO
13	Z1_OWF_B13	550110.00	4751106.00	NO	NO
14	Z1_OWF_B14	548460.00	4753652.00	YES	YES
15	Z1_OWF_B15	546831.00	4756173.00	YES	YES
16	Z1_OWF_B16	545119.00	4753310.00	YES	NO
17	Z1_OWF_B17	544766.00	4756595.00	YES	NO

ID	Name GI	Easting UTM31N	Northing UTM31N	Within AO6 Zone 1	Geotechnical survey
18	Z1_OWF_B18	544395.00	4759928.00	YES	YES
19	Z1_OWF_B19	547728.00	4760299.00	YES	NO
20	Z1_OWF_B20	547351.00	4763598.00	YES	YES

7.6 ANTHROPOGENIC OBJECTS

During the bathy-sedimentologic study performed by SHOM (Report Ref. 17), no potentially anthropogenic objects were found in the OWF 1 area. However, two of them were found outside the OWF 1 area. Their locations are indicated on the map:

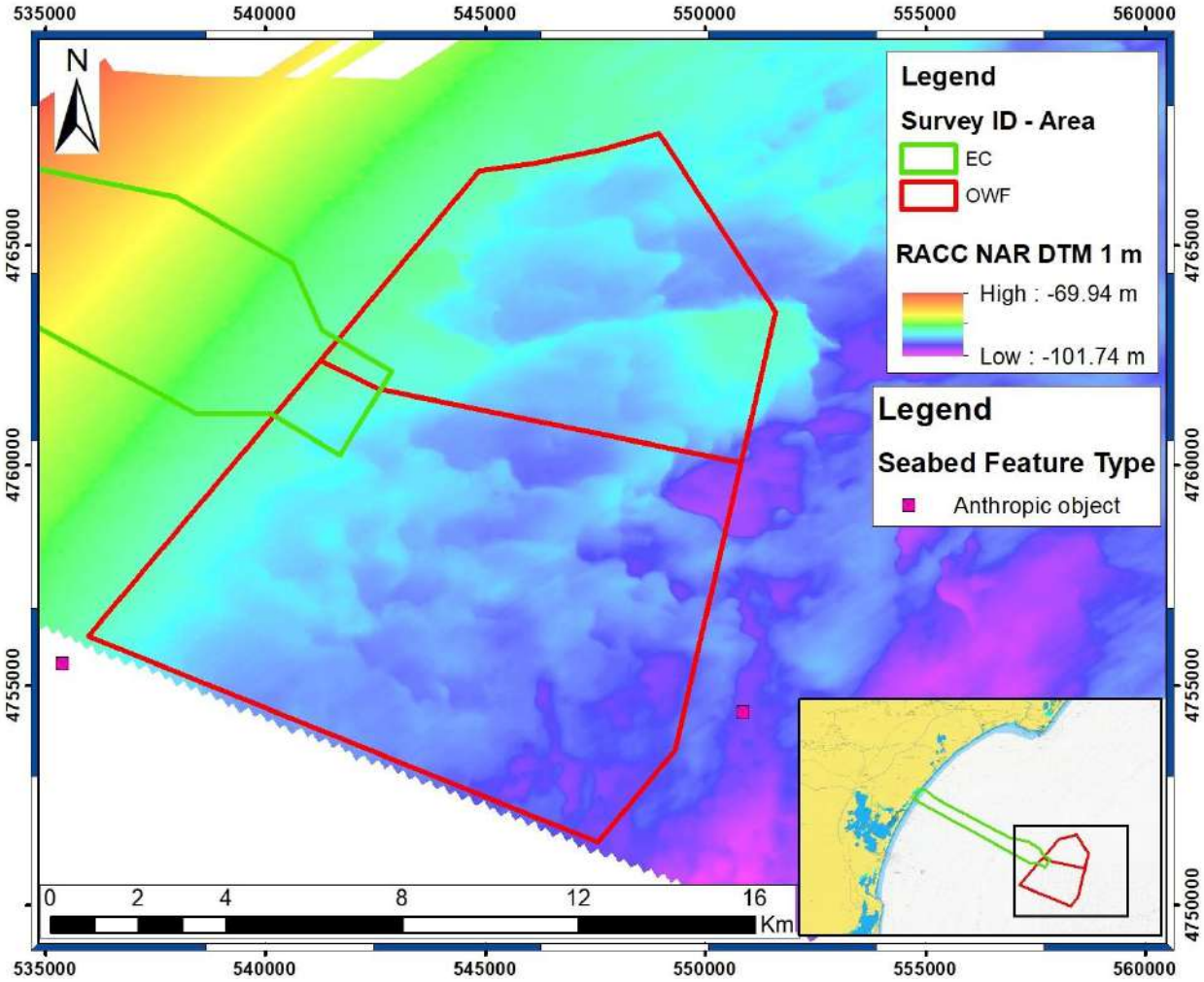


Figure 7-12 Location of anthropogenic objects identified by SHOM.

No shipwrecks have been identified in the area.

8 GEOHAZARDS

This section presents the possible geohazards identified across the AO6 OWF Zone 1 area. Table 17 presents a qualitative classification based on the observed indicators listed.

Table 18 summarizes the potential geohazards encountered in OWF 1 area. It should be noted that this assessment is limited to the coverage (line spacing), resolution and quality of the datasets available.

Table 17 Criteria for geohazards estimation.

Class	Description
High	Indicators observed in the area within the data sets.
Moderate	Some indicators observed in the area within the data sets.
Low	No indicators observed in the area within the data sets.

Table 18 Geohazards and soil conditions summary for OWF 1 area.

Geohazard	Likelihood	Description	Notes
Irregular seafloor | High Slope areas	Moderate	Sediment escarpments interpreted within the survey area have moderate slopes associated with them	Challenges are expected if anchors and cables installation is foreseen in slopes more than 5-10 degrees.
Low strength deposits over very dense sands	Moderate	Anchor Installation challenges due to soft over hard ground conditions at some of the investigated locations.	Floating turbines anchors concepts to account for possible driven piles deflection, scour and/or insufficient drag embedment anchors penetration due to geological settings
Gravel, and cobles accumulations	Low	Possible accumulations of gravels and cobbles within granular sediments, have been observed in some of the geotechnical data, but are not the dominant sediment type.	Uncertainties on vertical and lateral variability of granular sediments at seabed are still present, considering the datasets.
Superficial Boulders	Moderate	A few scattered boulders have been interpreted within the survey area	Limitations on the resolution of the datasets has produced uncertainties on mapping the location and extension of superficial boulders.

Geohazard	Likelihood	Description	Notes
Bedforms	Low	Escarpments have been interpreted within the survey area, these may have been generated by wind driven currents remobilizing sediment, the presence of the homogenous drape of Unit 1 suggests these are likely historic features.	Bedforms are created by currents due to sediment transport and may show internal structures and variations in sediment grain size. Relevant to anchors and cables scour potential and on bottom stability.
Shallow gas/Gas pockets	Low	The SHOM identified some shallow gas in deeper layers of the Corridor area. However, the specific analysis of UHRS did not identify any specific shallow gas area in OWF 1.	The interpretation of the anomalous seismic amplitudes was limited to the upper 30m.
Ground condition variability/Channeling	Low	High thickness variability of unconsolidated sediment or due to the occurrence of buried channel incisions and related infill material at different depths are not evident within the geophysical data and the investigated locations, however, not discarded.	If identified, the foundation concept should consider multiple options and/or different designs to suits specific ground conditions at selected turbine locations
Seismogenic faults	Low	No fault scarps have been observed at seabed in the data sets.	Anchor structures and cables shall be located at a safe distance from seismogenic faults.

9 GEOTECHNICAL PARAMETERS

All the offshore and onshore laboratory analyses and methodologies are detailed within the geotechnical operational and factual reports with Ref. 6 and Ref. 9. This section presents the different methodologies used to obtain the derived geotechnical parameters in this report.

9.1 SOIL GEOTECHNICAL PARAMETERS

Geotechnical parameters relevant to floating turbine foundation design were derived based on the data referenced in Section 4.5 and summarised in subchapters below.

9.1.1 Submerged unit weight

Unit weight was derived from CPT data using method published by Lengkeek and Brinkgreve 2022 (Bib. Ref. [22]) and from bulk density derived in the lab multiplied by 9.81m/s^2; then, submerged unit weight was derived by subtracting the unit weight of seawater (10.1 kN/m^3).

9.1.2 Plasticity Index

Soil plasticity is evaluated based on results of Atterberg limit tests in the lab. Atterberg limits were executed on cohesive specimens or on the fines fraction of granular samples. In the latter case the coarse fraction was discarded.

9.1.3 Cone Penetration Test (CPT) tip resistance

Cone Penetration Test tip resistance (q_c) is a geotechnical parameter utilised in various pile design and drivability methods, representing the in-situ density and strength of the soils. Pore pressure (u_2) is also provided to identify the variance of the cohesive and partially drained layers along the profile.

9.1.4 Relative density

Relative density was derived for SAND1, SAND2, units from CPT data. Relative density is derived following the below equation by Jamiolkowski et al. 2001 (Bib. Ref. [18]):

Relative density (D_r) in Relative_Density_2 is defined as:

$$D_r = 100 \cdot \left[C_1 \cdot ln\left(\frac{q_t/\sigma_{atm}}{\sqrt{\sigma'_{vo}/\sigma_{atm}}}\right) + C_2 \right]$$

Jamiolkowski et al. (2001), NCHRP Synthesis 368 pp 41-42

Where:

C_1 is stored in the Relative_Density_2_C1 field. Published value is 0.268 for all sands

C_2 is stored in the Relative_Density_2_C2 field. For average compressibility: $C_2 = -0.675$, for high compressibility and sands of carbonate or calcareous composition: $C_2 \leq 1.0$, for low compressibility: $C_2 \geq 2.0$.

Figure 9-1 Equation used to derive the relative density parameter from CPT data.

9.1.5 Friction angle

Friction angle was derived for SAND1 and SAND2 from Shear box (DS), CID onshore lab testing and from CPT data following the method by Kulhawy and Mayne 1990 (Bib. Ref. [21]), which was the most representative correlation for the ground conditions at OWF 1.

The angle of internal friction of sand (Φ') in Friction_Angle_3 is defined as:

$$\Phi' = C_1 + C_2 \cdot log(q_{t1})$$

Kulhawy and Mayne (1990), NCHRP Synthesis 368 p 38

Where:

C_1 is 17.6° in the published formula, and is stored in the Friction_Angle_3_C1 field.

C_2 is 11.0° in the published formula, and is stored in the Friction_Angle_3_C2 field.

This correlation of Φ' is only applicable for Sands and hence will only be calculated if the Soil_Type_1 field value is *coarse* or *mixed*.

Figure 9-2 Equation used to derive the friction angle parameter from CPT data.

9.1.6 Undrained shear strength

Values of undrained shear strength for cohesive units SILT1, SILT2, CLAY1, and CLAY2 have been derived using the following methods:

- UU triaxial compression
- CIU triaxial compression
- Direct simple shear DSS
- Lab vane LV
- Fall cone FC
- Cone penetration tests (CPT)

Undrained Shear Strength (Su) has been empirically derived from CPT data using Nkt factors 15 and 20, using the following relationship from Lunne et al., (1997) (Bib Ref. [24]).

$$Su = \frac{Qnet}{Nkt}$$

where:

Su = Undrained shear strength

Qnet = net cone resistance

Nkt = conversion factor

Figure 9-3 Equation used to derive the Su parameter from CPT data.

The selection of Nkt factors as 15 and 20 was confirmed after shear strength results from UU, DSS and CIU tests obtained in SILT1, SILT2, CLAY1, and CLAY2 samples were compared with the CPT-derived method. Engineering judgment was used to compare UU, DSS and CIU results from cohesive samples affected by sand partings and partially drained behaviour.
Remoulded undrained shear strength was derived from the following lab tests:

- Remoulded Lab vane (LV_R)
- Remoulded Fall cone (FC_R)
- Remoulded unconsolidated undrained triaxial (UU_R)

Soil sensitivity was derived by dividing the intact shear strength by the remoulded shear strength Index strength tests performed offshore, such as pocket penetrometer and hand torvane results, present a high level of scatter due to manual testing, hence are not considered for comparison.

9.1.7 Strain at 50% strength (E50)

Epsilon 50 (E50), defined as the soil strain at 50% of maximum deviatoric stress, is derived from UU and CIU tests on intact samples and is typically used to inform the deformation characteristics of cohesive soils. Epsilon 50 is of particular interest for designing piles subject to lateral loads that significantly depend on soil resistance along the pile as a function of pile deflection.

10 GEOTECHNICAL UNITS

This section details the geotechnical units derived for the AO6 OWF Zone 1 area based on geotechnical data referenced in Section 4.5, aided by the seismo-stratigraphic framework presented in Section 6 and its limitations.

Geotechnical units were derived based on the lab and/or CPT-interpreted soil description of primary and secondary soil constituents and consistency according to ISO 14688-1 (2017b) and ISO 14688-2 (2017c). Table 19 presents the units and soil mechanical behaviour derived for OWF 1 soil characterization.

Table 19 Geotechnical units differentiated for the OWF 1 area.

RGT Unit	Soil behaviour	Geotechnical unit	Description	Sample Photo
1,2	Undrained or cohesive	**SILT1**	Extremely low to low shear strength clayey SILT	
2, 3,4	Transitional or partially drained	**SILT2**	Low to high shear strength sandy/clayey SILT	
2,3,4,6	Drained or granular	**SAND1**	Medium dense to dense silty SAND with interbedded sandy clay.	
2,4, 6,8	Drained or granular	**SAND2**	Dense to very dense silty SAND	
3,4,5	Undrained or cohesive	**CLAY1**	Medium to high shear strength sandy CLAY	Not intercepted by VC or PC
5,6,7	Undrained or cohesive	**CLAY2**	High to very high shear strength sandy CLAY	Not intercepted by VC or PC

Digital geotechnical data used are included in APPENDIX V – DIGITAL GEOTECHNICAL DATA. Location-specific summary logs have been developed to provide ground conditions profiles for each geotechnical location to 30 m BSB, based on a minimum unit thickness of 0.5 m (Figure 10-1).

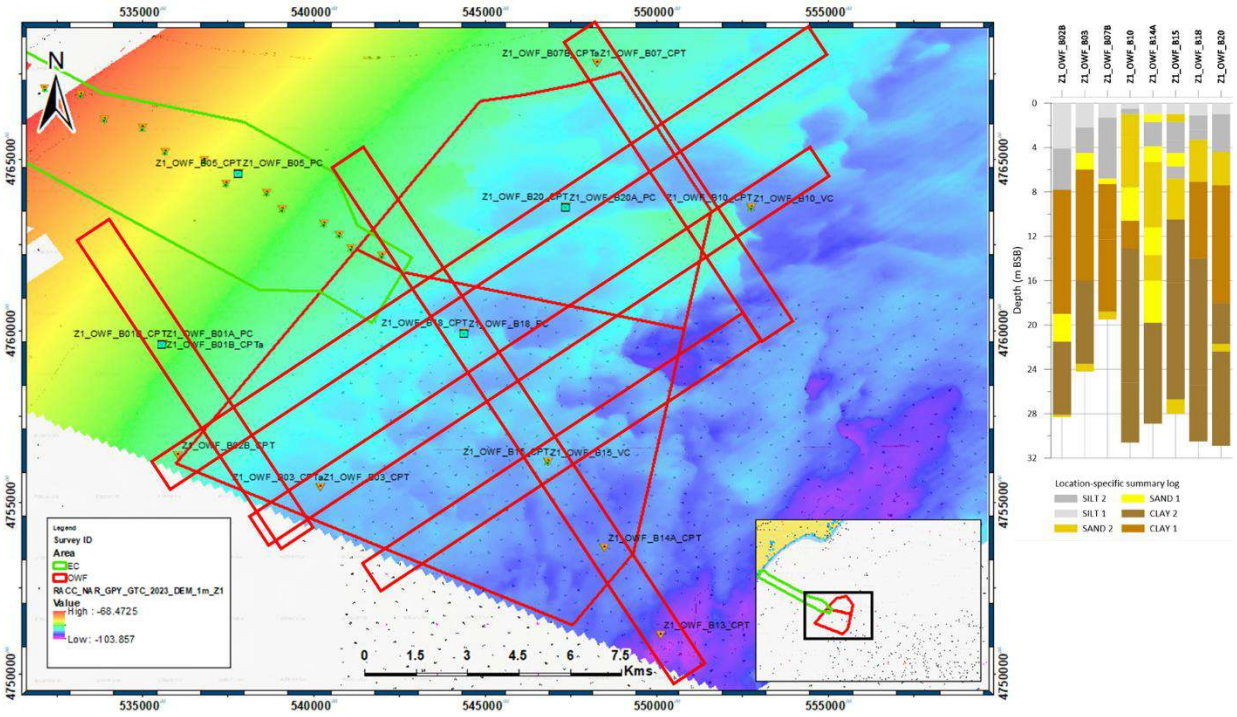


Figure 10-1 Geotechnical Units OWF 1.

Geotechnical locations have been grouped to create longitudinal and transversal profiles that display the evolution of the units across the OWF 1. The location of geotechnical units within each soil profile is shown from Figure 10-2 to Figure 10-7.

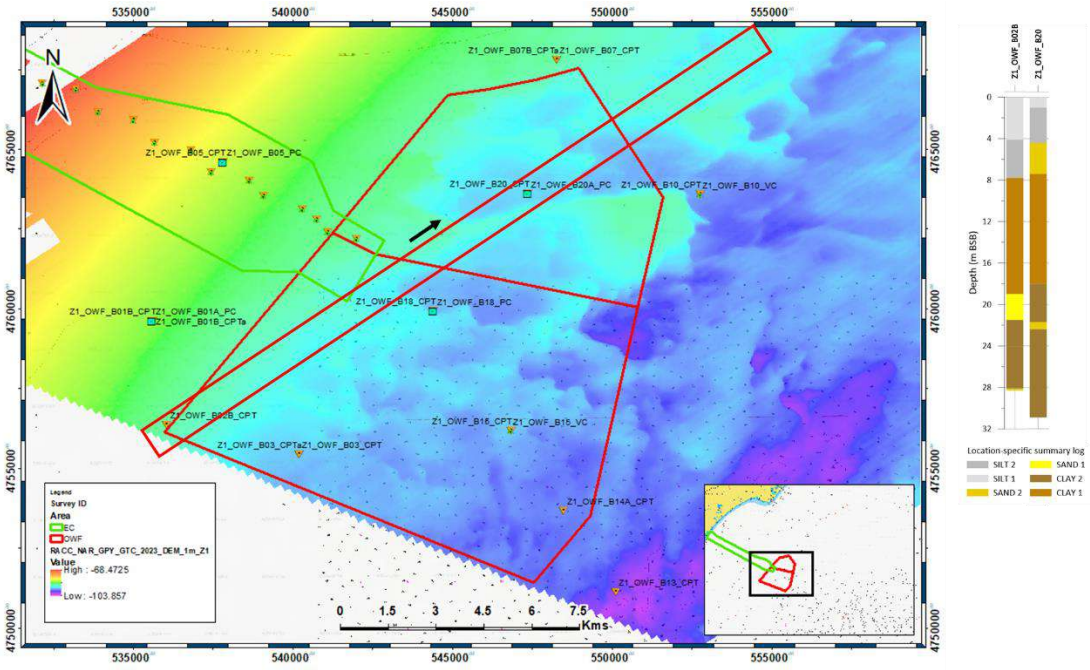


Figure 10-2 Geotechnical Units within the CPT of Soil Profile 1.

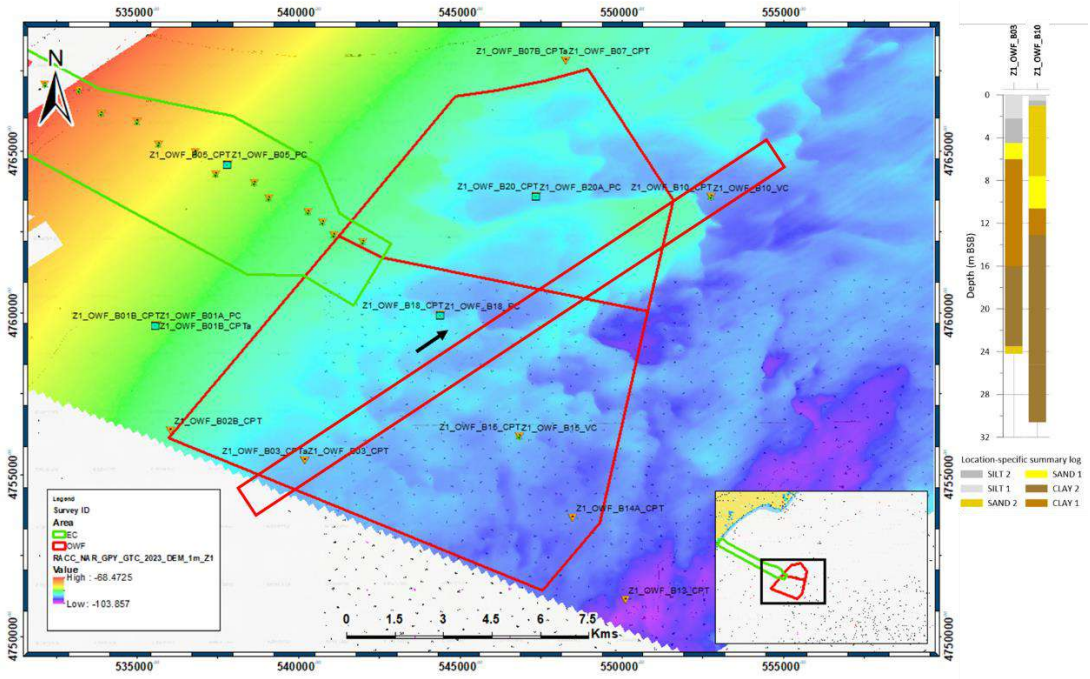


Figure 10-3 Geotechnical Units within the CPT of Soil Profile 2.

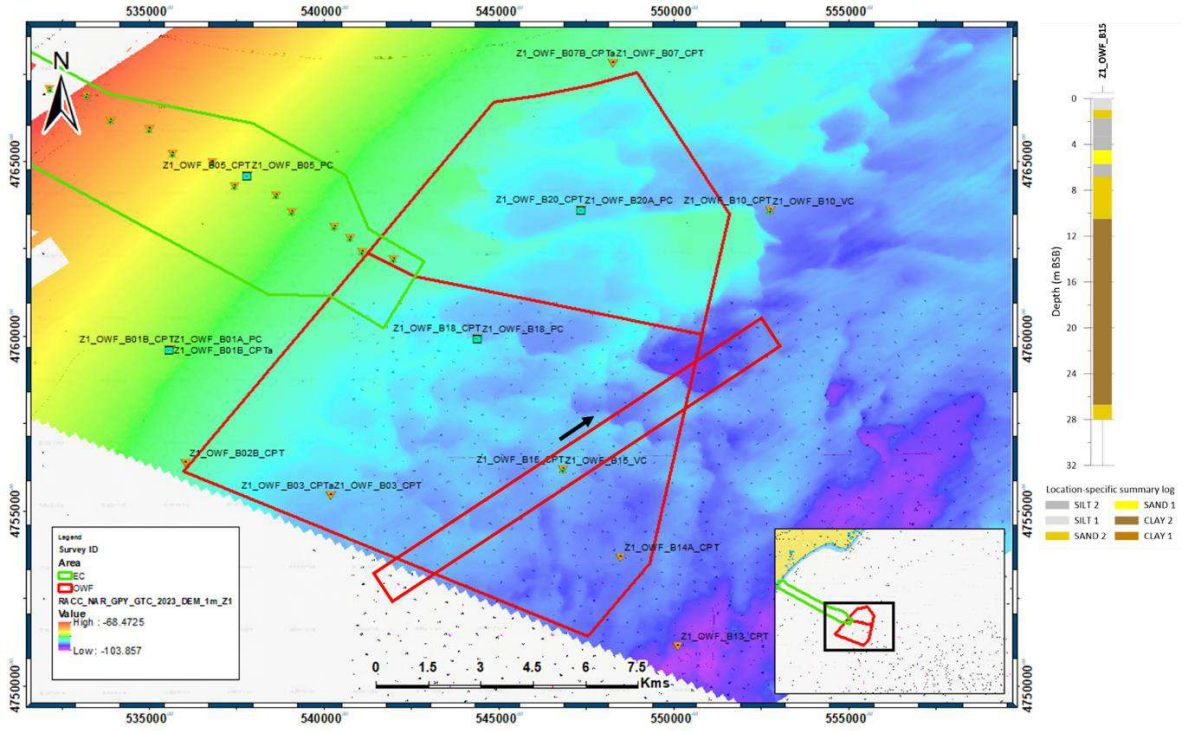


Figure 10-4 Geotechnical Units within the CPT of Soil Profile 3.

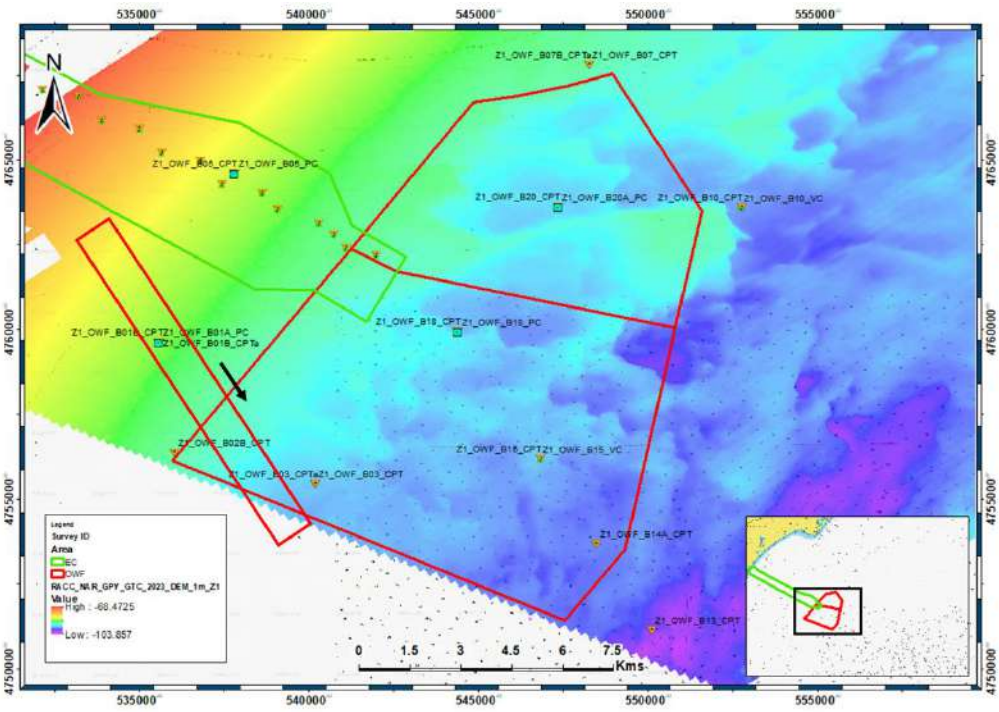


Figure 10-5 Geotechnical Units within the CPT of Soil Profile 4.

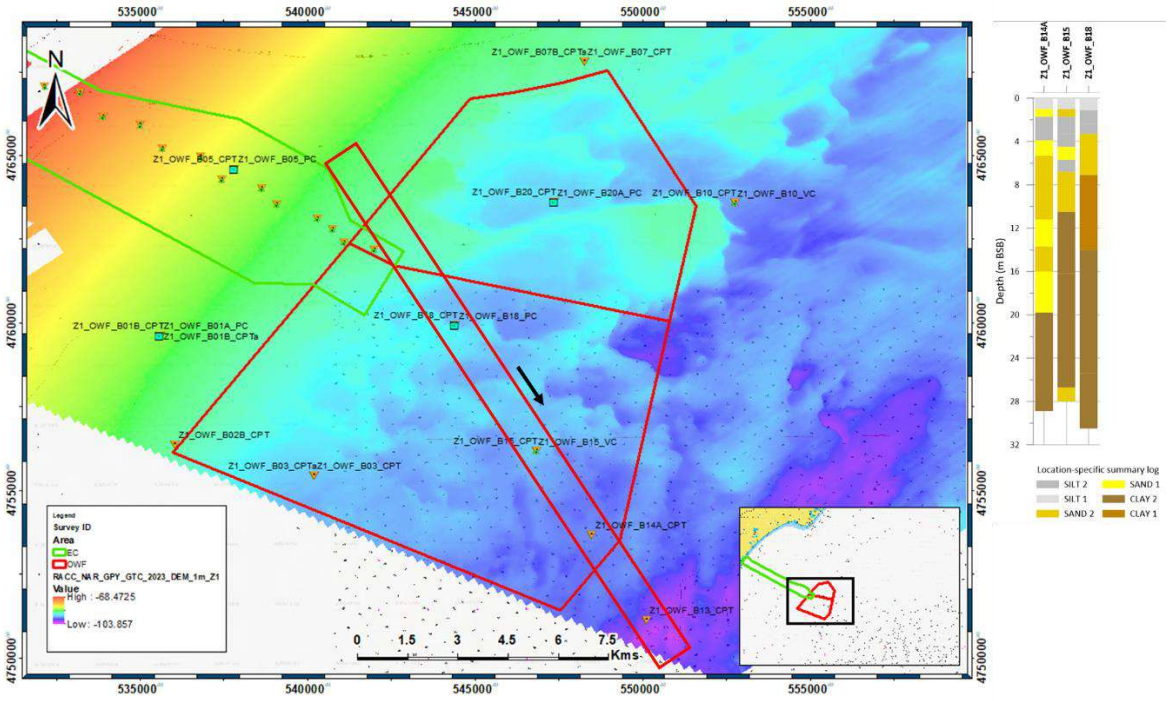


Figure 10-6 Geotechnical Units within the CPT of Soil Profile 5.

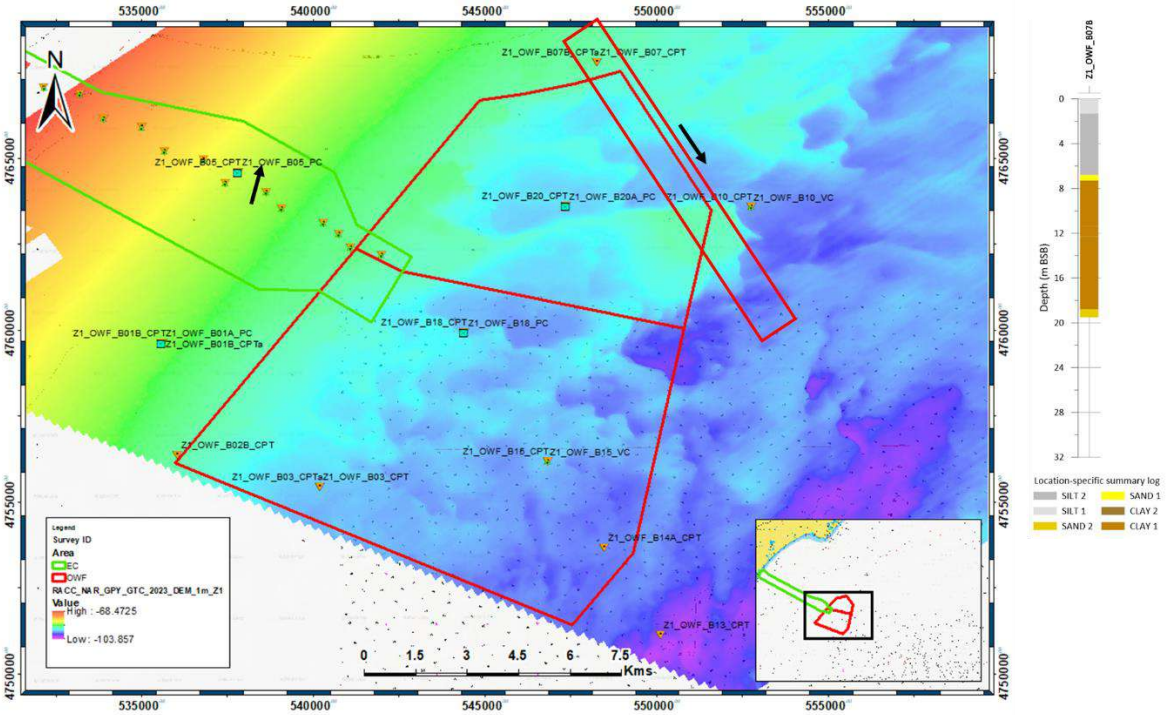


Figure 10-7 Geotechnical Units within the CPT of Soil Profile 6.

A statistical approach combined with engineering judgment in line with the methods recommended by Hicks Bib. Ref. [13] and Baecher Bib. Ref. [4] was used to derive integrated geotechnical parameters considering the limitation of the multiple data sets. Due to the lateral variability associated with the encountered ground conditions, the geotechnical parameters provided are deemed suitable for preliminary foundation sizing in proximity or up to a 100 m radius of the geotechnical locations.

The geotechnical parameters provided are based on the following workflow:

- Assessment of spatial soil variability within the OWF 1 area on geophysical and geotechnical results.
- Selection and presentation of geotechnical parameters for 3 main units with associated 6 subunits.
- Correlation of in situ CPT and laboratory test data to interpret derived geotechnical parameters in soil units.
- Geotechnical parameter assessment for typical parameter value ranges and assignment of best (BE), low (LE) and high (HE) estimates for selected parameters, where possible.
- The mechanical behaviour of the soils within the study area is mainly described by shear strength in cohesive soils (i.e. clay and silt) and relative density in granular soils (i.e., sand and gravel).

Geotechnical parameters low estimate (LE), best estimate (BE) and higher estimate (HE) are presented for the relevant units in the sections below.

10.1 SILT

The SILT unit is further divided into two sub-units, SILT1 and SILT2, based on the consistency and mechanical behaviour, as detailed below.

10.1.1 SILT1

The SILT1 unit is present at seabed at all investigated locations, generally consisting of extremely low to low shear strength clayey SILT.

Geotechnical locations, detailed soil description and top and bottom depths associated with SILT1 unit are presented in table below.

Table 20 SILT1 locations, depths and detailed soil description.

Location ID	Top (m)	Bottom (m)	Thickness (m)	Description SILT1
Z1_OWF_B02B	0.0	4.1	4.1	Extremely low shear strength clayey SILT
Z1_OWF_B03	0.0	1.5	1.5	Extremely low shear strength clayey SILT
Z1_OWF_B03	1.5	2.2	0.7	Very low to low shear strength clayey SILT
Z1_OWF_B07B	0.0	1.3	1.3	Extremely low shear strength clayey SILT
Z1_OWF_B10	0.0	0.5	0.5	Extremely low shear strength clayey SILT
Z1_OWF_B14A	0.0	1.0	1.0	Extremely low shear strength clayey SILT
Z1_OWF_B15	0.0	1.0	1.0	Extremely low shear strength clayey sandy SILT
Z1_OWF_B18	0.0	1.1	1.1	Extremely low shear strength sandy clayey SILT
Z1_OWF_B20	0.0	1.0	1.0	Extremely low shear strength slightly sandy clayey SILT

Indicative geotechnical parameters for SILT1 are presented in table below.

Table 21 Geotechnical parameters for SILT1.

SILT1						Submerged unit weight (kN/m3)			Cone tip resistance (MPa)			Plasticity Index (%)		
min-Top depth (m)	Max Top depth (m)	min Bottom Depth (m)	Max Bottom Depth (m)	Min Thickness (m)	Max Thickness (m)	LE	BE	HE	LE	BE	HE	LE	BE	HE
0	0	0.5	4.1	0.5	4.1	6.5	7	7.5	0.02	0.05	0.1	5	10	15
						Water Content (%)			Undrained shear strength (kPa)			E50 (%)		
						LE	BE	HE	LE	BE	HE	LE	BE	HE
						20	30	40	5	8	15	2	3	4

10.1.2 SILT2

The SILT2 unit generally consists of low to high shear strength low plasticity sandy SILT, locally with thin to thick beds of very loose silty sand. Due to the frequent beds of sand this unit may present a partially drained behaviour. Geotechnical locations, detailed soil description and top and bottom depths associated with SILT2 unit are presented in table below.

Table 22 SILT2 locations, depths and detailed soil description.

Location ID	Top (m)	Bottom (m)	Thickness (m)	Description SILT2
Z1_OWF_B02B	4.1	7.8	3.7	Low to medium shear strength clayey SILT with thin to thick beds of very loose to medium dense silty sand
Z1_OWF_B03	2.2	4.5	2.3	Medium shear strength clayey SILT
Z1_OWF_B07B	1.3	6.8	5.5	Low to medium shear strength clayey SILT with thin to thick beds of loose to medium dense silty sand
Z1_OWF_B10	0.5	1	0.5	Low to medium shear strength sandy SILT
Z1_OWF_B14A	1.7	3.9	2.2	Low to medium shear strength clayey sandy SILT
Z1_OWF_B15	1.7	3.3	1.6	Low to medium shear strength clayey slightly sandy SILT
Z1_OWF_B15	3.3	4.5	1.2	Medium to high shear strength sandy SILT with sand partings
Z1_OWF_B15	5.7	6.8	1.1	Medium to high shear strength sandy SILT
Z1_OWF_B18	1.1	2.4	1.3	Very low to low shear strength clayey sandy SILT
Z1_OWF_B18	2.4	3.3	0.9	Medium shear strength clayey SILT interbedded with very loose to loose silty sand
Z1_OWF_B20	1;0	4.4	3.4	Low to medium shear strength slightly sandy clayey SILT

Indicative geotechnical parameters for SILT2 are presented in the table below.

Table 23 Geotechnical parameters for SILT2.

SILT2						Submerged unit weight (kN/m3)			Cone tip resistance (MPa)			Plasticity Index (%)		
min-Top depth (m)	Max Top depth (m)	min Bottom Depth (m)	Max Bottom Depth (m)	Min Thickness (m)	Max Thickness (m)	LE	BE	HE	LE	BE	HE	LE	BE	HE
0.5	5.7	1.0	6.8	0.5	5.5	7.0	7.5	8.5	0.5	1.0	2.0	5	7	10
						Water Content (%)			Undrained shear strength (kPa)			E50 (%)		
						LE	BE	HE	LE	BE	HE	LE	BE	HE
						10	25	40	20	40	80	1.5	2	3.5

10.2 SAND

The SAND unit is further divided into two sub-units, SAND1 and SAND2. based on the relative density as detailed below.

10.2.1 SAND1

The SAND1 unit is locally present in the majority of the investigated locations. generally consisting of medium dense to dense silty SAND, locally with thin to thick beds of low to medium, locally high. shear strength sandy clay.
Geotechnical locations. detailed soil description and top and bottom depths associated with SAND1 unit are presented in the table below.

Table 24 SAND1 locations, depths and detailed soil description.

Location ID	Top (m)	Bottom (m)	Thickness (m)	Description SAND1
Z1_OWF_B02B	19	21.5	2.5	Medium dense to dense silty SAND with thin to thick beds of medium to high shear strength sandy clay
Z1_OWF_B03	4.5	6.0	1.5	Medium dense to very dense silty SAND
Z1_OWF_B07B	6.8	7.3	0.5	Loose to medium dense silty SAND
Z1_OWF_B10	7.6	9.4	1.8	Medium dense to dense gravelly silty SAND
Z1_OWF_B10	9.4	10.6	1.2	Medium dense to dense gravelly silty SAND interbedded with high shear strength sandy clay
Z1_OWF_B14A	1.0	1.7	0.7	Medium dense silty SAND
Z1_OWF_B14A	3.9	5.3	1.4	Medium dense to dense silty SAND
Z1_OWF_B14A	11.2	13.7	2.5	Medium dense to dense clayey SAND with thin to thick beds of medium to high shear strength sandy clay
Z1_OWF_B14A	16	19.8	3.8	Medium dense to dense clayey SAND with thin to thick beds of medium to high shear strength sandy clay
Z1_OWF_B15	4.5	5.7	1.2	Loose to medium dense slightly gravelly silty SAND with thick beds of medium to high shear strength sandy silt

Indicative geotechnical parameters for SAND1 are presented in the table overleaf.

Table 25 Geotechnical parameters for SAND1.

SAND 1						Submerged unit weight (kN/m3)			Cone tip resistance (MPa)			Relative Density (%)			Friction angle (°deg)		
Min Top depth (m)	Max Top depth (m)	Min Bottom Depth (m)	Max Bottom Depth (m)	Min Thickness (m)	Max Thickness (m)	LE	BE	HE	LE	BE	HE	LE	BE	HE	LE	BE	HE
1.0	11.2	1.7	19.8	0.5	3.8	9	9.5	10	5	10	30	30	50	70	30	32	35

10.2.2 SAND2

The SAND2 unit is generally consisting of medium-dense to very dense slightly gravelly silty SAND.

Geotechnical locations, detailed soil description and top and bottom depths associated with SAND2 unit are presented in table below.

Table 26 SAND2 locations, depths and detailed soil description.

Location ID	Top (m)	Bottom (m)	Thickness (m)	Description SAND2
Z1_OWF_B02B	28.1	28.3	0.2	Dense silty SAND
Z1_OWF_B03	23.5	24.2	0.7	Dense to very dense SAND
Z1_OWF_B07B	18.8	19.5	0.7	Dense to very dense silty SAND
Z1_OWF_B10	1.0	3.1	2.1	Very dense slightly silty slightly gravelly SAND
Z1_OWF_B10	3.1	7.6	4.5	Very dense SAND
Z1_OWF_B14A	5.3	11.2	5.9	Very dense silty SAND with thin beds of medium to high shear strength sandy clay
Z1_OWF_B14A	13.7	16.0	2.3	Dense to very dense silty SAND
Z1_OWF_B15	1.0	1.7	0.7	Medium dense slity SAND
Z1_OWF_B15	6.8	10.5	3.7	Dense to very dense silty SAND
Z1_OWF_B15	26.7	28	1.3	Very dense slightly gravelly silty SAND
Z1_OWF_B18	3.3	7.1	3.8	Very dense slightly gravelly silty SAND
Z1_OWF_B20	4.4	7.4	3.0	Dense to very dense slightly gravelly silty SAND with thick beds of medium high to high shear strength sandy clay
Z1_OWF_B20	21.7	22.4	0.7	Dense to very dense silty SAND

Indicative geotechnical parameters for SAND2 are presented in the table below.

Table 27 Geotechnical parameters for SAND2.

SAND 2						Submerged unit weight (kN/m3)			Cone tip resistance (MPa)			Relative Density (%)			Friction angle (ºdeg)		
Min Top depth (m)	Max Top depth (m)	Min Bottom Depth (m)	Max Bottom Depth (m)	Min Thickness (m)	Max Thickness (m)	LE	BE	HE	LE	BE	HE	LE	BE	HE	LE	BE	HE
1.0	28.1	1.7	28.3	0.2	5.9	9.5	10	10.5	25	35	40	80	90	100	32	35	37

10.3 CLAY

CLAY was found in two subunits of different strengths. CLAY1 and CLAY2. Due to a similar seismic response. the distinction within the different units is not possible using the UHRS dataset.

10.3.1 CLAY1

CLAY1 unit consists of medium to high shear strength intermediate plasticity sandy CLAY. locally sandy. locally with thin and thick beds of loose to medium dense silty sand.
Geotechnical locations, detailed soil description and top and bottom depths associated with CLAY1 are indicated in the table below.

Table 28 CLAY1 locations, depths and detailed soil description.

Location ID	Top (m)	Bottom (m)	Thickness (m)	Description CLAY1
Z1_OWF_B02B	7.8	19	11.2	Medium to high shear strength sandy CLAY
Z1_OWF_B03	6.0	16.0	10.0	Medium to high shear strength sandy CLAY with sand partings
Z1_OWF_B07B	7.3	11.4	4.1	Medium to high shear strength slightly sandy CLAY
Z1_OWF_B07B	11.4	12.3	0.9	Medium to high shear strength sandy CLAY with occasional sand partings
Z1_OWF_B07B	12.3	18.8	6.5	Medium to high shear strength slightly sandy CLAY
Z1_OWF_B10	10.6	13.1	2.5	Medium to high shear strength slightly sandy CLAY
Z1_OWF_B18	7.1	14.0	6.9	Medium high to high shear strength sandy CLAY with occasional partings of very loose sand
Z1_OWF_B20	7.4	18.0	10.6	Medium high to high shear strength slightly sandy CLAY

Indicative geotechnical parameters for CLAY1 are presented in table below.

Table 29 Geotechnical parameters for CLAY1

CLAY1						Submerged unit weight (kN/m3)			Cone tip resistance (MPa)			Plasticity Index (%)		
min-Top depth (m)	Max Top depth (m)	min Bottom Depth (m)	Max Bottom Depth (m)	Min Thickness (m)	Max Thickness (m)	LE	BE	HE	LE	BE	HE	LE	BE	HE
6	12.3	11.4	18.8	0.9	11.2	8.5	9.0	9.5	1.0	2.0	2.5	10	15	20
						Water Content (%)			Undrained shear strength (kPa)			E50 (%)		
						LE	BE	HE	LE	BE	HE	LE	BE	HE
						25	27	30	60	70	90	1.5	2	2.5

10.3.2 CLAY2

CLAY2 unit consists of high to very high shear strength sandy CLAY, locally silty, locally with thin and thick beds of very loose to medium dense silty sand.

The table below indicates geotechnical locations, detailed soil descriptions. and top and bottom depths associated with CLAY2.

Table 30 CLAY2 locations, depths and detailed soil description.

Location ID	Top (m)	Bottom (m)	Thickness (m)	Description CLAY2
Z1_OWF_B02B	21.5	24.1	2.6	High shear strength sandy CLAY with partings of very loose to loose sand
Z1_OWF_B02B	24.1	28.1	4.0	High shear strength sandy CLAY
Z1_OWF_B03	16	23.5	7.5	High shear strength sandy CLAY
Z1_OWF_B10	13.1	25.2	12.1	High shear strength slightly sandy CLAY
Z1_OWF_B10	25.2	27.6	2.4	High to very high shear strength slightly gravelly sandy CLAY
Z1_OWF_B10	27.6	30.6	3.0	High shear strength sandy CLAY
Z1_OWF_B14A	19.8	28.9	9.1	High shear strength sandy CLAY interbedded with very loose to loose clayey sand
Z1_OWF_B15	10.5	16.2	5.7	High to very high shear strength sandy CLAY interbedded with very loose to loose silty sand

Location ID	Top (m)	Bottom (m)	Thickness (m)	Description CLAY2
Z1_OWF_B15	16.2	26.7	10.5	High shear strength sandy CLAY
Z1_OWF_B18	14	25.4	11.4	High shear strength silty CLAY interbedded with very loose to medium dense silty sand
Z1_OWF_B18	25.4	26.6	1.2	High shear strength silty CLAY interbedded with very loose to medium dense silty sand
Z1_OWF_B18	26.6	30.5	3.9	High shear strength sandy CLAY
Z1_OWF_B20	18	21.7	3.7	High shear strength slightly sandy CLAY
Z1_OWF_B20	22.4	30.9	8.5	High shear strength slightly sandy CLAY

Indicative geotechnical parameters for CLAY2 are presented in the table below.

Table 31 Geotechnical parameters for CLAY2

CLAY2						Submerged unit weight (kN/m3)			Cone tip re-sistance (MPa)			Plasticity Index (%)		
min-Top depth (m)	Max Top depth (m)	min Bottom Depth (m)	Max Bottom Depth (m)	Min Thick-ness (m)	Max Thick-ness (m)	LE	BE	HE	LE	BE	HE	LE	BE	HE
10.5	27.6	16.2	30.0	1.2	12.1	9	9.5	10	1.5	2.5	3.5	n/a	n/a	n/a
						Water Content (%)			Undrained shear strength (kPa)			E50 (%)		
						LE	BE	HE	LE	BE	HE	LE	BE	HE
						n/a	n/a	n/a	70	90	140	n/a	n/a	n/a

11 LOCATION SPECIFIC GEOTECHNICAL PARAMETERS

The geotechnical results acquired from both offshore and onshore lab testing. and CPT have been analysed as part of the integration work and consolidated into the following sections.
Table 32 below presents a summary of the correlation established among geotechnical and sesimo stratigraphic units applicable in proximity of the geotechnical locations.

Table 32. Seismo-stratigraphic, geological and geotechnical units of the OWF 1 area.

SS. U.: Seismo-stratigraphic Unit; U.S: Upper Surface; L.S: Lower surface; RGT. U: Regional Geotechnical Unit; G. U: Geotechnical Unit.

Geophysics			Geology - Regional Geotechnics				Geotechnics
SS.U.	U.S.	L.S.	RGT.U.	U.S.	L.S.	Geotechnical Description	Geotechnical Units
1	Seabed	H05	RGT Unit 1	Seabed	Base RGT Unit 1	Extremely low shear strength silty slightly sandy CLAY/SILT	SILT 1
2	H05	H06	RGT Unit 2	Base RGT Unit 1	Top RGT Unit 3	Very low to medium shear strength sandy CLAY becoming medium dense SILT/SAND	SILT 1. SILT 2. SAND 1. SAND 2
3	H06	H08	RGT Unit 3	Top RGT Unit 3	Top RGT Unit 4	Very low to very high shear strength CLAY/SILT with occasional loose to medium dense SAND	SILT 2. SAND 1
4	H06	H10	RGT Unit 4	Top RGT Unit 4	Top RGT Unit 5	Medium dense to very dense silty SAND interbedded with high shear strength sandy CLAY	SILT 2. SAND 1. SAND 2
5	H10	H20	RGT Unit 5	Top RGT Unit 5	Top RGT Unit 6	Medium to very high shear strength sandy CLAY with occasional very loose sand partings	CLAY 1. CLAY 2

Geophysics			Geology - Regional Geotechnics				Geotechnics
SS.U.	U.S.	L.S.	RGT.U.	U.S.	L.S.	Geotechnical Description	Geotechnical Units
6	H20	H30	RGT Unit 6	Top RGT Unit 6	Top RGT Unit 7	High shear strength silty CLAY interbedded with very loose to very dense silty SAND	SAND 1. SAND 2 CLAY 2
7	H30	H50 - -	RGT Unit 7	Top RGT Unit 7	H50 - -	High shear strength slightly sandy CLAY	CLAY 2
8	H50	H55	Unit 8	H50	H55 - -	Dense silty SAND	SAND 2

Due to the complex geological settings and limitation of the geophysical data discussed herein. soil types (based on ground-truthed horizons) can be extrapolated within a 500 m radius of the geotechnical locations in line with APPENDIX III – INTEGRATED CHARTS.

Detailed logs for all the combined CPT, PC and VC locations are presented in the Geotechnical factual report (Report Ref. 9) and are included in the APPENDIX IV – BOREHOLE LOGS.

Geotechnical units and parameters' estimates (derived from CPT data and lab testing) and presented in section 10 for each of the 7 subunits may only be valid within approximately 100 m radius of the geotechnical locations.

The complete set of geotechnical parameters presented in the geotechnical plots consists of:

- Submerged unit weight (kN/m^3);
- Moisture content (%);
- Plasticity index (%);
- CPT q_c (MPa). Porewater pressure u_2 (MPa);
- Relative density (%) derived from CPT for noncohesive units;

- Effective peak Friction angle Phi'(º) and cohesion c´ (kPa). derived from shear box tests/CID tests and CPT;
- Undrained shear stress strength (kPa) for fine-grained cohesive soils (CPT derived parameter with Nkt of 15 & 20) and CIU and UU triaxial tests:
- Strain at 50% strength (E50. %) derived from CIU and UU;
- Chemical properties as Carbonate content (%) and Water-soluble sulphide and Chloride content (mg/l).

11.1 LOCATION Z1_OWF_B02B

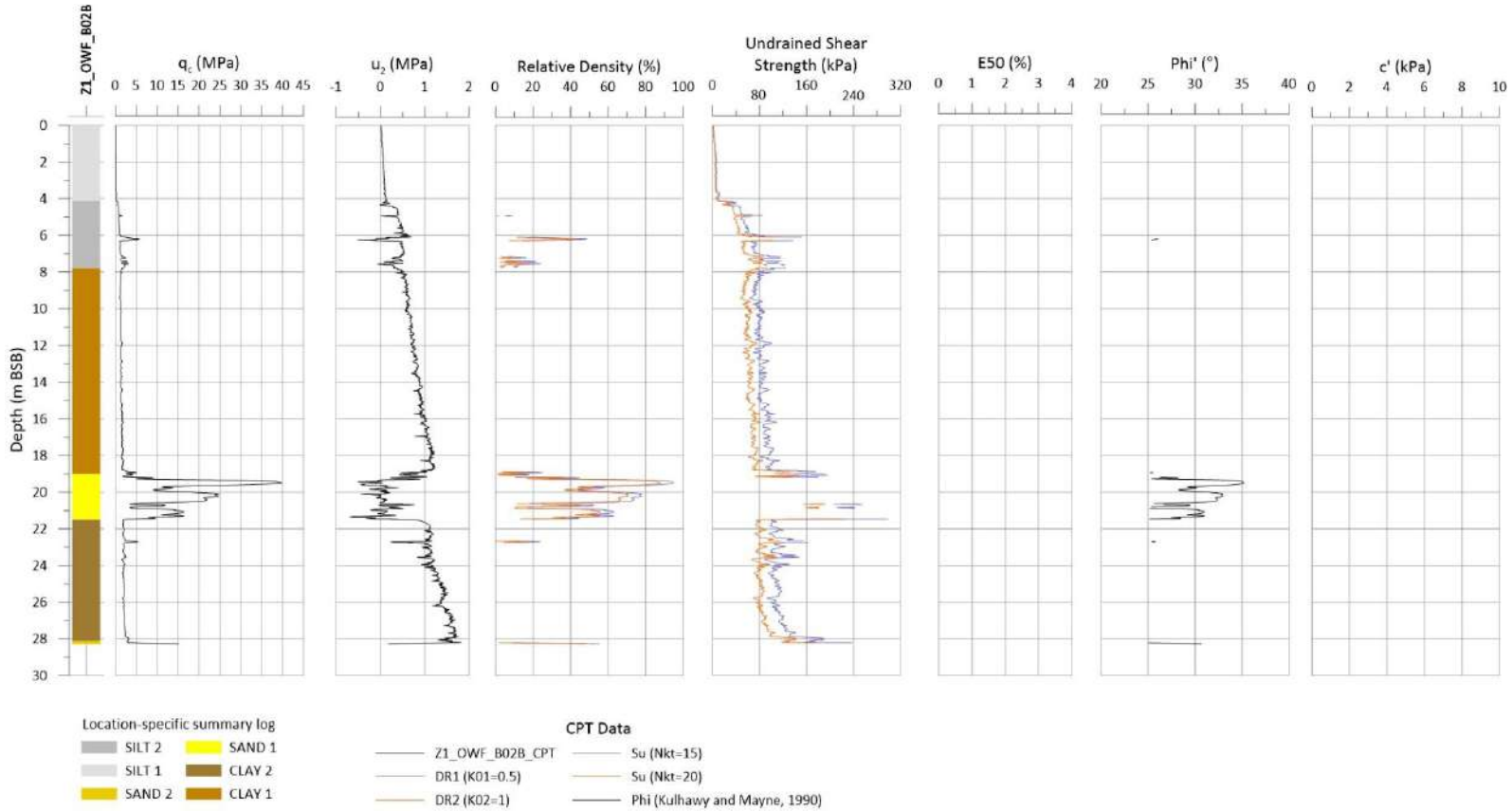


Figure 11-1 qc, u2, relative density, Su, E50. Phi' and c' for Z1_OWF_B02B.

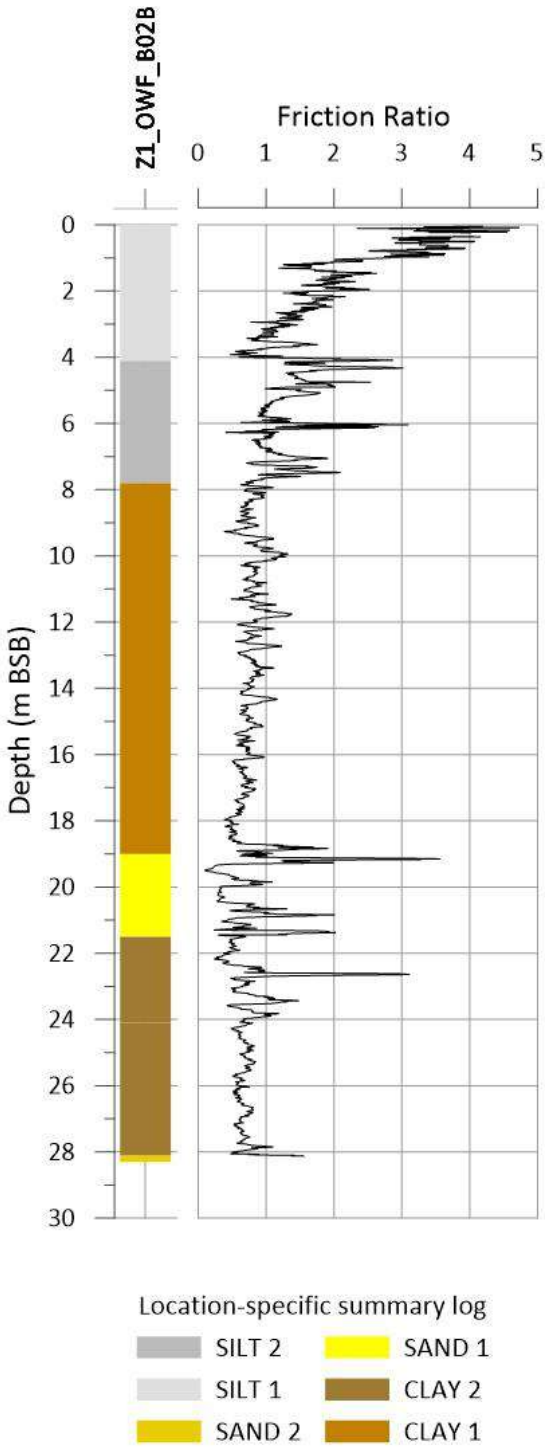


Figure 11-2 Friction ratio for Z1_OWF_B02B.

11.2 LOCATION Z1_OWF_B03

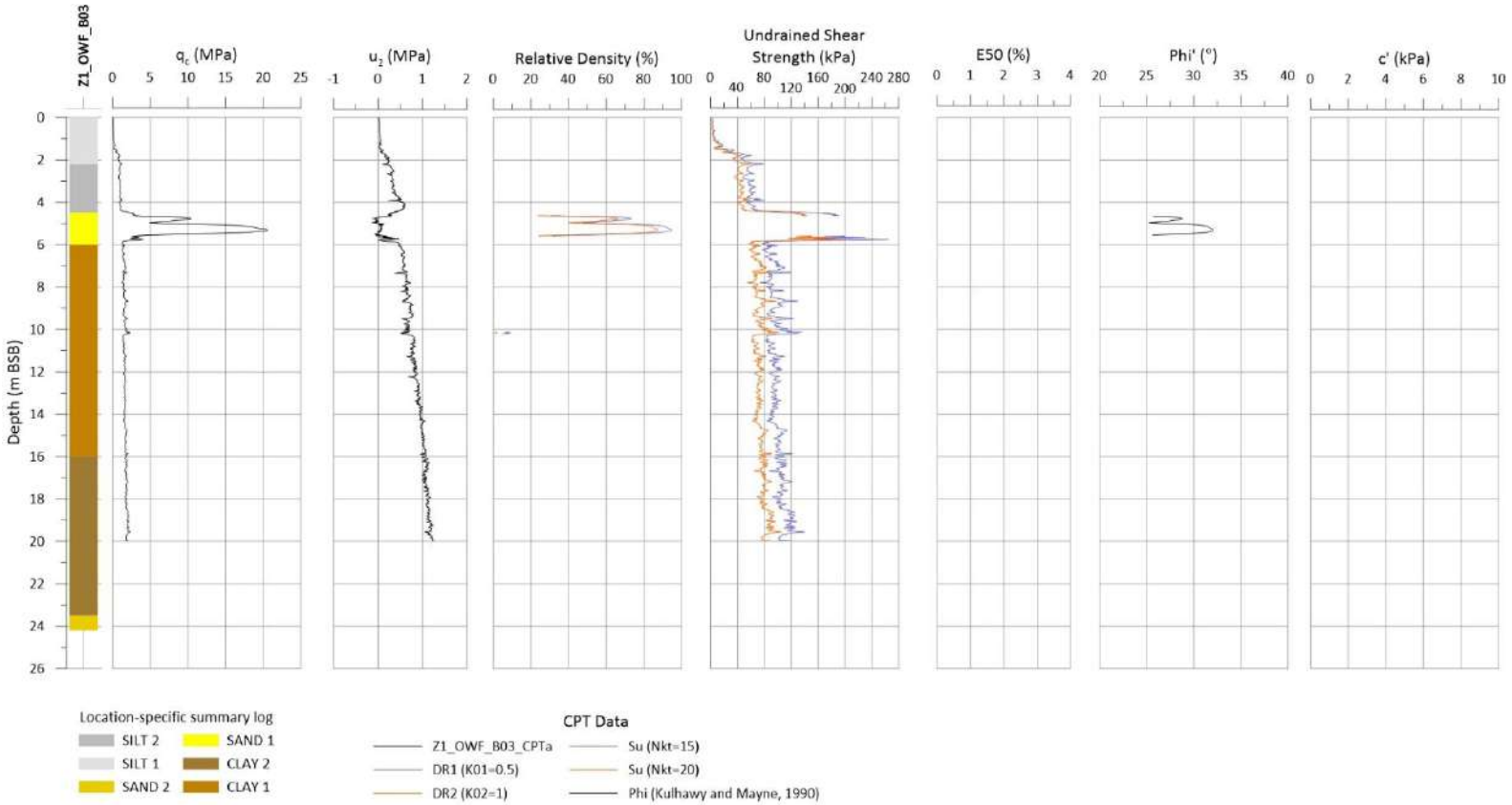


Figure 11-3 qc, u2, relative density, Su. E50, Phi' and c' for Z1_OWF_B03.

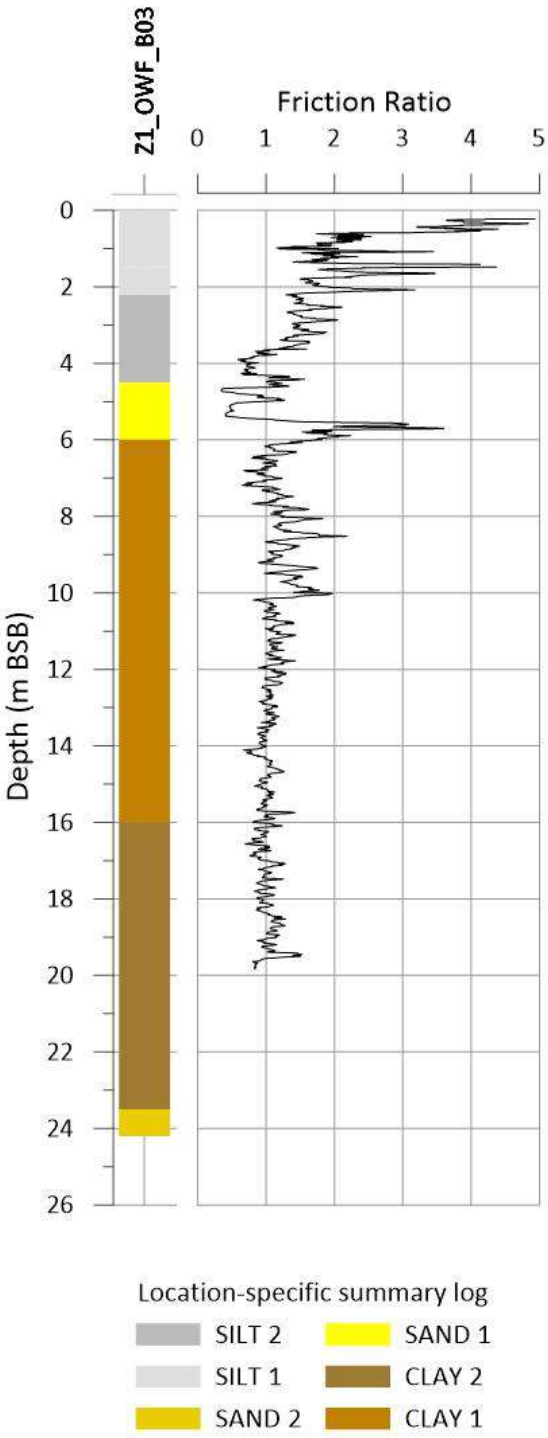


Figure 11-4 Friction ratio for Z1_OWF_B03.

11.3 LOCATION Z1_OWF_B07B

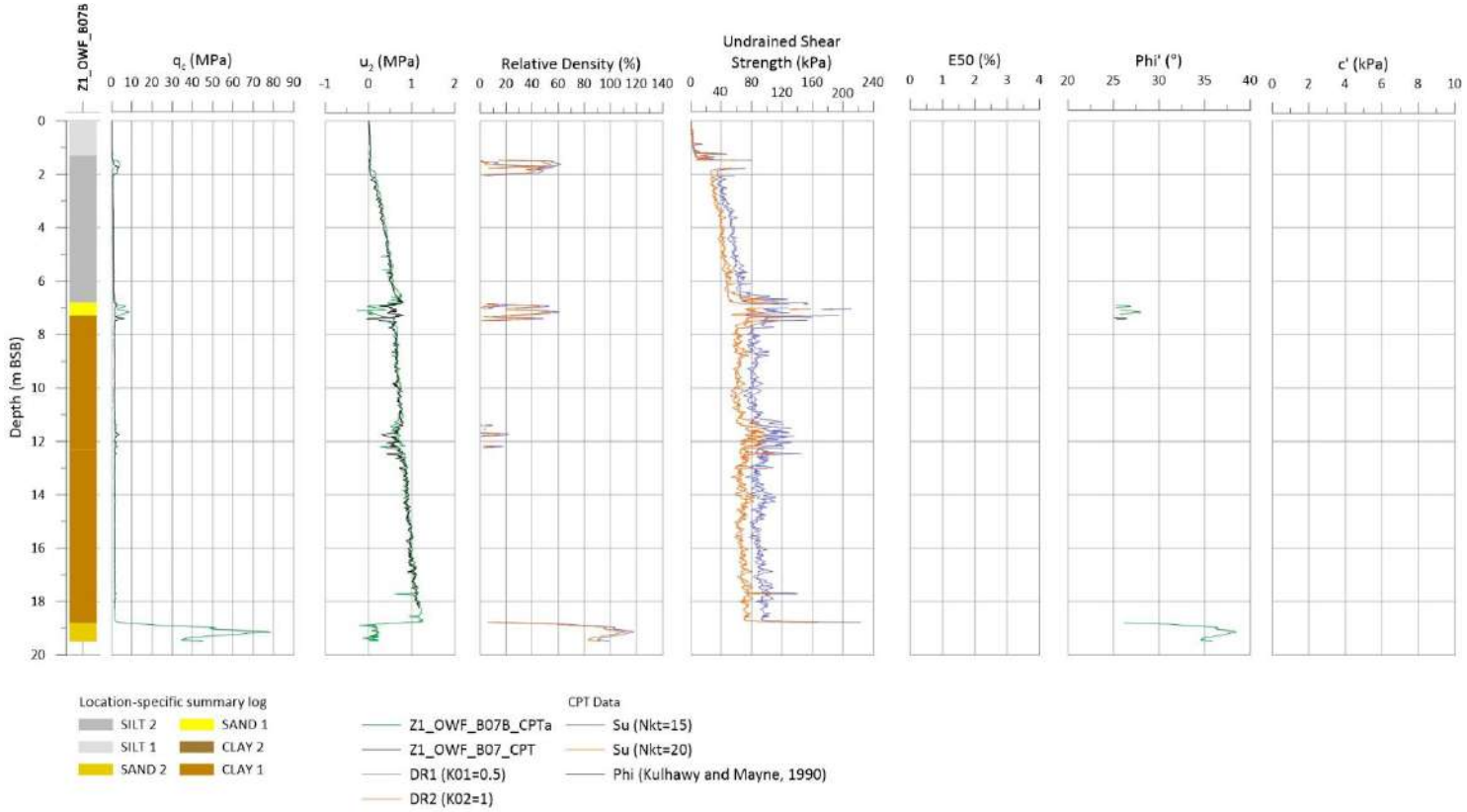


Figure 11-5 qc, u2, relative density, Su, E50, Phi' and c' for Z1_OWF_B07B

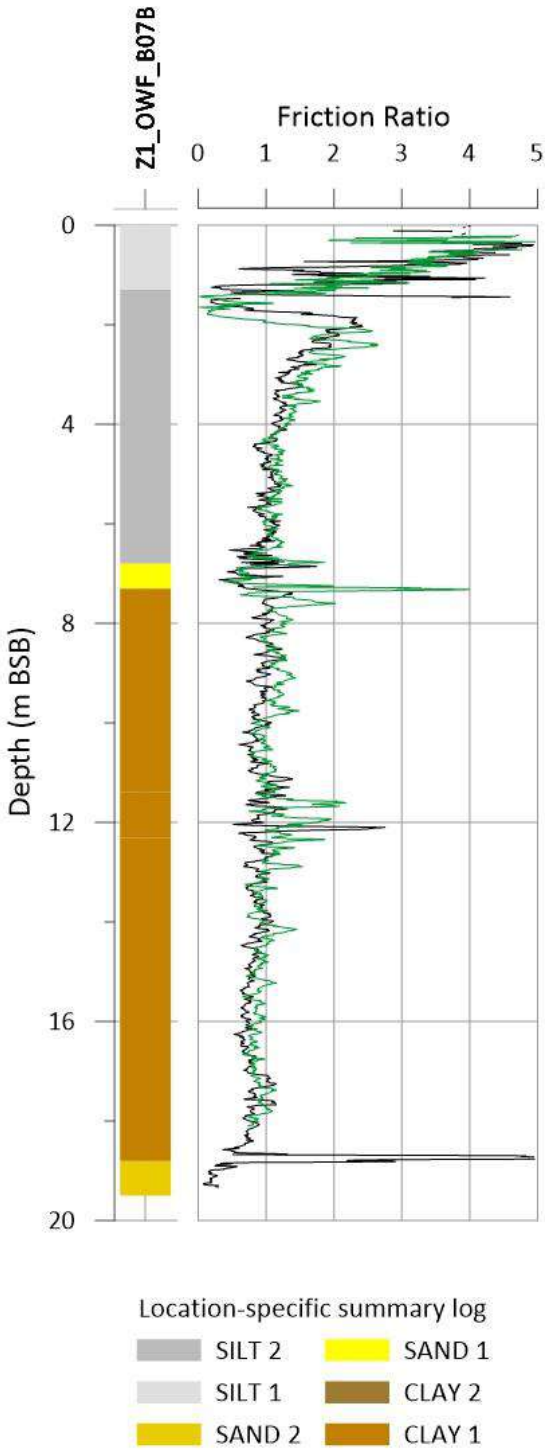


Figure 11-6 Friction ratio for Z1_OWF_B07B.

11.4 LOCATION Z1_OWF_B10

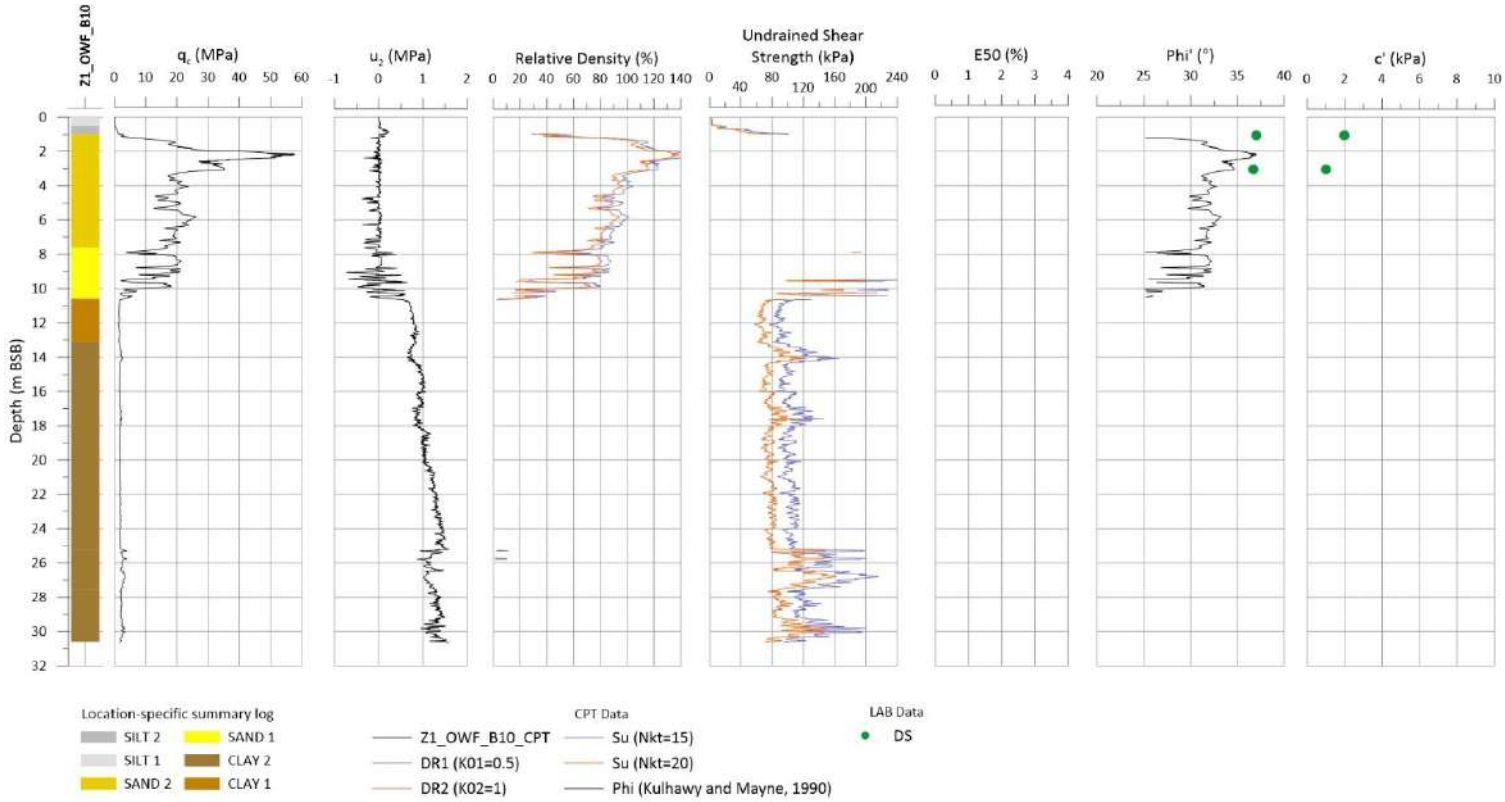


Figure 11-7 qc, u2, relative density, Su, E50, Phi' and c' for Z1_OWF_B10.

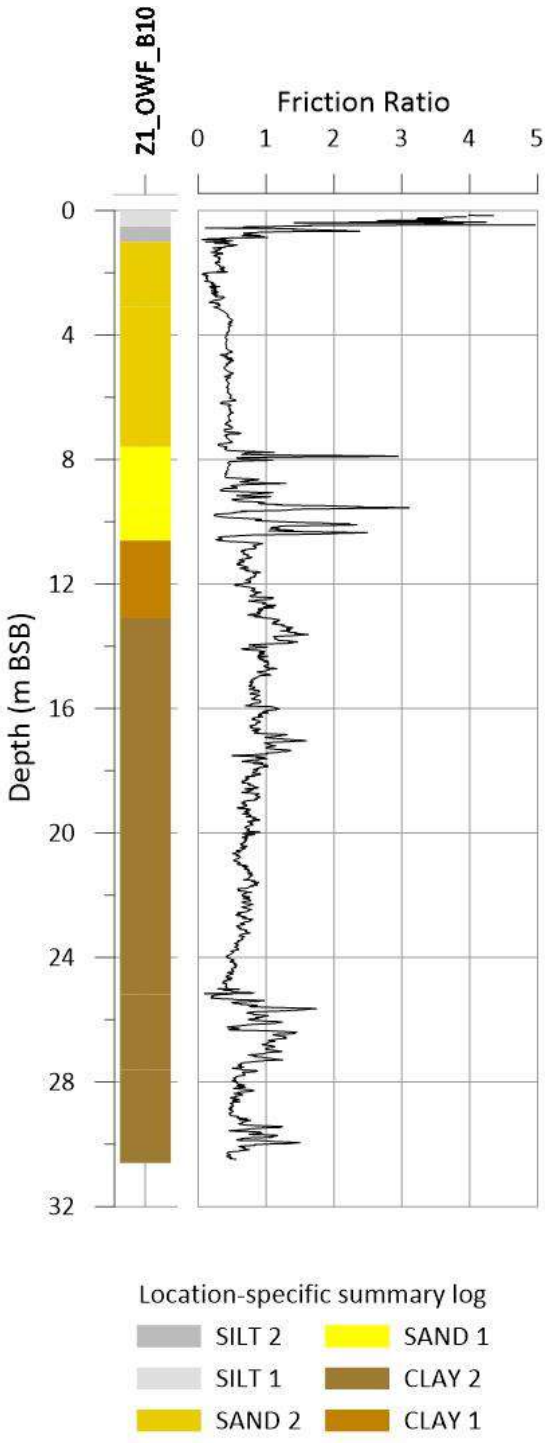


Figure 11-8 Friction ratio for Z1_OWF_B10.

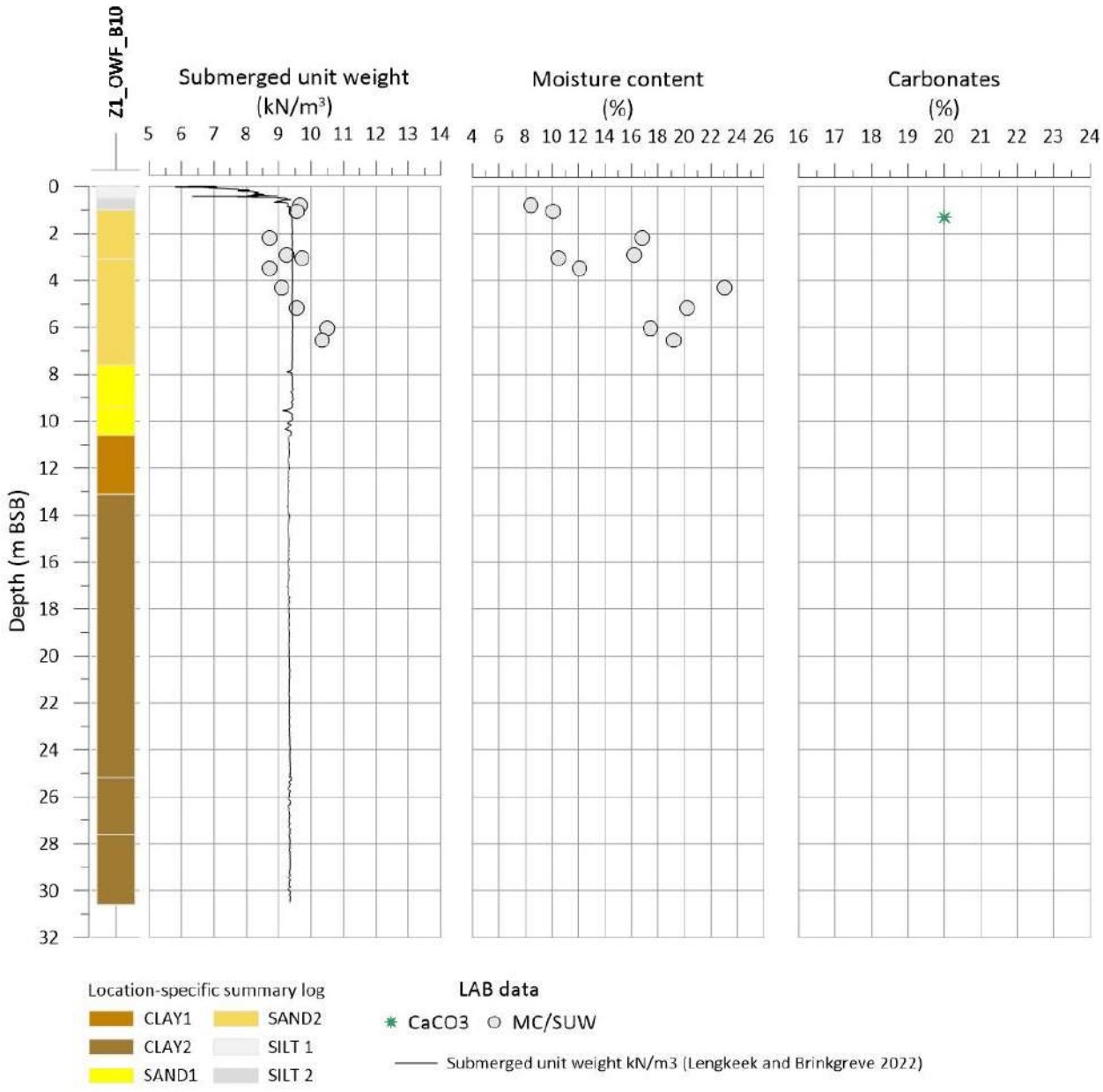


Figure 11-9 Submerged unit weight, moisture content and Carbonate content for Z1_OWF_B10.

11.5 LOCATION Z1_OWF_B14A

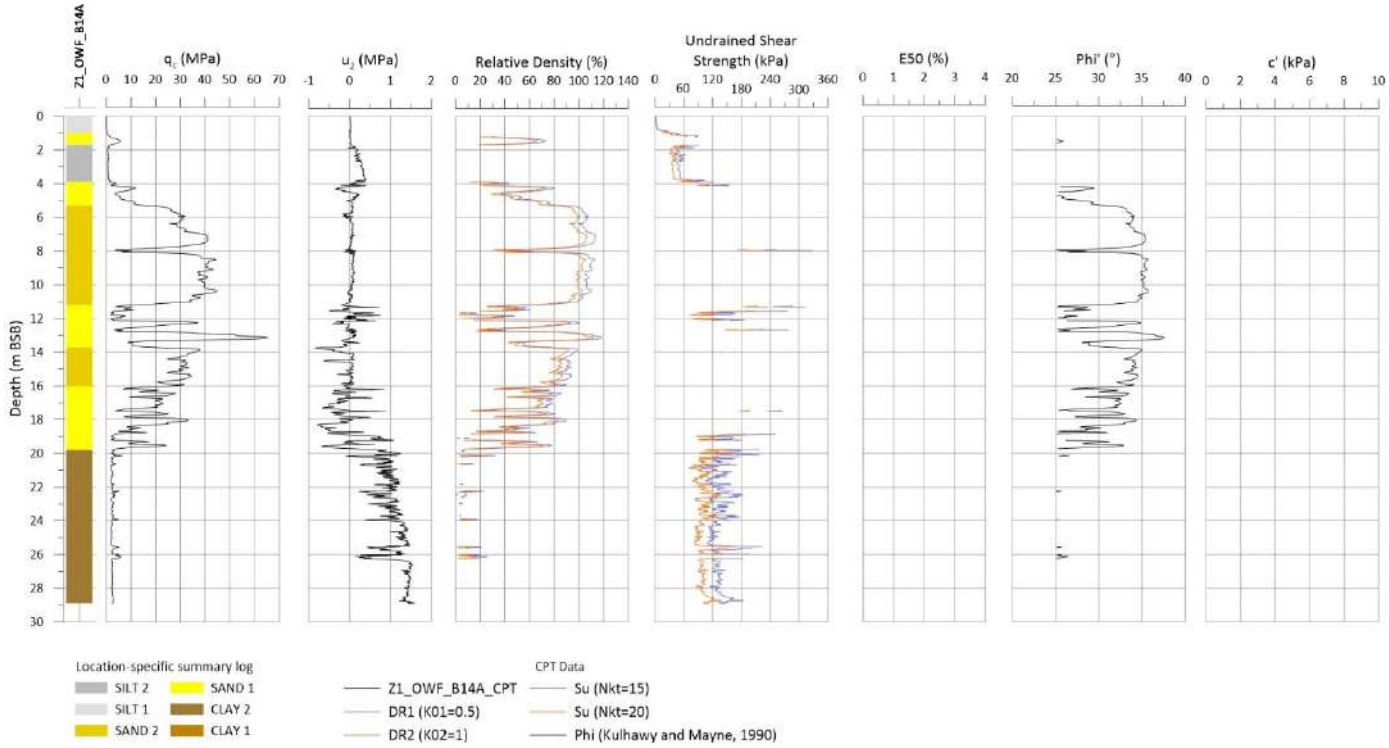


Figure 11-10 qc, u2, relative density, Su, E50, Phi' and c' for Z1_OWF_B14A.

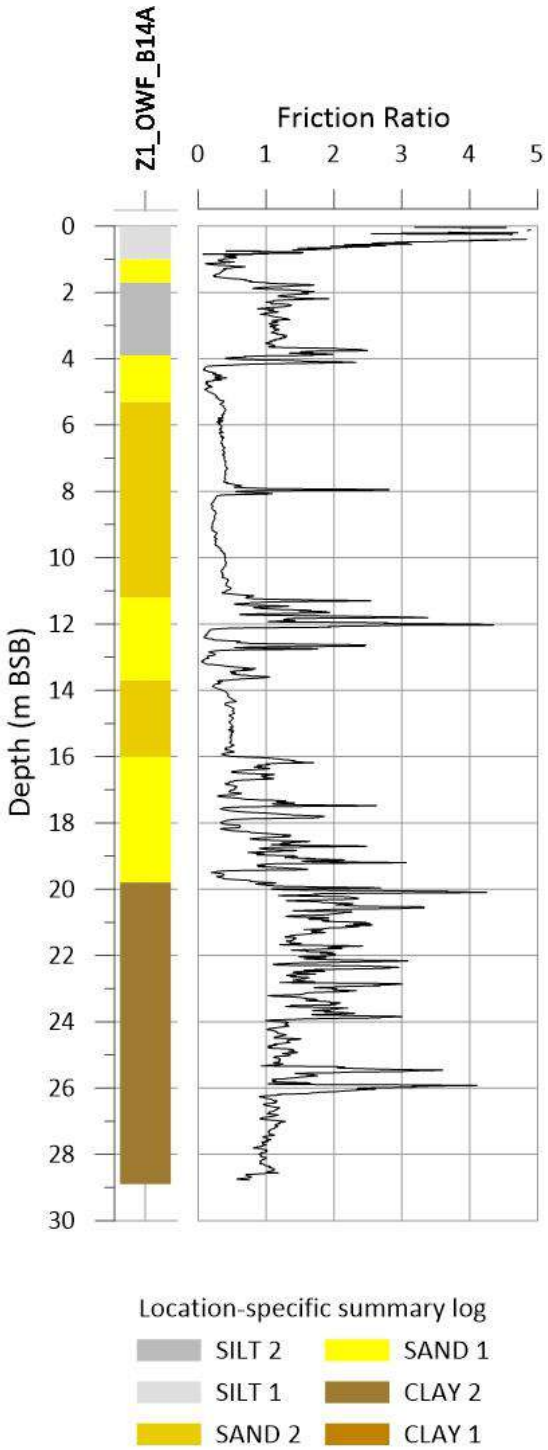


Figure 11-11 Friction ratio for Z1_OWF_B14A.

11.6 LOCATION Z1_OWF_B15

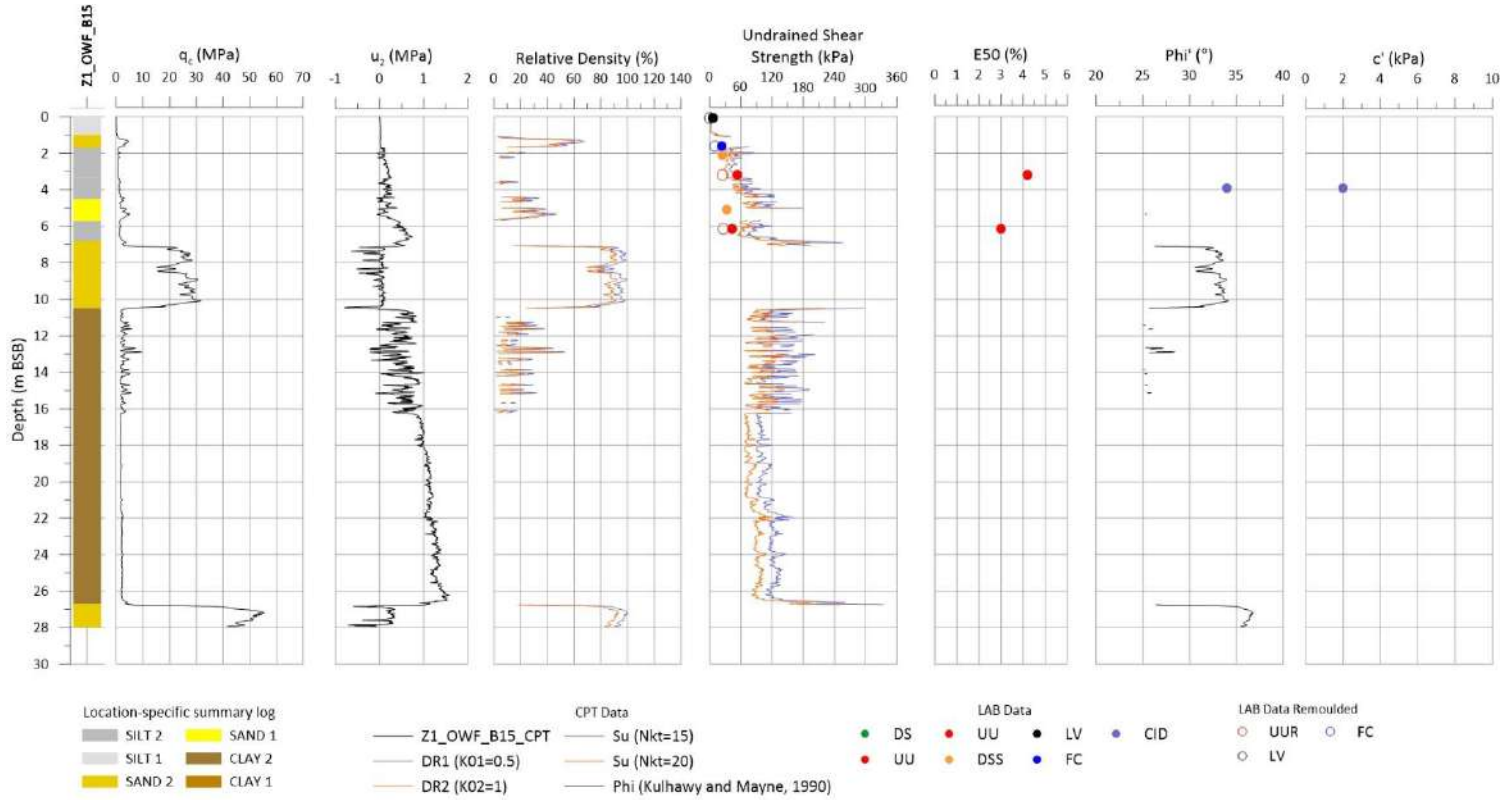


Figure 11-12 qc, u2, relative density, Su, E50, Phi' and c' for Z1_OWF_B15.

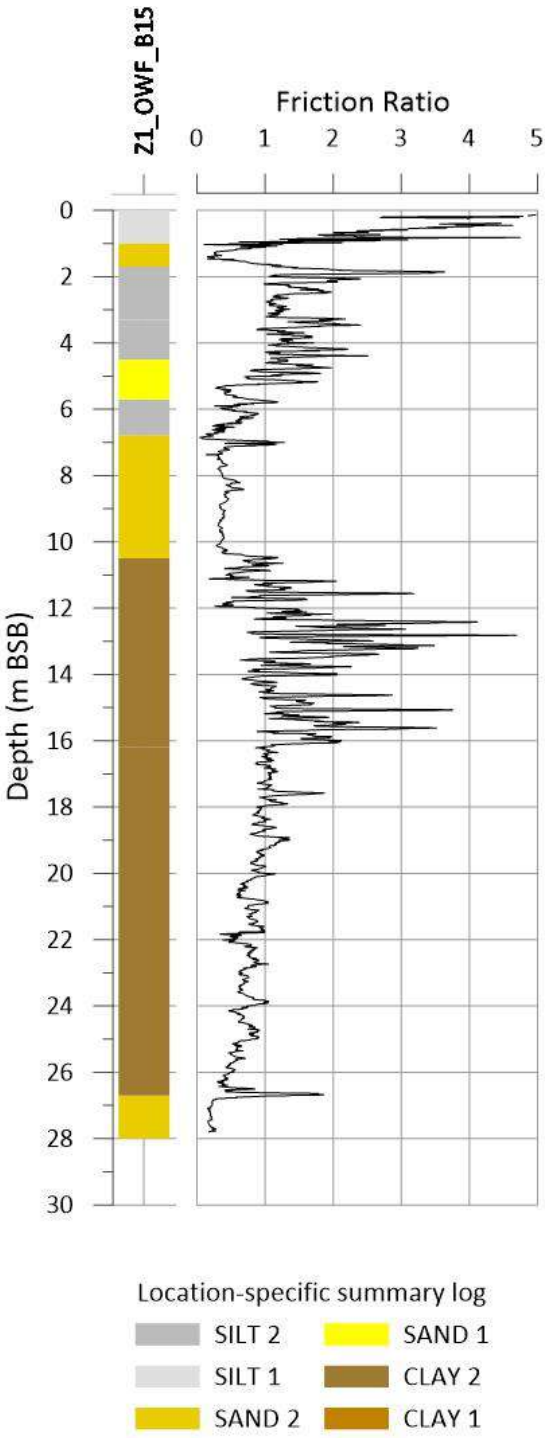


Figure 11-13 Friction ratio for Z1_OWF_B15.

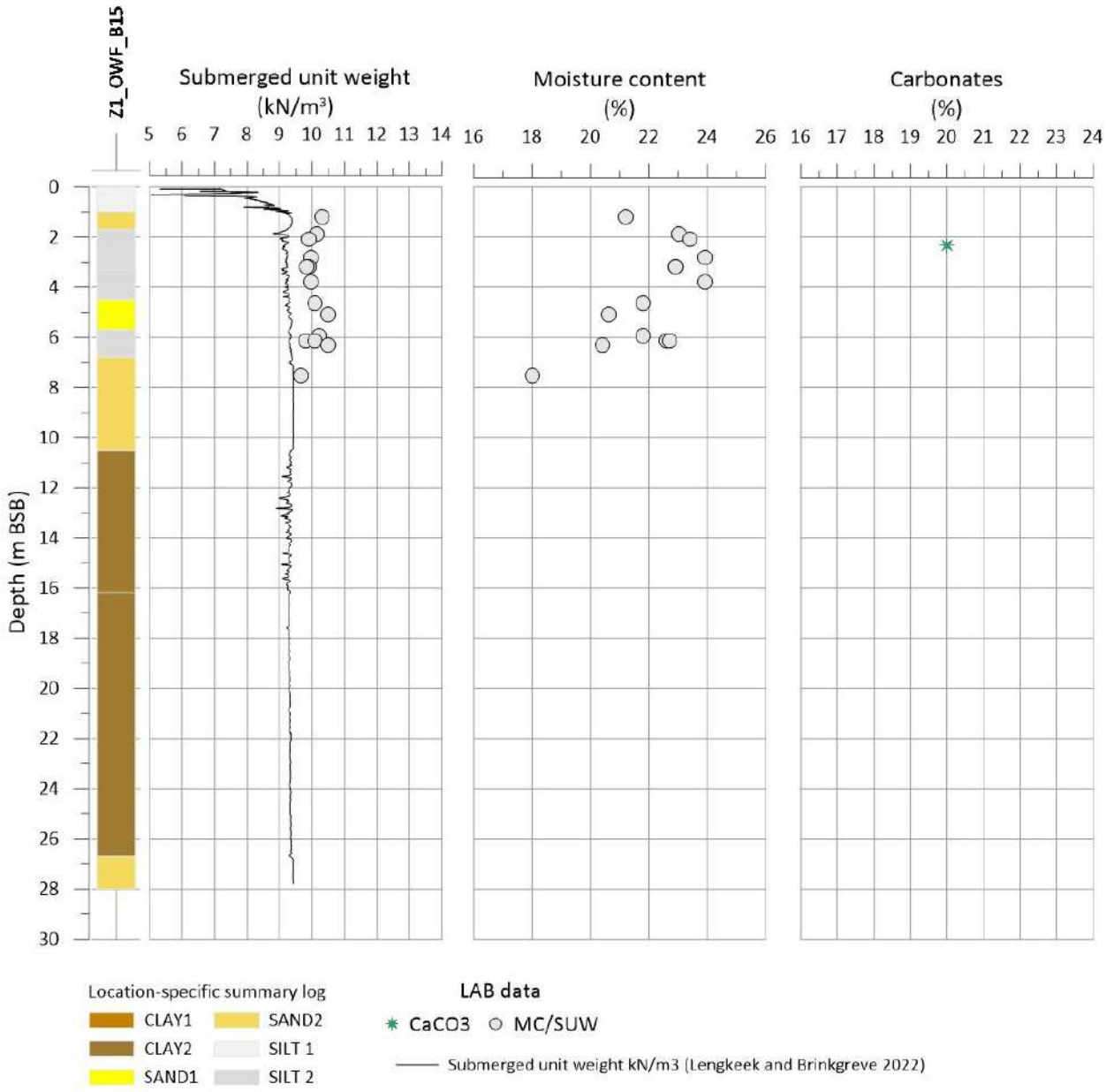


Figure 11-14 Submerged unit weight, moisture content and Carbonate content for Z1_OWF_B15.

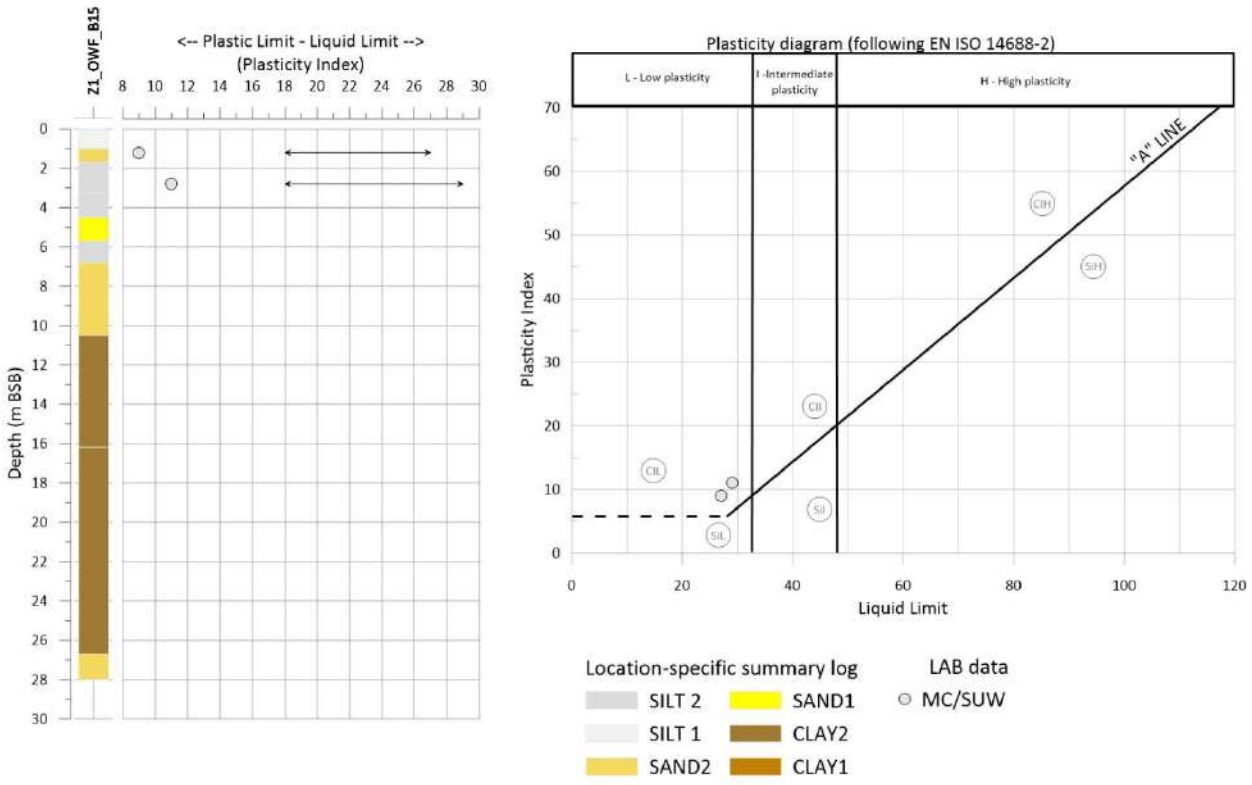


Figure 11-15 Plasticity Z1_OWF_B15.

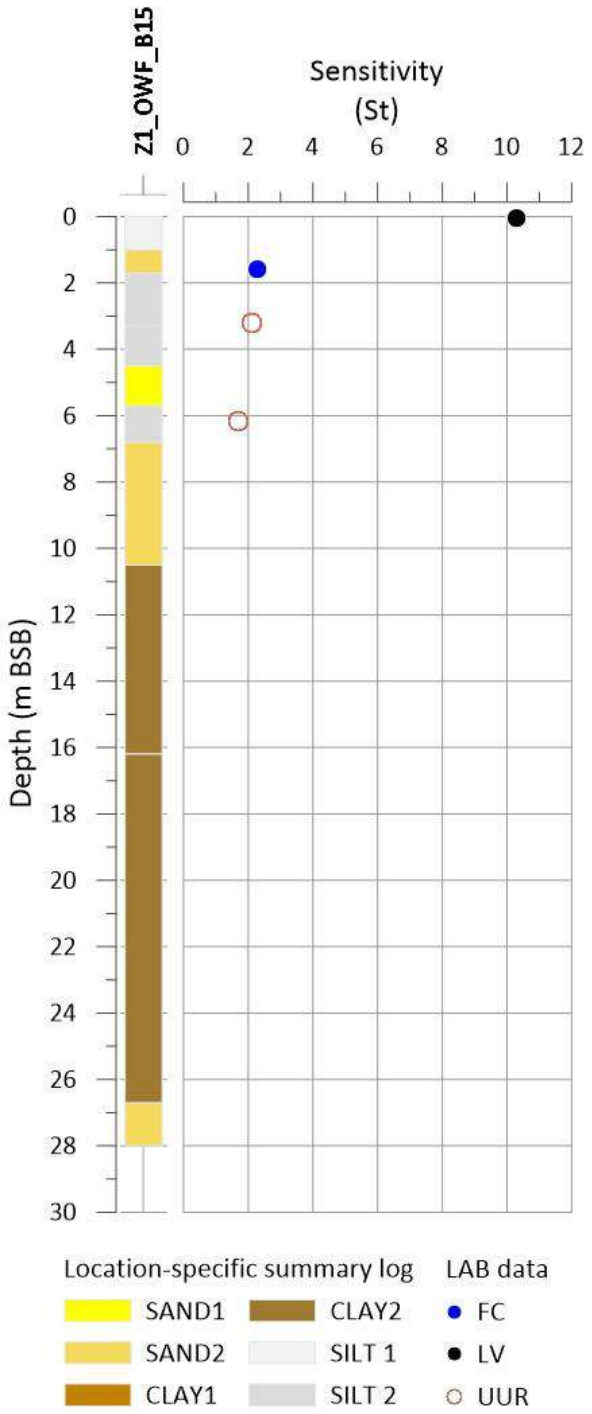


Figure 11-16 Sensitivity for Z1_OWF_B15.

11.7 LOCATION Z1_OWF_B18

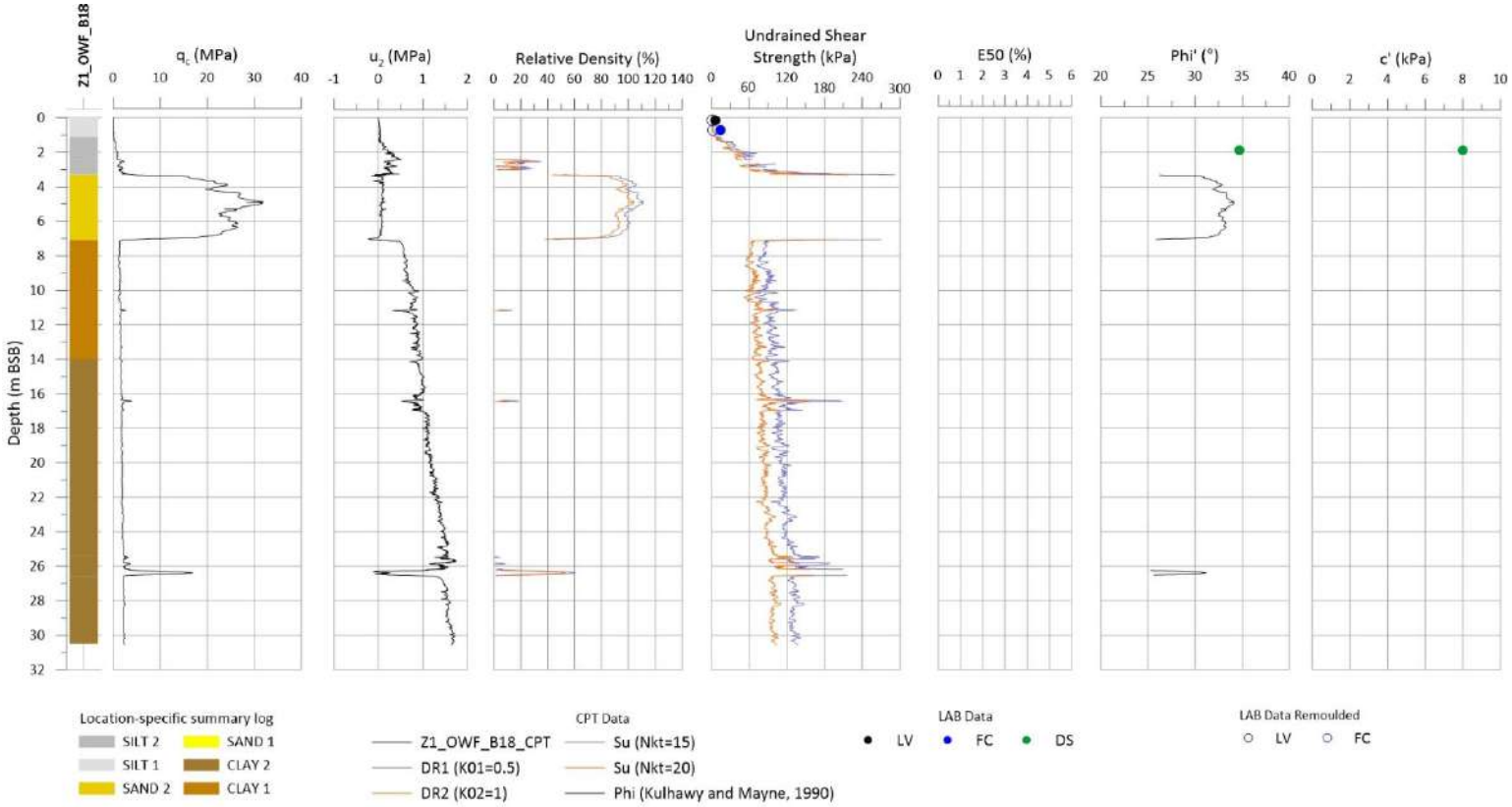


Figure 11-17 qc, u2, relative density, Su, E50, Phi' and c' for Z1_OWF_B18.

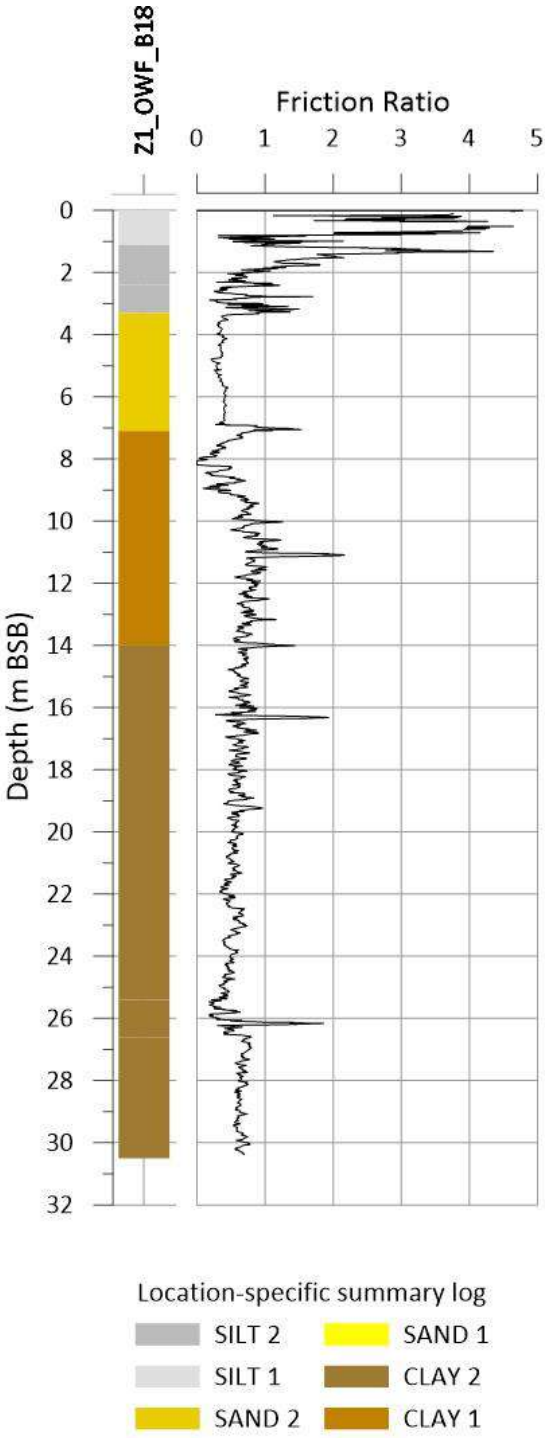


Figure 11-18 Friction ratio for Z1_OWF_B18.

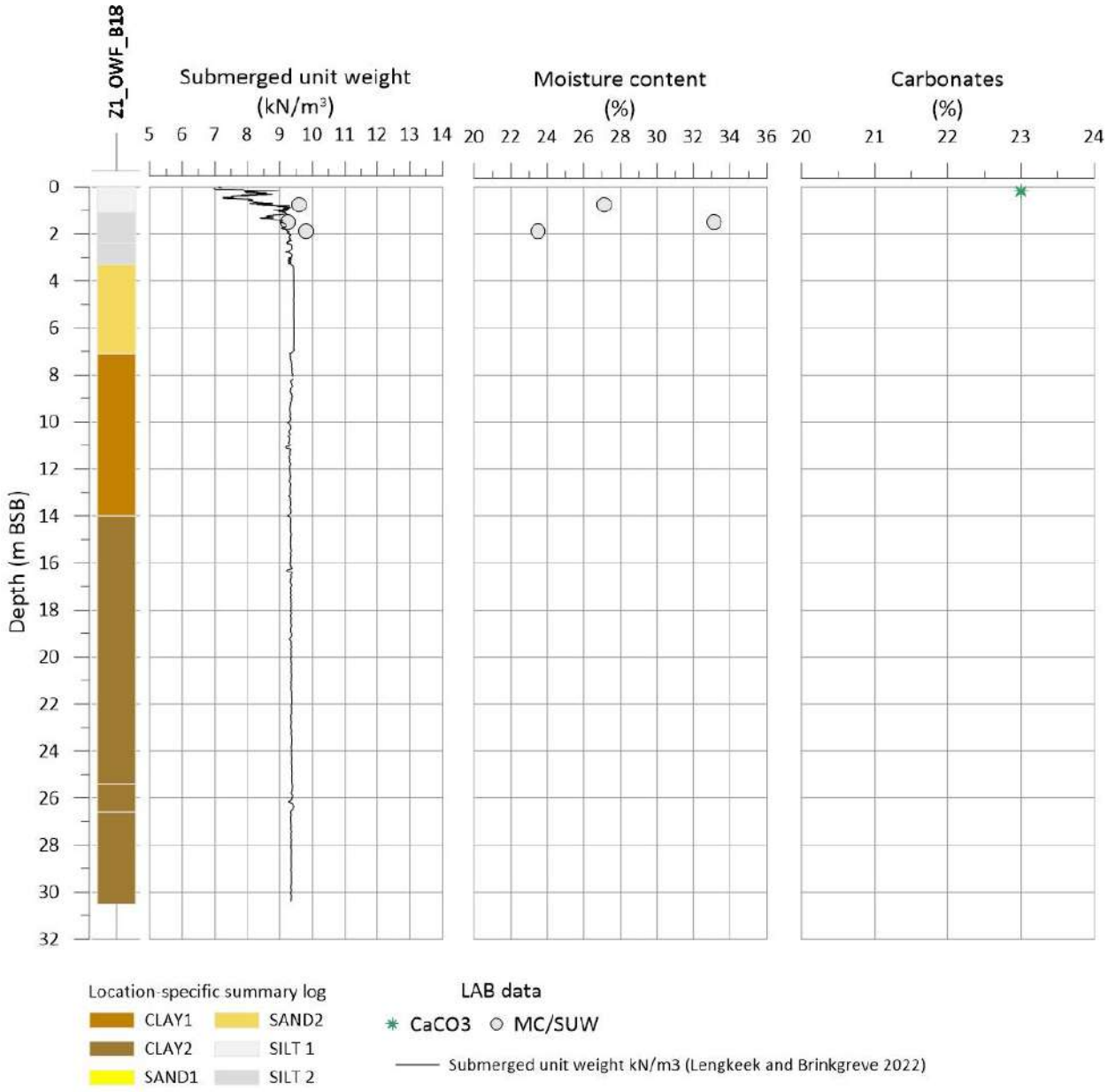


Figure 11-19 Submerged unit weight, moisture content and Carbonate content for Z1_OWF_B18.

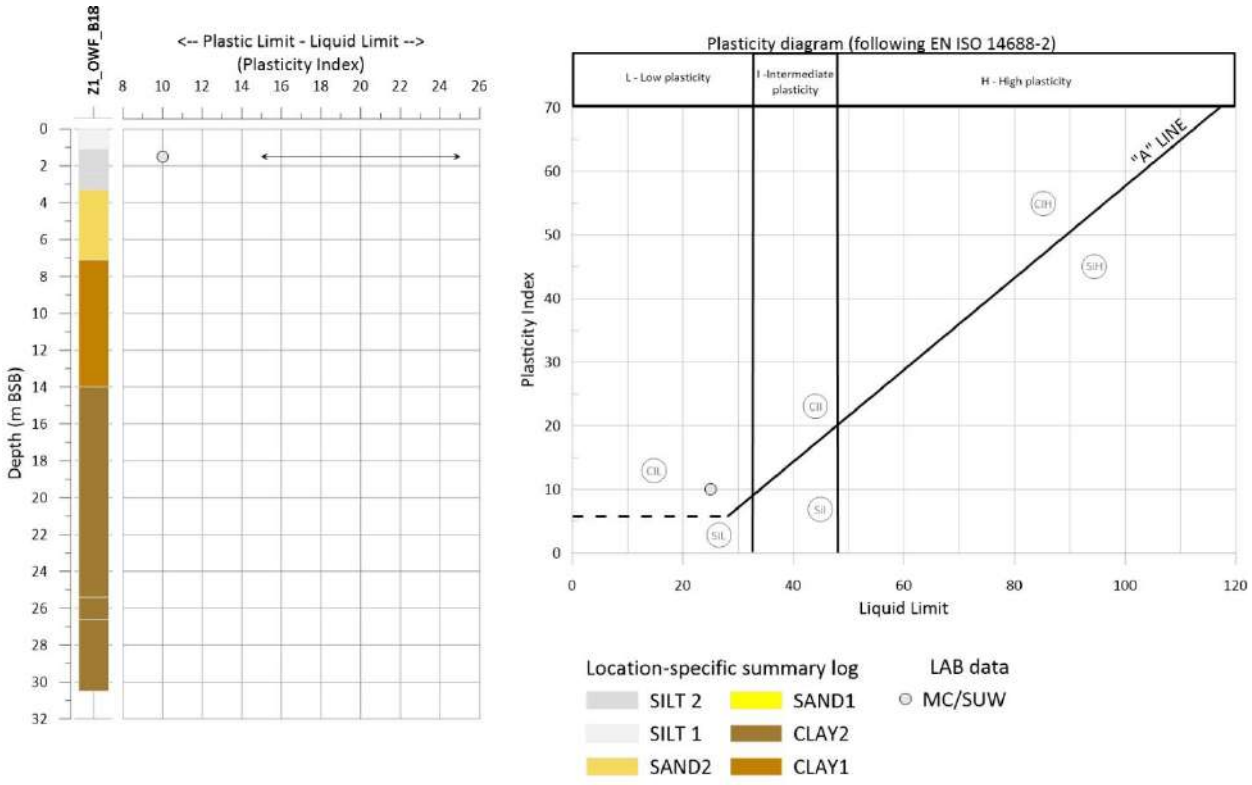


Figure 11-20 Plasticity Z1_OWF_B18.

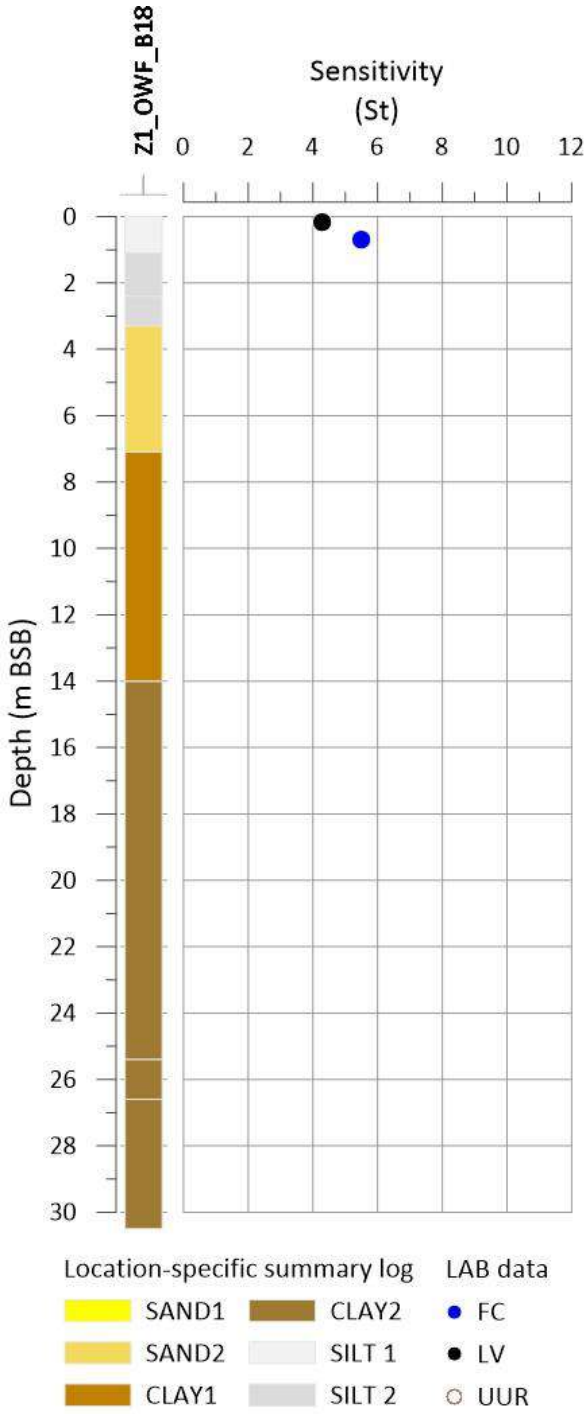


Figure 11-21 Sensitivity for Z1_OWF_B18.

11.8 LOCATION Z1_OWF_B20

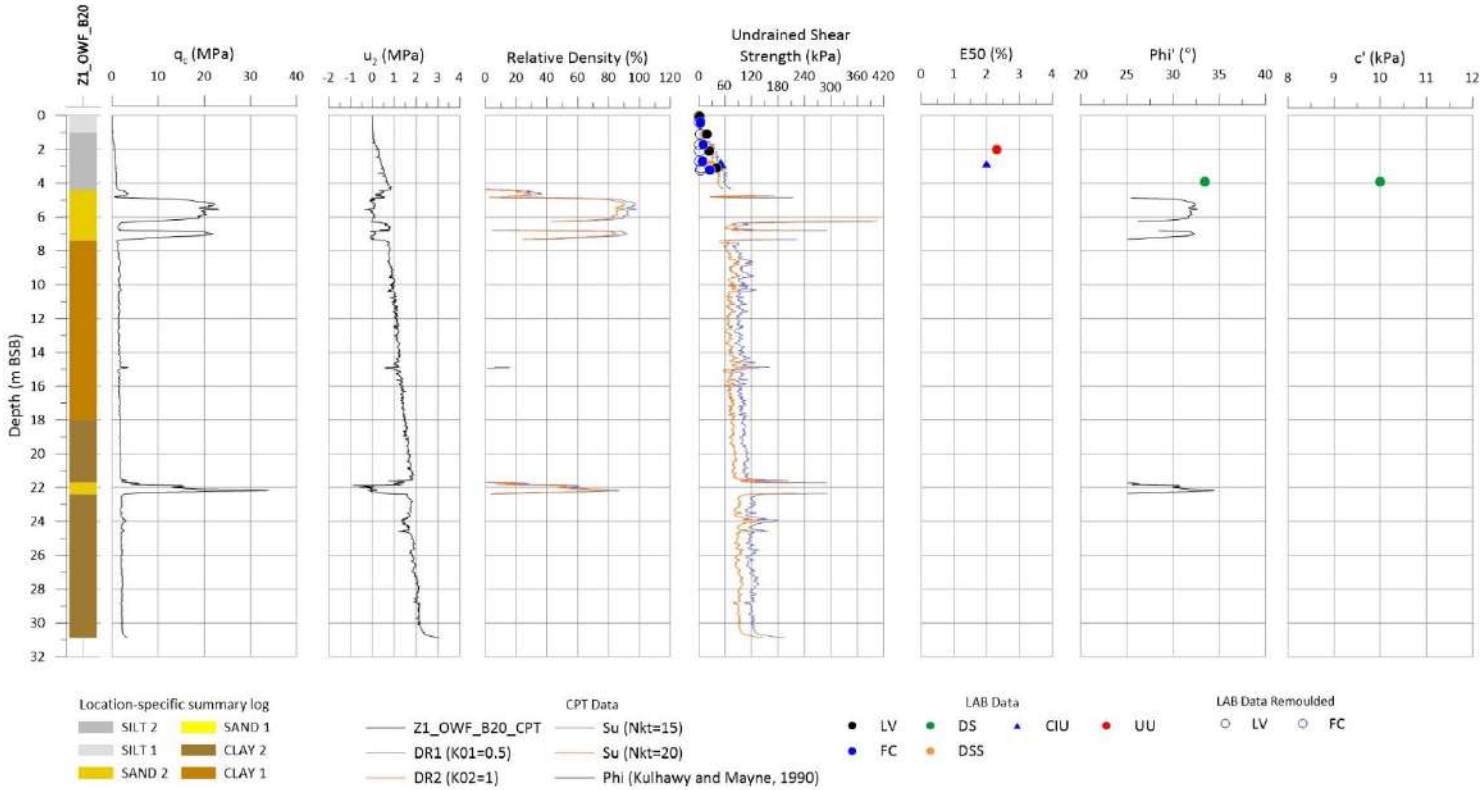


Figure 11-22 qc, u2, relative density, Su, E50, Phi' and c' for Z1_OWF_B20.

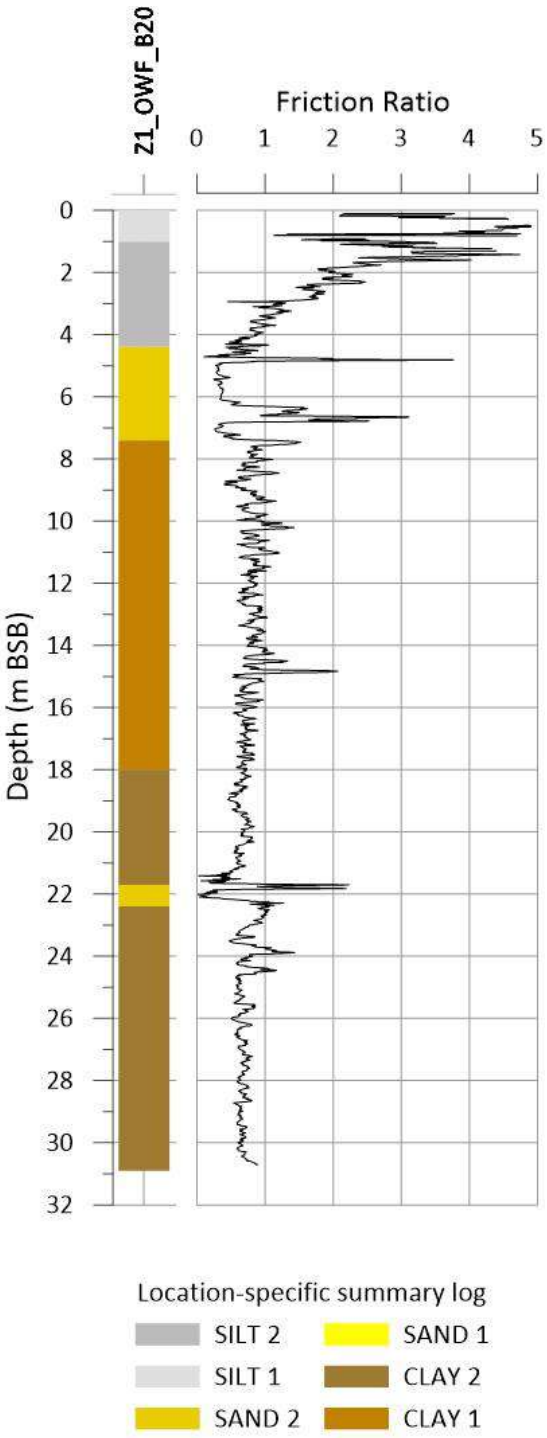


Figure 11-23 Friction ratio for Z1_OWF_B20.

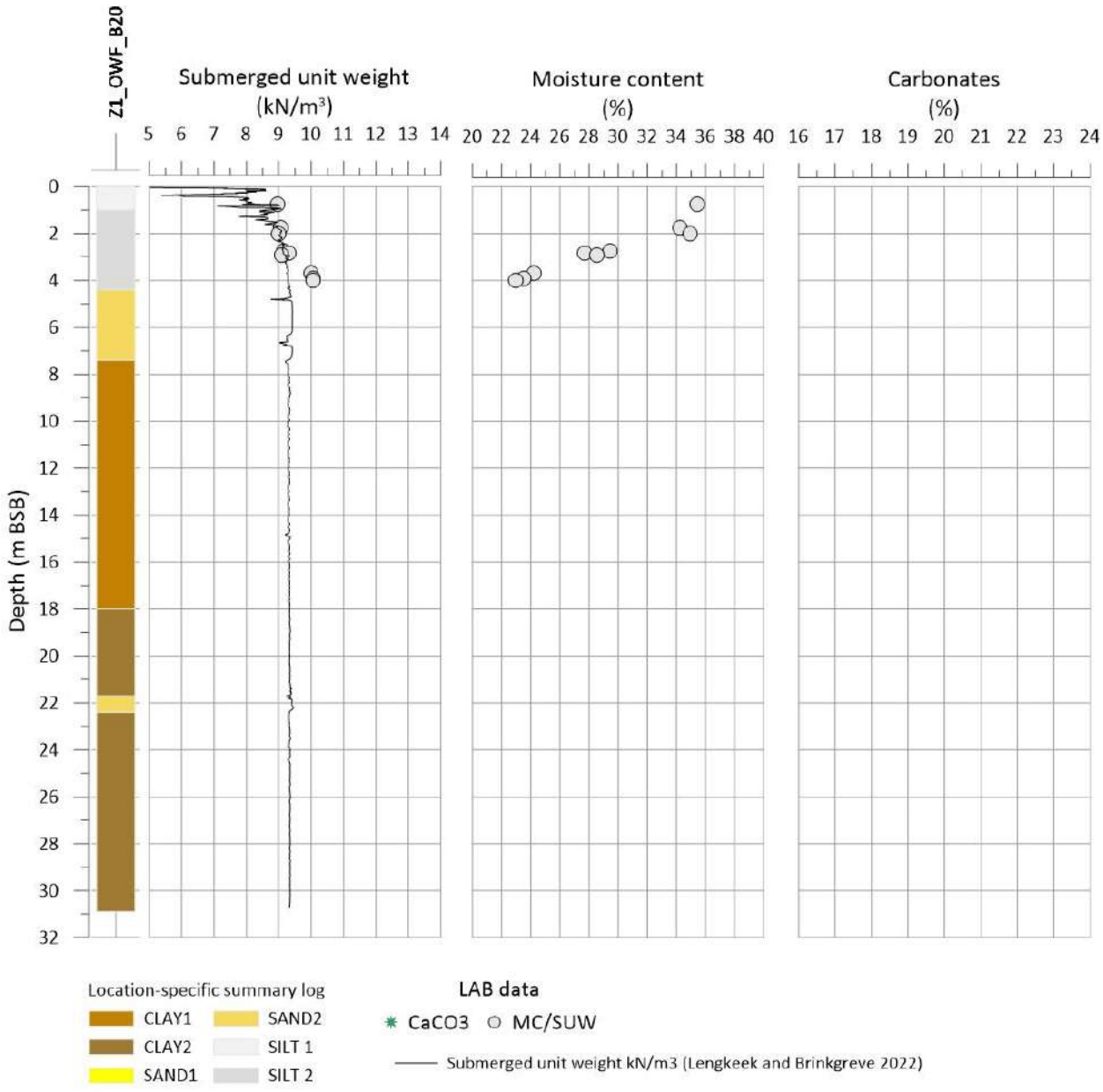


Figure 11-24 Submerged unit weight, moisture content and Carbonate content for Z1_OWF_B20.

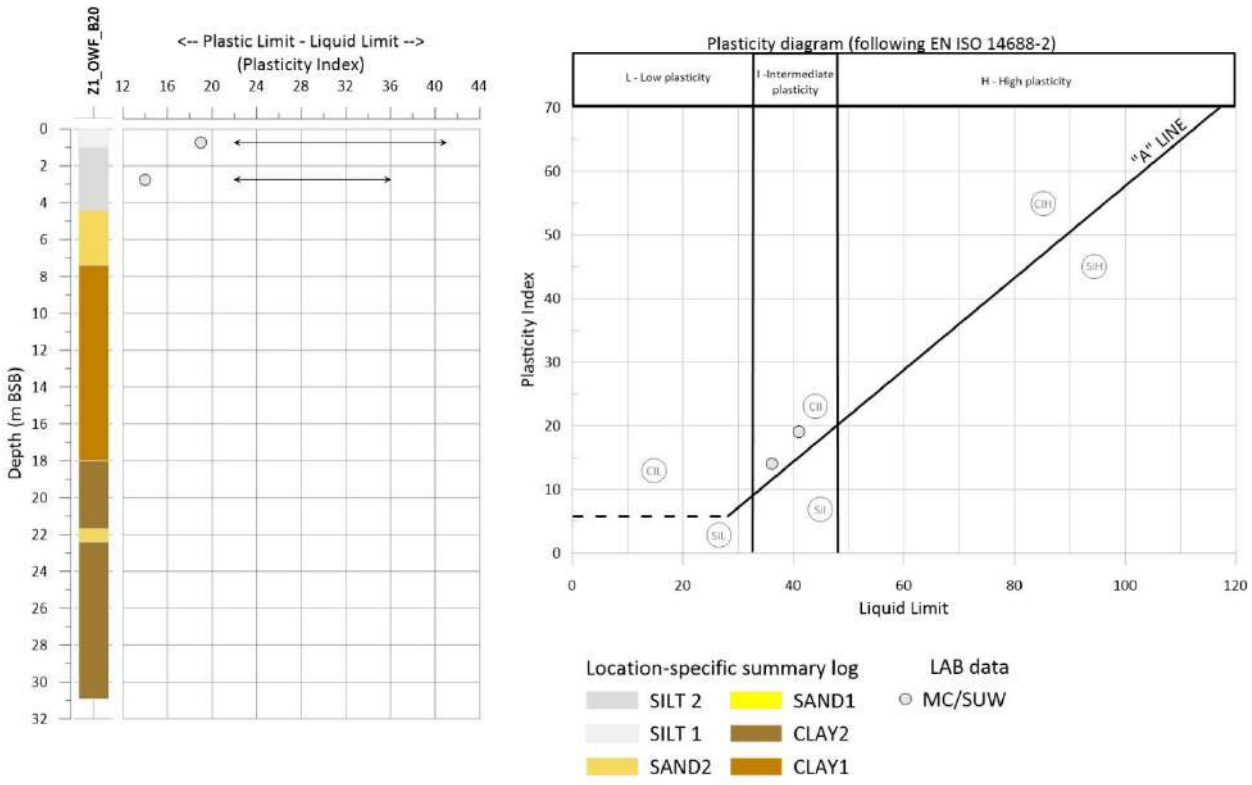


Figure 11-25 Plasticity Z2_OWF_B20.

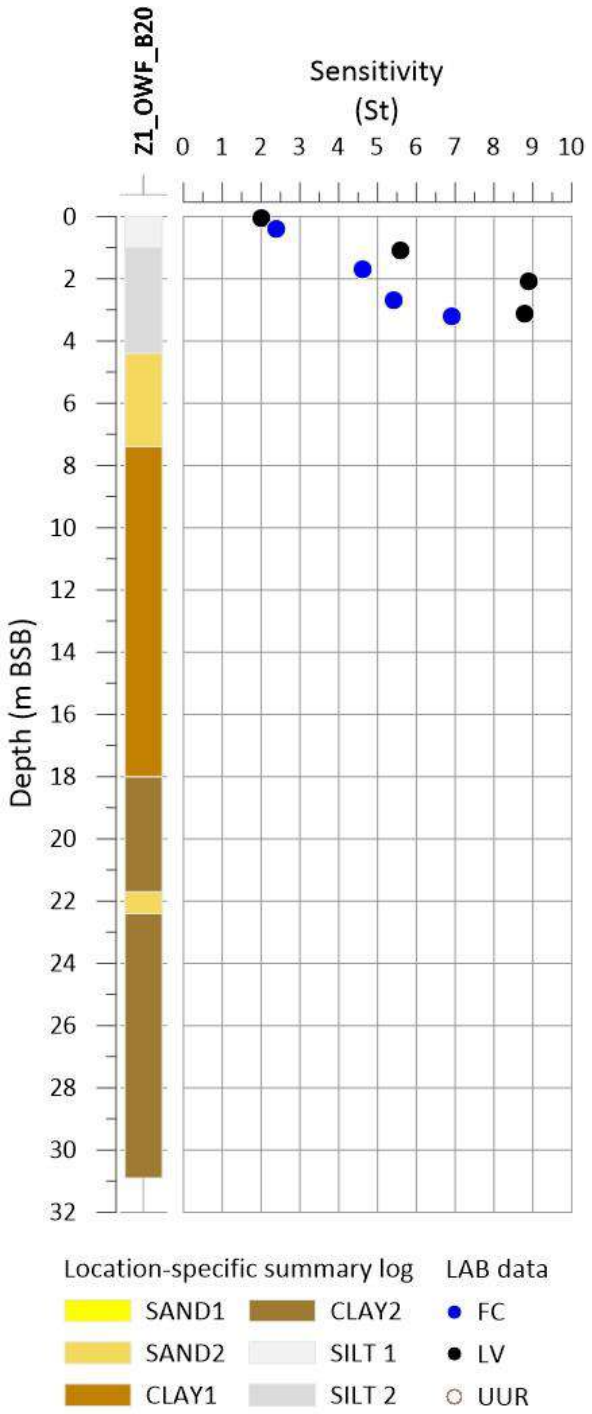


Figure 11-26 Sensitivity for Z1_OWF_B20.

12 CHARTS

The integration of geophysical and geotechnical data is summarized in three groups of charts:

1) North-Up Charts: A total of eleven (11) charts with a north-up view in DIN A1 scaled as 1:35.000 of the entire OWF 1 area (Table 33).
2) UHRS regional profiles: A set of six (6) ultra-high resolution seismic regional profiles that cover the OWF 1 area in four (4) charts (Table 34).
3) Integrated charts on geotechnical locations: A total of eight (8) charts centred on the geotechnical locations that cover an area of 500 x 500 m and are scaled 1:5.000 horizontal (Table 35).

North-up charts are provided in APPENDIX I. UHRS regional profiles are in APPENDIX II. and Integrated charts are in APPENDIX III.

Table 33 North-up charts for the OWF 1 area.

North-Up Chart #	Contents
Chart 1	Bathymetric model
Chart 2	Slope model
Chart 3	SSS & MBES Backscatter mosaics
Chart 4	Seabed features and classification
Chart 5	Base RGT Unit 1
Chart 6	Top RGT Unit 2 depth BSB
Chart 7	Top RGT Unit 3 depth BSB
Chart 8	Top RGT Unit 4 depth BSB
Chart 9	Top RGT Unit 5 depth BSB
Chart 10	Top RGT Unit 6 depth BSB
Chart 11	Top RGT Unit 7 depth BSB

Table 34 UHRS Regional profile charts for the OWF 1 area.

Regional profile Chart #	Contents
Chart 1	MED_OWF_Z1_017
Chart 2	MED_OWF_Z1_013
Chart 3	MED_OWF_Z1_009 & 006
Chart 4	MED_OWF_Z1_016 & 026

Table 35 Integrated charts produced for the OWF 1 area.

Integrated Chart #	Contents
Chart 1	LOCATION Z1_OWF_B02
Chart 2	LOCATION Z1_OWF_B03
Chart 3	LOCATION Z1_OWF_B07
Chart 4	LOCATION Z1_OWF_B10
Chart 5	LOCATION Z1_OWF_B14
Chart 6	LOCATION Z1_OWF_B15
Chart 7	LOCATION Z1_OWF_B18
Chart 8	LOCATION Z1_OWF_B20

13 LIMITATIONS ON USE OF THIS REPORT

This integration report presents the deliverables in accordance with the scope of service contracted by the Client. The purpose of the investigation and any deviations. such as final geophysical line plans and final geotechnical locations coordinates and depths. as well as the extent of the laboratory testing program. was instructed. monitored and agreed by the Client. This was a significant factor in determining the scope and level of the information available for the integration work.
This integration report is based on the geophysical and geotechnical factual data and limitations as referenced herein and acknowledged by the Client prior to the integration work.
Due to the lateral variability associated with the encountered ground conditions, the geotechnical parameters estimate provided are deemed suitable for preliminary foundation sizing in close proximity or generally up to 100 m radius from the geotechnical locations. Ground conditions and soil type distribution. based on ground-truthed horizons. can be extrapolated with caution up to 500 m radius in line with APPENDIX III – INTEGRATED CHARTS.

Charts in APPENDIX II – UHRS REGIONAL PROFILES are provided for a general overview at the regional scale. Due to the UHRS line spacing and distance among the geotechnical locations. these shall be used with caution.

Within the stated limitations. no liability is accepted concerning the provided interpretation and parameters. should ground conditions vary more than is visible in the available dataset (i.e.. changes in the derived strength and density. depth and thickness of the derived units. presence of undetected boulders. etc.).

The end user of this report shall consider the limitations reported in this document and its references. prior to selecting any information and/or parameter as basis of design under their own responsibility.

14 CONCLUSIONS AND RECOMMENDATIONS

This report presents integrated geotechnical units with parameters and seabed conditions for the AO6 OWF Zone 1 area based on the datasets. methods and limitations presented herein.

Prospective wind farm developers may perform concept-level analyses after reviewing and validating the selected information to ensure it fits their purpose. Notwithstanding the aforementioned limitations. the information provided can be used with confidence for a preliminary suction anchor. driven anchor piles. or drag embedment anchor foundation design for floating offshore wind turbines subject to the OWF layout considered. Moreover. The provided information may be further integrated with additional datasets and used in the detailed design phases.

Emphasis and attentive review of geophysical data interpretation with the stated limitation is recommended to evaluate soil conditions distant from the investigated geotechnical locations.

Considering the site extension and laterally variable ground conditions with potential buried channel incisions. additional geophysical acquisition with closely spaced (i.e. 25 m line spacing) 2D UHRS lines may be considered in correspondence with final turbine locations and/or geotechnical locations. Additional MBES. SSS and SBP infill lines may be acquired to further enhance the data set and better inform seabed mapping. smaller (0.3 x 0.3 x 0.3 m) contacts picking. geohazards evaluations. seabed mobility and scour assessments.

The use of advanced geotechnical pile design methodologies would require more specific lab testing to measure soil-steel friction in sands and silts and measure strength anisotropy in clays. Due to the anticipated cyclic load of the OWF turbines, geotechnical cyclic testing may also be required for detailed design.

APPENDIX I – NORTH-UP CHARTS

536000 544000 552000

4765000 4760000 4755000

N

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B05_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
MED_AO6_Z1_OSS_B01
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

-80 -85 -90 -95 -100

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

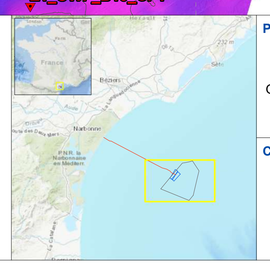
- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

- Isobaths (5m)

Bathymetric model (m):

High : -78.68

Low : -101.85



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	01 / 11
CHART TITLE:	**DATE:**	**SCALE:**
BATHYMETRIC MODEL	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

N

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B08_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
MED_AO6_Z1_OSS_B01
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

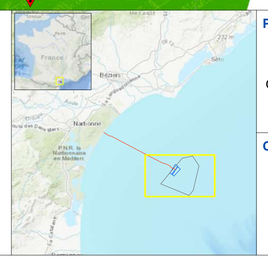
- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

Slope model (degrees):

- 0 - 1
- 1 - 2
- 2 - 5
- 5 - 10
- >10



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	02 / 11
CHART TITLE:	**DATE:**	**SCALE:**
SLOPE MODEL	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000
544000
552000
4765000
4760000
4755000
N
Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B08_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
MED_AO6_Z1_OSS_B01
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

SSS backscatter:

Refelctivity

Higher

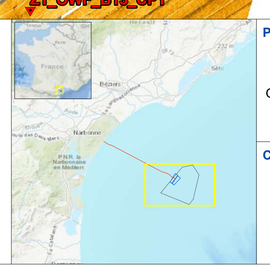
Lower

MBES backscatter (SMF):

Refelctivity

Higher

Lower



PROJECT TITLE:

MED_AO6 ZONE 1 AREA
OFFSHORE WINDFARM
GEOPHYSICAL AND GEOTECHNICAL
INTEGRATION

AREA:

MED_AO6
OWF Zone 1

CHART:

03 / 11

CHART TITLE:

SIDE SCAN SONAR
AND
MBES BACKSCATTER
MOSAICS

DATE:

August 2024

SCALE:

1:35000 DIN A1
1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

N

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B05_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
MED_AO6_Z1_OSS_B01
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

Seabed features (point):

- Anthropic object
- Possible boulder
- Possible carbonate feature
- Seabed mound

Seabed features (line):

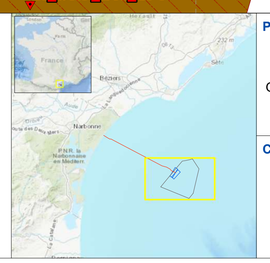
- Escarpment

Seabed features (polygon):

- Depression
- Scours area
- Trawlmarks area

Seabed classification:

- Mud
- Gravelly sand



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	04 / 11
CHART TITLE:	**DATE:**	**SCALE:**
SEABED FEATURES AND SEABED CLASSIFICATION	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000
544000
552000
4765000
4760000
4755000
N
MED_OWF_Z1_031
MED_OWF_Z1_029
MED_OWF_Z1_027
MED_OWF_Z1_025
MED_OWF_Z1_023
MED_OWF_Z1_021
MED_OWF_Z1_017
MED_OWF_Z1_015
MED_OWF_Z1_013
MED_OWF_Z1_011
MED_OWF_Z1_009
MED_OWF_Z1_007
MED_OWF_Z1_005
MED_OWF_Z1_003
MED_OWF_Z1_001
MED_OWF_Z1_000
MED_OWF_Z1_002
MED_OWF_Z1_004
MED_OWF_Z1_006
MED_OWF_Z1_008
MED_OWF_Z1_010
MED_OWF_Z1_012
MED_OWF_Z1_014
MED_OWF_Z1_016
MED_OWF_Z1_018
MED_OWF_Z1_020
MED_OWF_Z1_022
MED_OWF_Z1_024
MED_OWF_Z1_026
MED_OWF_Z1_028
MED_OWF_Z1_030
MED_OWF_Z1_032
MED_OWF_Z1_014A
MED_OWF_Z1_019A
Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B08_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
MED_AO6_Z1_OSS_B01
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT
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MED_OSSE_Z1_002A
MED_OSSE_Z1_004
MED_OSSE_Z1_006
MED_OSSE_Z1_008
MED_OSSE_Z1_010
MED_OSSE_Z1_012
MED_OSSE_Z1_014
MED_OSSE_Z1_016
MED_OSSE_Z1_018
MED_OSSE_Z1_020
MED_OSSE_Z1_022
MED_OSSE_Z1_035A
MED_OSSE_Z1_033A
MED_OSSE_Z1_031A
MED_OSSE_Z1_029A
MED_OSSE_Z1_027A
MED_OSSE_Z1_025A
MED_OSSE_Z1_023
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MED_OSSE_Z1_019
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MED_OSSE_Z1_011
MED_OSSE_Z1_009
MED_OSSE_Z1_007
MED_OSSE_Z1_005
MED_OSSE_Z1_003
MED_OSSE_Z1_001
MED_OSSE_Z1_037
MED_OSSE_Z1_007A

RTE
MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

- OSS
- OWF

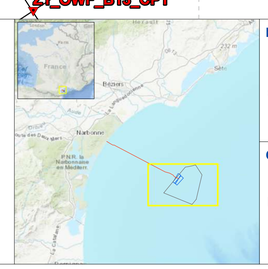
Base of RGT Unit 1 depth BSB contours:

- Major contour (1m)
- Minor contour (0.5m)

Base of RGT Unit 1 in Depth BSB (m):

High : 3.73

Low : 0.10



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	05 / 11
CHART TITLE:	**DATE:**	**SCALE:**
BASE OF REGIONAL GEOTECHNICAL UNIT 1 DEPTH BELOW SEABED	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

N

MED_OWF_Z1_031 MED_OWF_Z1_014A MED_OWF_Z1_029 MED_OWF_Z1_027 MED_OWF_Z1_025 MED_OWF_Z1_023 MED_OWF_Z1_021 MED_OWF_Z1_000 MED_OWF_Z1_002 MED_OWF_Z1_019 MED_OWF_Z1_019A MED_OWF_Z1_017 MED_OWF_Z1_004 MED_OWF_Z1_015 MED_OWF_Z1_013 MED_OWF_Z1_006 MED_OWF_Z1_011 MED_OWF_Z1_008 MED_OWF_Z1_009 MED_OWF_Z1_010 MED_OWF_Z1_007 MED_OWF_Z1_005 MED_OWF_Z1_012 MED_OWF_Z1_014 MED_OWF_Z1_003 MED_OWF_Z1_016 MED_OWF_Z1_018 MED_OWF_Z1_001 MED_OWF_Z1_020 MED_OWF_Z1_022 MED_OWF_Z1_024 MED_OWF_Z1_026 MED_OWF_Z1_028 MED_OWF_Z1_030 MED_OWF_Z1_032

MED_OSSE_Z1_035A MED_OSSE_Z1_033A MED_OSSE_Z1_031A MED_OSSE_Z1_029A MED_OSSE_Z1_027A MED_OSSE_Z1_025A MED_OSSE_Z1_023 MED_OSSE_Z1_021 MED_OSSE_Z1_019 MED_OSSE_Z1_017 MED_OSSE_Z1_015 MED_OSSE_Z1_013 MED_OSSE_Z1_011 MED_OSSE_Z1_009 MED_OSSE_Z1_007 MED_OSSE_Z1_005 MED_OSSE_Z1_003 MED_OSSE_Z1_001 MED_OSSE_Z1_037 MED_OSSE_Z1_000 MED_OSSE_Z1_002A MED_OSSE_Z1_004 MED_OSSE_Z1_006 MED_OSSE_Z1_008 MED_OSSE_Z1_010 MED_OSSE_Z1_012 MED_OSSE_Z1_014 MED_OSSE_Z1_016 MED_OSSE_Z1_018 MED_OSSE_Z1_020 MED_OSSE_Z1_022 MED_OSSE_Z1_007A

MED_AO6_Z1_OSS_B01

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B08_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0,25 0,5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

- OSS
- OWF

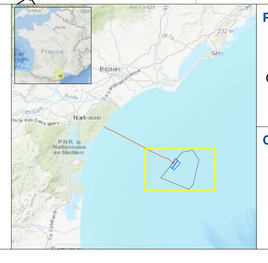
Top of RGT Unit 2 depth BSB contours:

- Major contour (1m)
- Minor contour (0.5m)

Top of RGT Unit 2 in Depth BSB (m):

High : 6.61

Low : 0.44



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	06 / 11

CHART TITLE:	DATE:	SCALE:
TOP OF REGIONAL GEOTECHNICAL UNIT 2 DEPTH BELOW SEABED	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

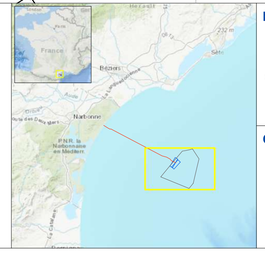
N

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B08_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
MED_AO6_Z1_OSS_B01
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

MED_OWF_Z1_031 MED_OWF_Z1_014A MED_OWF_Z1_029 MED_OWF_Z1_027 MED_OWF_Z1_025 MED_OWF_Z1_032 MED_OWF_Z1_030 MED_OWF_Z1_028 MED_OWF_Z1_026 MED_OWF_Z1_024 MED_OWF_Z1_022 MED_OWF_Z1_020 MED_OWF_Z1_018 MED_OWF_Z1_016 MED_OWF_Z1_001 MED_OWF_Z1_003 MED_OWF_Z1_005 MED_OWF_Z1_012 MED_OWF_Z1_014 MED_OWF_Z1_007 MED_OWF_Z1_010 MED_OWF_Z1_009 MED_OWF_Z1_006 MED_OWF_Z1_011 MED_OWF_Z1_008 MED_OWF_Z1_013 MED_OWF_Z1_004 MED_OWF_Z1_015 MED_OWF_Z1_017 MED_OWF_Z1_002 MED_OWF_Z1_019 MED_OWF_Z1_000 MED_OWF_Z1_021 MED_OWF_Z1_023 MED_OWF_Z1_019A

MED_OSSE_Z1_035A MED_OSSE_Z1_033A MED_OSSE_Z1_031A MED_OSSE_Z1_029A MED_OSSE_Z1_027A MED_OSSE_Z1_025A MED_OSSE_Z1_023 MED_OSSE_Z1_021 MED_OSSE_Z1_019 MED_OSSE_Z1_017 MED_OSSE_Z1_015 MED_OSSE_Z1_013 MED_OSSE_Z1_011 MED_OSSE_Z1_009 MED_OSSE_Z1_007 MED_OSSE_Z1_005 MED_OSSE_Z1_003 MED_OSSE_Z1_001 MED_OSSE_Z1_037 MED_OSSE_Z1_000 MED_OSSE_Z1_002A MED_OSSE_Z1_004 MED_OSSE_Z1_006 MED_OSSE_Z1_008 MED_OSSE_Z1_010 MED_OSSE_Z1_012 MED_OSSE_Z1_014 MED_OSSE_Z1_016 MED_OSSE_Z1_018 MED_OSSE_Z1_020 MED_OSSE_Z1_022 MED_OSSE_Z1_007A

2 3 4



GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

- OSS
- OWF

Top of RGT Unit 3 depth BSB contours:

- Major contour (2m)
- Minor contour (1m)

Top of RGT Unit 3 in Depth BSB (m):

High : 4.15

Low : 0.02

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	07 / 11
CHART TITLE:	**DATE:**	**SCALE:**
TOP OF REGIONAL GEOTECHNICAL UNIT 3 DEPTH BELOW SEABED	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

N

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B08_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
MED_AO6_Z1_OSS_B01
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B02B_CPT
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

MED_OWF_Z1_031 MED_OWF_Z1_029 MED_OWF_Z1_027 MED_OWF_Z1_025 MED_OWF_Z1_023 MED_OWF_Z1_021 MED_OWF_Z1_000 MED_OWF_Z1_002 MED_OWF_Z1_019 MED_OWF_Z1_014A MED_OWF_Z1_019A MED_OWF_Z1_017 MED_OWF_Z1_015 MED_OWF_Z1_004 MED_OWF_Z1_013 MED_OWF_Z1_006 MED_OWF_Z1_011 MED_OWF_Z1_008 MED_OWF_Z1_009 MED_OWF_Z1_010 MED_OWF_Z1_007 MED_OWF_Z1_005 MED_OWF_Z1_012 MED_OWF_Z1_003 MED_OWF_Z1_014 MED_OWF_Z1_016 MED_OWF_Z1_001 MED_OWF_Z1_018 MED_OWF_Z1_020 MED_OWF_Z1_022 MED_OWF_Z1_024 MED_OWF_Z1_026 MED_OWF_Z1_028 MED_OWF_Z1_030 MED_OWF_Z1_032

MED_OSSE_Z1_035A MED_OSSE_Z1_033A MED_OSSE_Z1_031A MED_OSSE_Z1_029A MED_OSSE_Z1_027A MED_OSSE_Z1_025A MED_OSSE_Z1_023 MED_OSSE_Z1_021 MED_OSSE_Z1_019 MED_OSSE_Z1_017 MED_OSSE_Z1_015 MED_OSSE_Z1_013B MED_OSSE_Z1_011 MED_OSSE_Z1_009 MED_OSSE_Z1_007 MED_OSSE_Z1_005 MED_OSSE_Z1_003 MED_OSSE_Z1_001 MED_OSSE_Z1_037 MED_OSSE_Z1_000 MED_OSSE_Z1_002A MED_OSSE_Z1_004 MED_OSSE_Z1_006 MED_OSSE_Z1_008 MED_OSSE_Z1_010 MED_OSSE_Z1_012 MED_OSSE_Z1_014 MED_OSSE_Z1_016 MED_OSSE_Z1_018 MED_OSSE_Z1_020 MED_OSSE_Z1_022 MED_OSSE_Z1_007A

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

- OSS
- OWF

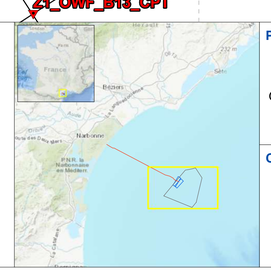
Top of RGT Unit 4 depth BSB contours:

- Major contour (2m)
- Minor contour (1m)

Top of RGT Unit 4 in Depth BSB (m):

High : 11.20

Low : 0.52



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	08 / 11
CHART TITLE:	**DATE:**	**SCALE:**
TOP OF REGIONAL GEOTECHNICAL UNIT 4 DEPTH BELOW SEABED	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

N

MED_OWF_Z1_031 MED_OWF_Z1_014A MED_OWF_Z1_029 MED_OWF_Z1_027 MED_OWF_Z1_025 MED_OWF_Z1_023 MED_OWF_Z1_021 MED_OWF_Z1_000 MED_OWF_Z1_002 MED_OWF_Z1_019 MED_OWF_Z1_017 MED_OWF_Z1_004 MED_OWF_Z1_015 MED_OWF_Z1_013 MED_OWF_Z1_006 MED_OWF_Z1_011 MED_OWF_Z1_008 MED_OWF_Z1_009 MED_OWF_Z1_010 MED_OWF_Z1_007 MED_OWF_Z1_005 MED_OWF_Z1_012 MED_OWF_Z1_003 MED_OWF_Z1_014 MED_OWF_Z1_016 MED_OWF_Z1_018 MED_OWF_Z1_001 MED_OWF_Z1_020 MED_OWF_Z1_022 MED_OWF_Z1_024 MED_OWF_Z1_026 MED_OWF_Z1_028 MED_OWF_Z1_030 MED_OWF_Z1_032

MED_OSSE_Z1_035A MED_OSSE_Z1_038A MED_OSSE_Z1_031A MED_OSSE_Z1_029A MED_OSSE_Z1_027A MED_OSSE_Z1_023A MED_OSSE_Z1_024 MED_OSSE_Z1_019 MED_OSSE_Z1_017 MED_OSSE_Z1_015 MED_OSSE_Z1_014B MED_OSSE_Z1_011 MED_OSSE_Z1_009 MED_OSSE_Z1_007 MED_OSSE_Z1_005 MED_OSSE_Z1_003 MED_OSSE_Z1_001 MED_OSSE_Z1_037 MED_OSSE_Z1_000 MED_OSSE_Z1_002A MED_OSSE_Z1_004 MED_OSSE_Z1_006 MED_OSSE_Z1_008 MED_OSSE_Z1_010 MED_OSSE_Z1_012 MED_OSSE_Z1_014 MED_OSSE_Z1_016 MED_OSSE_Z1_018 MED_OSSE_Z1_020 MED_OSSE_Z1_022 MED_OSSE_Z1_007A

MED_AO6_Z1_OSS_B01

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B05_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

- OSS
- OWF

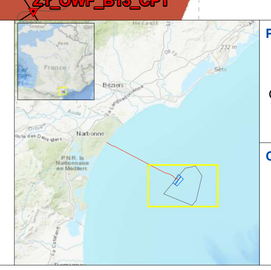
Top of RGT Unit 5 depth BSB contours:

- Major contour (5m)
- Minor contour (2m)

Top of RGT Unit 5 in Depth BSB (m):

High : 32.36

Low : 1.77



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	09 / 11
CHART TITLE:	**DATE:**	**SCALE:**
TOP OF REGIONAL GEOTECHNICAL UNIT 5 DEPTH BELOW SEABED	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

N

MED_OWF_Z1_031 MED_OWF_Z1_014A MED_OWF_Z1_029 MED_OWF_Z1_027 MED_OWF_Z1_025 MED_OWF_Z1_023 MED_OWF_Z1_021 MED_OWF_Z1_000 MED_OWF_Z1_002 MED_OWF_Z1_019 MED_OWF_Z1_019A MED_OWF_Z1_017 MED_OWF_Z1_004A MED_OWF_Z1_015 MED_OWF_Z1_013 MED_OWF_Z1_006 MED_OWF_Z1_011 MED_OWF_Z1_008 MED_OWF_Z1_009 MED_OWF_Z1_010 MED_OWF_Z1_007 MED_OWF_Z1_005 MED_OWF_Z1_012 MED_OWF_Z1_003 MED_OWF_Z1_014 MED_OWF_Z1_016 MED_OWF_Z1_018 MED_OWF_Z1_001 MED_OWF_Z1_020 MED_OWF_Z1_022 MED_OWF_Z1_024 MED_OWF_Z1_026 MED_OWF_Z1_028 MED_OWF_Z1_030 MED_OWF_Z1_032

MED_OSSE_Z1_035A MED_OSSE_Z1_038A MED_OSSE_Z1_031A MED_OSSE_Z1_029A MED_OSSE_Z1_027A MED_OSSE_Z1_023A MED_OSSE_Z1_024 MED_OSSE_Z1_019 MED_OSSE_Z1_017 MED_OSSE_Z1_016 MED_OSSE_Z1_015 MED_OSSE_Z1_011 MED_OSSE_Z1_009 MED_OSSE_Z1_007 MED_OSSE_Z1_005 MED_OSSE_Z1_003 MED_OSSE_Z1_001 MED_OSSE_Z1_037 MED_OSSE_Z1_000 MED_OSSE_Z1_002A MED_OSSE_Z1_004 MED_OSSE_Z1_006 MED_OSSE_Z1_008 MED_OSSE_Z1_010 MED_OSSE_Z1_012 MED_OSSE_Z1_014 MED_OSSE_Z1_018 MED_OSSE_Z1_020 MED_OSSE_Z1_022 MED_OSSE_Z1_007A

MED_AO6_Z1_OSS_B01

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B05_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B16_CPT
Z1_OWF_B16_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT

TECNOAMBIENTE
A TRADEBE COMPANY

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

- OSS
- OWF

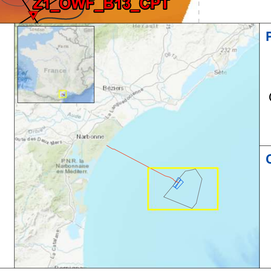
Top of RGT Unit 6 depth BSB contours:

- Major contour (5m)
- Minor contour (2m)

Top of RGT Unit 6 in Depth BSB (m):

High : 35.01

Low : 11.33



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	10 / 11
CHART TITLE:	**DATE:**	**SCALE:**
TOP OF REGIONAL GEOTECHNICAL UNIT 6 DEPTH BELOW SEABED	August 2024	1:35000 DIN A1 1:70000 DIN A3

536000 544000 552000

4765000 4760000 4755000

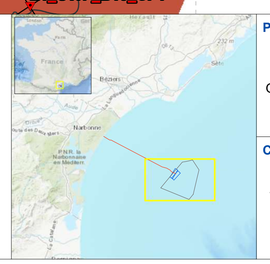
N

MED_OWF_Z1_031 MED_OWF_Z1_029 MED_OWF_Z1_027 MED_OWF_Z1_025 MED_OWF_Z1_023 MED_OWF_Z1_021 MED_OWF_Z1_000 MED_OWF_Z1_002 MED_OWF_Z1_019 MED_OWF_Z1_014A MED_OWF_Z1_017 MED_OWF_Z1_015 MED_OWF_Z1_004 MED_OWF_Z1_019A MED_OWF_Z1_013 MED_OWF_Z1_006 MED_OWF_Z1_011 MED_OWF_Z1_009 MED_OWF_Z1_007 MED_OWF_Z1_005 MED_OWF_Z1_012 MED_OWF_Z1_003 MED_OWF_Z1_014 MED_OWF_Z1_016 MED_OWF_Z1_001 MED_OWF_Z1_018 MED_OWF_Z1_020 MED_OWF_Z1_022 MED_OWF_Z1_024 MED_OWF_Z1_026 MED_OWF_Z1_028 MED_OWF_Z1_030 MED_OWF_Z1_032

MED_OSSE_Z1_035A MED_OSSE_Z1_033A MED_OSSE_Z1_031A MED_OSSE_Z1_029A MED_OSSE_Z1_027A MED_OSSE_Z1_025A MED_OSSE_Z1_024 MED_OSSE_Z1_019 MED_OSSE_Z1_017 MED_OSSE_Z1_015 MED_OSSE_Z1_014B MED_OSSE_Z1_011 MED_OSSE_Z1_009 MED_OSSE_Z1_007 MED_OSSE_Z1_005 MED_OSSE_Z1_003 MED_OSSE_Z1_001 MED_OSSE_Z1_037 MED_OSSE_Z1_000 MED_OSSE_Z1_002A MED_OSSE_Z1_004 MED_OSSE_Z1_006 MED_OSSE_Z1_008 MED_OSSE_Z1_010 MED_OSSE_Z1_012 MED_OSSE_Z1_014 MED_OSSE_Z1_016 MED_OSSE_Z1_018 MED_OSSE_Z1_020 MED_OSSE_Z1_022 MED_OSSE_Z1_007A

MED_AO6_Z1_OSS_B01

Z1_OWF_B07_CPT
Z1_OWF_B07B_CPTa
Z1_OWF_B05_CPT
Z1_OWF_B05_PC
Z1_OWF_B20_CPT
Z1_OWF_B20A_PC
Z1_OWF_B10_VC
Z1_OWF_B10_CPT
Z1_OWF_B01B_CPT
Z1_OWF_B01B_CPTa
Z1_OWF_B01A_PC
Z1_OWF_B18_CPT
Z1_OWF_B18_PC
Z1_OWF_B02B_CPT
Z1_OWF_B15_CPT
Z1_OWF_B15_VC
Z1_OWF_B03_CPT
Z1_OWF_B03_CPTa
Z1_OWF_B14A_CPT
Z1_OWF_B13_CPT



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 750 1500 3000 m

0 0.25 0.5 1 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- Composite
- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

- OSS
- OWF

Top of RGT Unit 7 depth BSB contours:

- Major contour (5m)
- Minor contour (2m)

Top of RGT Unit 7 in Depth BSB (m):

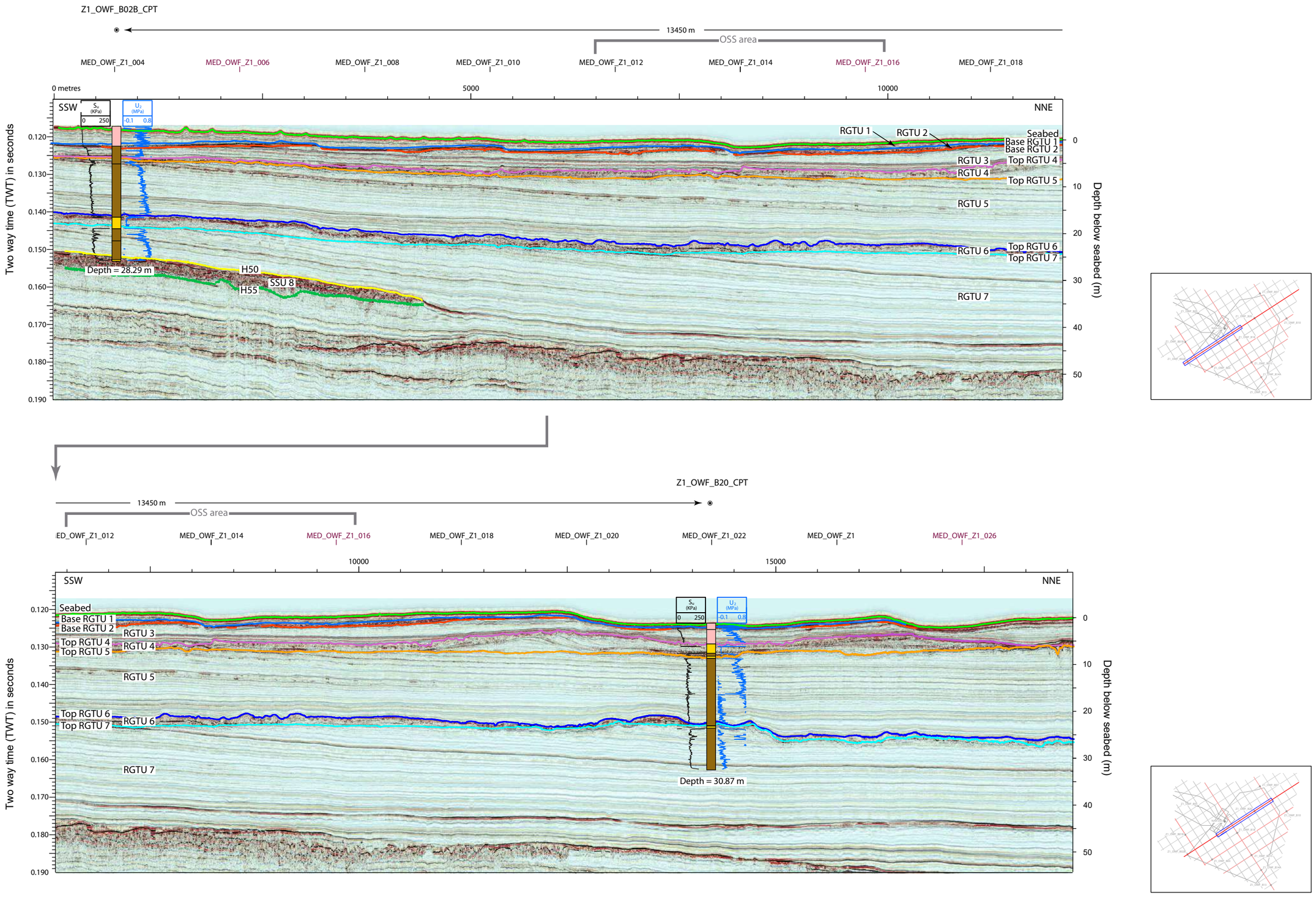
High : 48.07

Low : 14.17

PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	11 / 11
CHART TITLE:	**DATE:**	**SCALE:**
TOP OF REGIONAL GEOTECHNICAL UNIT 7 DEPTH BELOW SEABED	August 2024	1:35000 DIN A1 1:70000 DIN A3

APPENDIX II – UHRS REGIONAL PROFILES

Line MED_OWF_Z1_017



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

CARTOGRAPHIC INFORMATION

Elevation referred to Bathyelly v2 Geoid ZH/ell

GRAPHIC SCALE: Scales as shown on profile

DATUM: WGS84

PROJECTION: UTM 31N

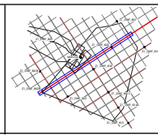
DATE: August 2024

COMMENTS: ---

LEGEND:

- Sand
- Silt
- Clay
- Sand & Clay
- Seabed
- Base RGTU 1
- Base RGTU 2
- Top RGTU 4
- H12 - Channels
- Top RGTU 5
- Top RGTU 6
- Top RGTU 7
- UHRS - Z2 H50
- UHRS - Z2 H55

Depth conversions were under taken using an assumed sesimic velocity (ASV) of 1600 m/s



PROJECT TITLE: Geophysical Survey MED A06 OWF 1 Area

AREA: MED

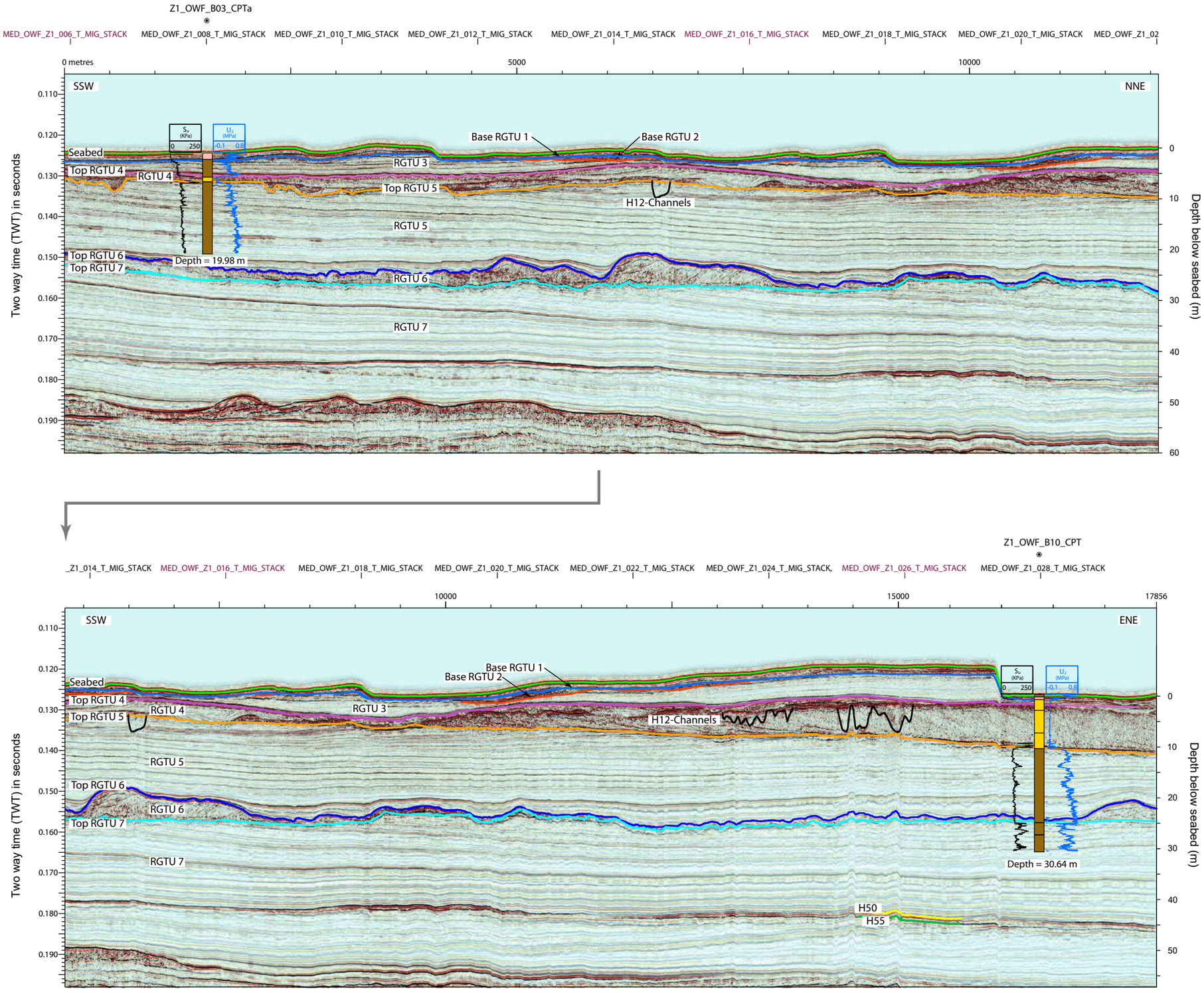
CHART: 1 of 4

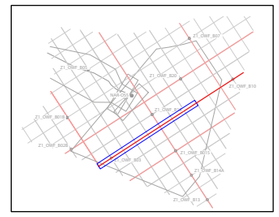
CHART TITLE: MED AO6 OWF 1 Profiles

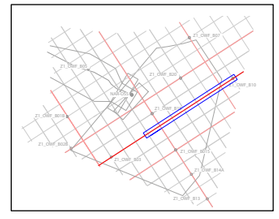
REFERENCE: ---

SCALE: Indicated in charts

Line MED_OWF_Z1_013







MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE A TRADEBE COMPANY

CARTOGRAPHIC INFORMATION

Elevation referred to Bathyelly v2 Geoid ZH/ell

GRAPHIC SCALE: Scales as shown on profile

DATUM: WGS84

PROJECTION: UTM 31N

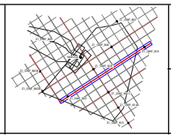
DATE: August 2024

COMMENTS: ---

LEGEND:

- Sand
- Silt
- Clay
- Sand & Clay
- Seabed
- Base RGTU 1
- Base RGTU 2
- Top RGTU 4
- H12 - Channels
- Top RGTU 5
- Top RGTU 6
- Top RGTU 7
- UHRS - Z2 H50
- UHRS - Z2 H55

Depth conversions were under taken using an assumed sesimic velocity (ASV) of 1600 m/s



PROJECT TITLE: Geophysical Survey MED A06 OWF 1 Area

AREA: MED

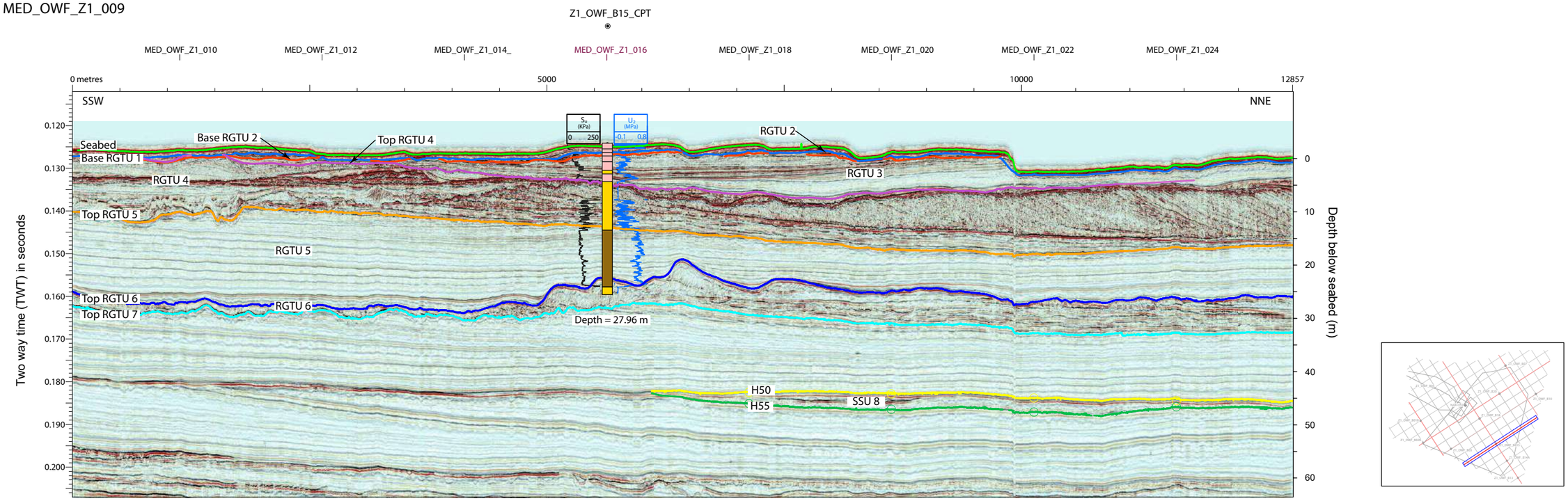
CHART: 2 of 4

CHART TITLE: MED AO6 OWF 1 Profiles

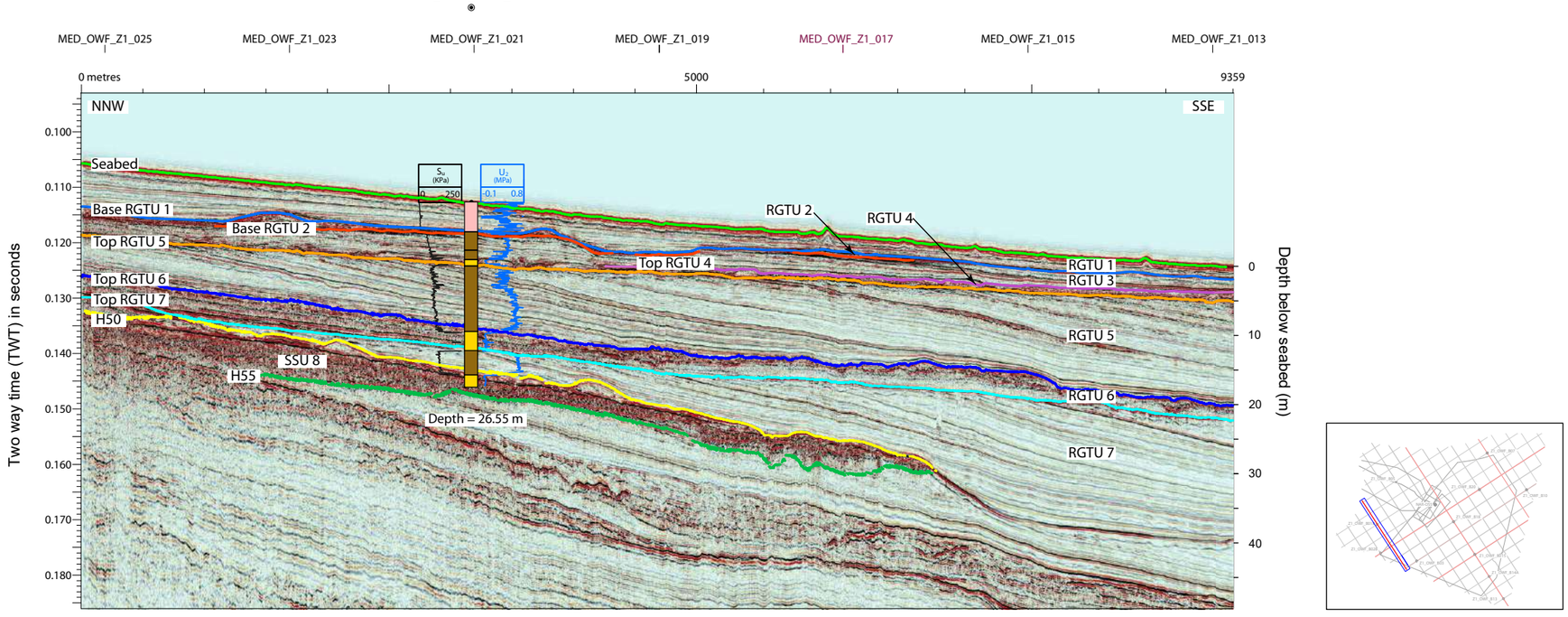
REFERENCE: ---

SCALE: Indicated in charts

Line MED_OWF_Z1_009



Line MED_OWF_Z1_006



MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

CARTOGRAPHIC INFORMATION
Elevation referred to Bathyelly v2 Geoid ZH/ell

GRAPHIC SCALE
Scales as shown on profile

DATUM: WGS84

PROJECTION: UTM 31N

DATE: August 2024

COMMENTS: ---

LEGEND:
- Sand
- Silt
- Clay
- Sand & Clay
- Seabed
- Base RGTU 1
- Base RGTU 2
- Top RGTU 4
- H12 - Channels
- Top RGTU 5
- Top RGTU 6
- Top RGTU 7
- UHRS - Z2 H50
- UHRS - Z2 H55

Depth conversions were under taken using an assumed sesimic velocity (ASV) of 1600 m/s

PROJECT TITLE: Geophysical Survey MED A06 OWF 1 Area

AREA: MED

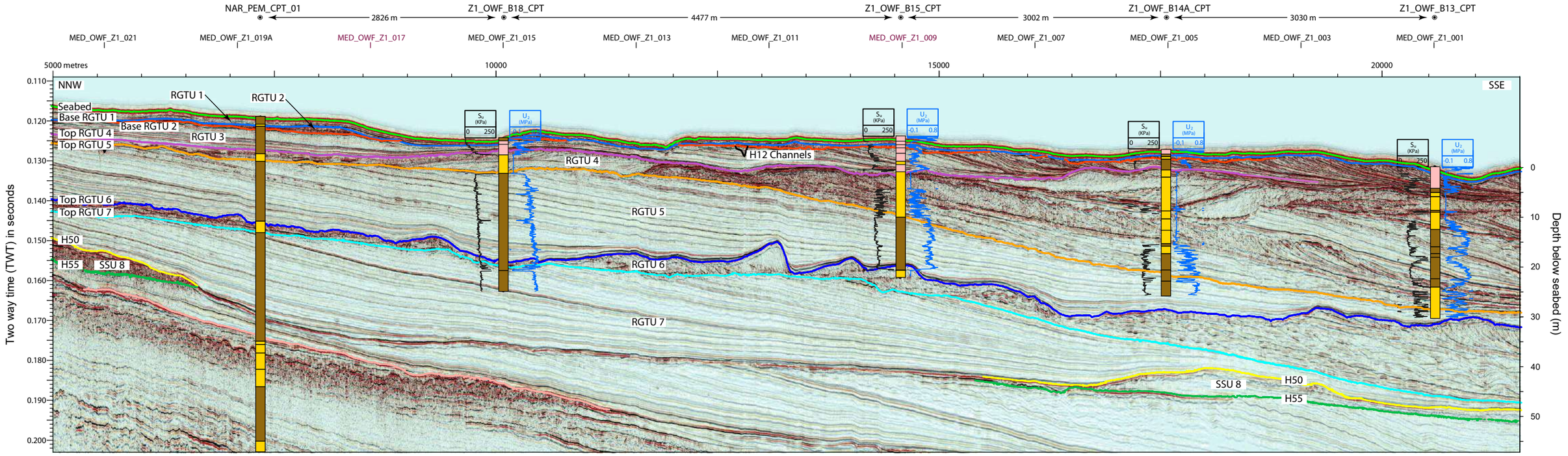
CHART: 3 of 4

CHART TITLE: MED AO6 OWF 1 Profiles

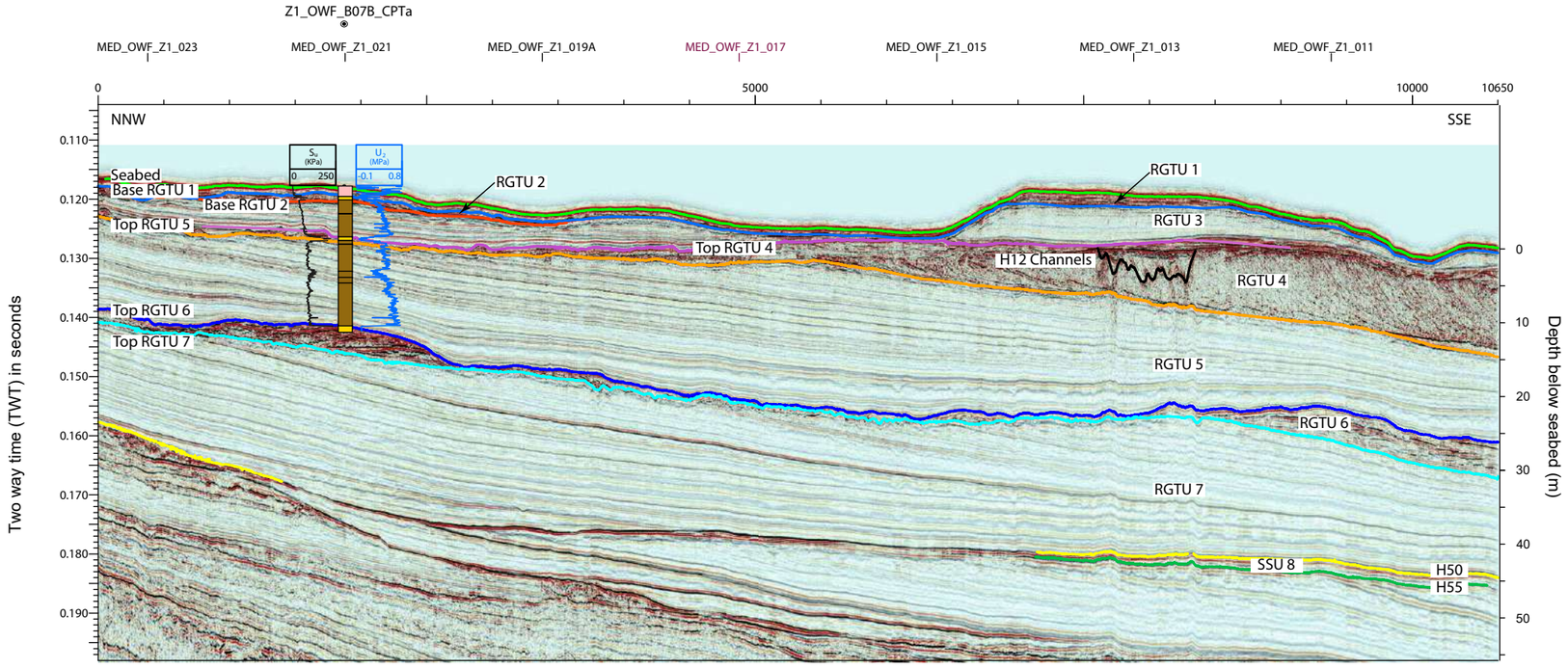
REFERENCE: ---

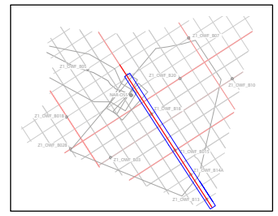
SCALE: Indicated in charts

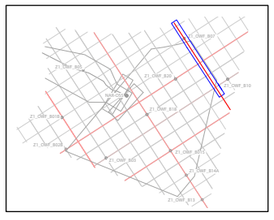
Line MED_OWF_Z1_016



Line MED_OWF_Z1_026



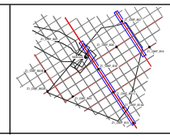




MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE	TECNOAMBIENTE A TRADEBE COMPANY	CARTOGRAPHIC INFORMATION: Elevation referred to Bathyelly v2 Geoid ZH/ell	GRAPHIC SCALE: Scales as shown on profile	DATUM: WGS84	PROJECTION: UTM 31N	DATE: August 2024	COMMENTS: ---

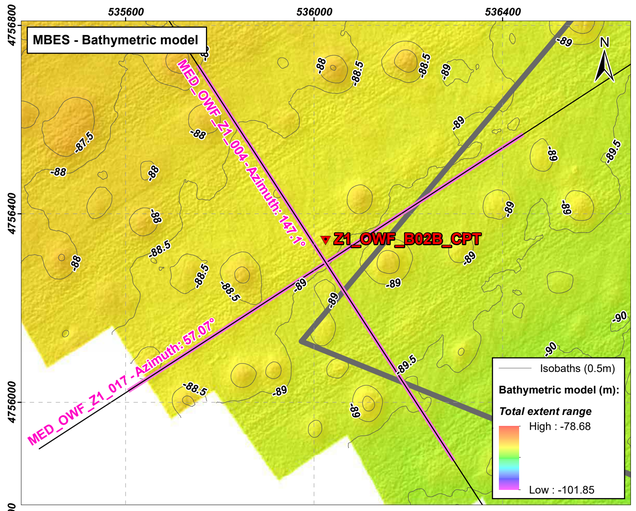
LEGEND:
- Sand
- Silt
- Clay
- Sand & Clay
- Seabed
- Base RGTU 1
- Base RGTU 2
- Top RGTU 4
- H12 - Channels
- Top RGTU 5
- Top RGTU 6
- Top RGTU 7
- UHRS - Z2 H50
- UHRS - Z2 H55

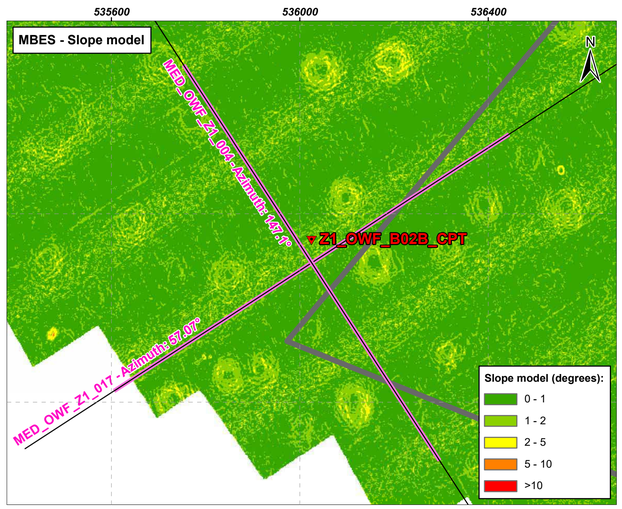
Depth conversions were under taken using an assumed sesimic velocity (ASV) of 1600 m/s

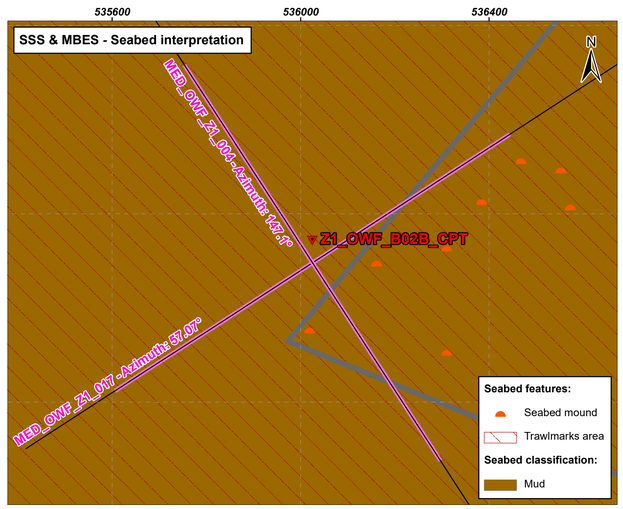


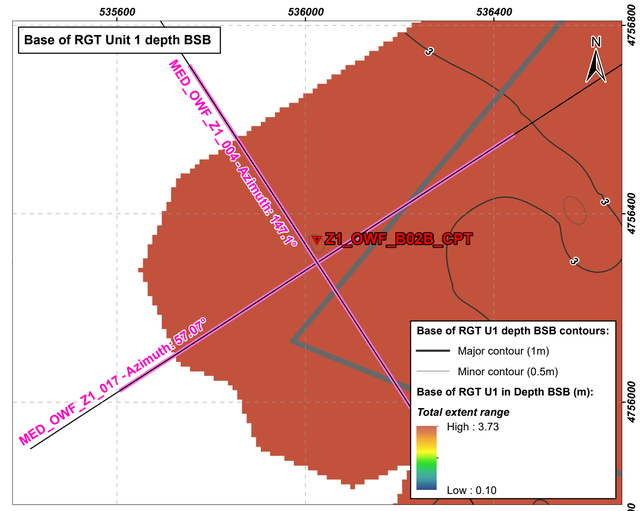
PROJECT TITLE:	AREA:	CHART:
Geophysical Survey MED A06 OWF 1 Area	MED	4 of 4
CHART TITLE:	**REFERENCE:**	**SCALE:**
MED AO6 OWF 1 Profiles	---	Indicated in charts

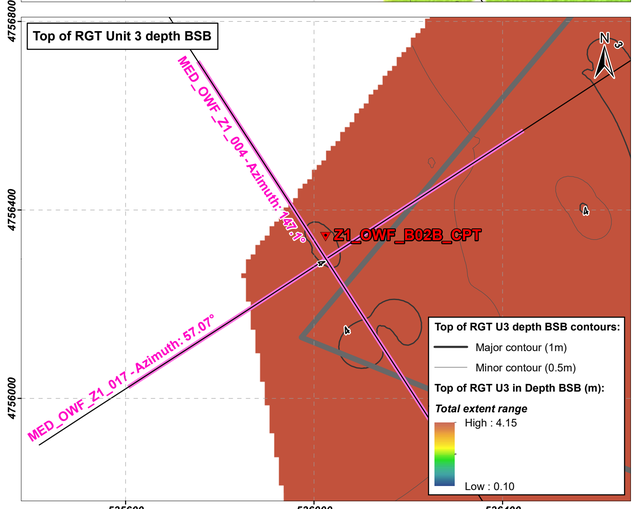
APPENDIX III – INTEGRATED CHARTS

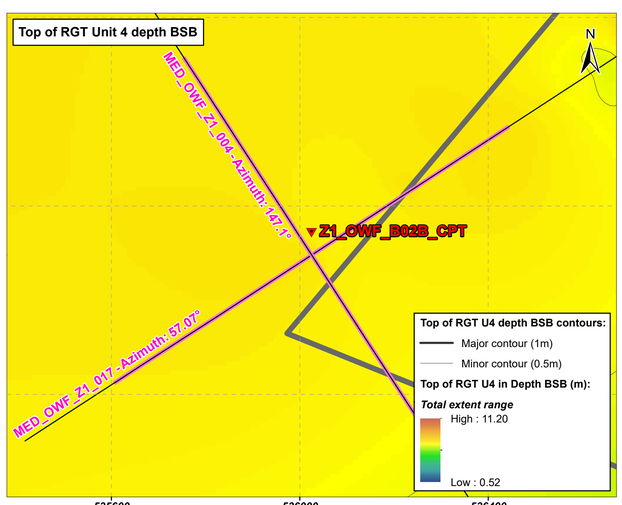


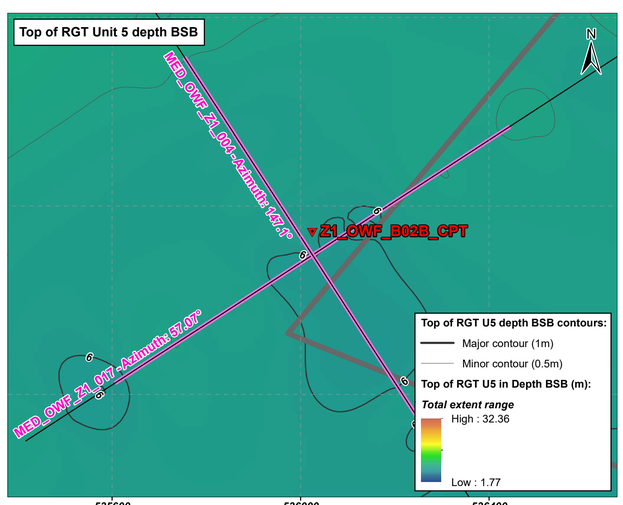


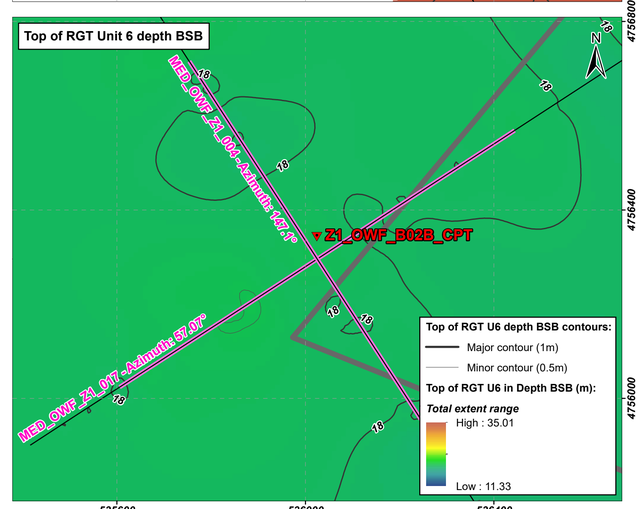


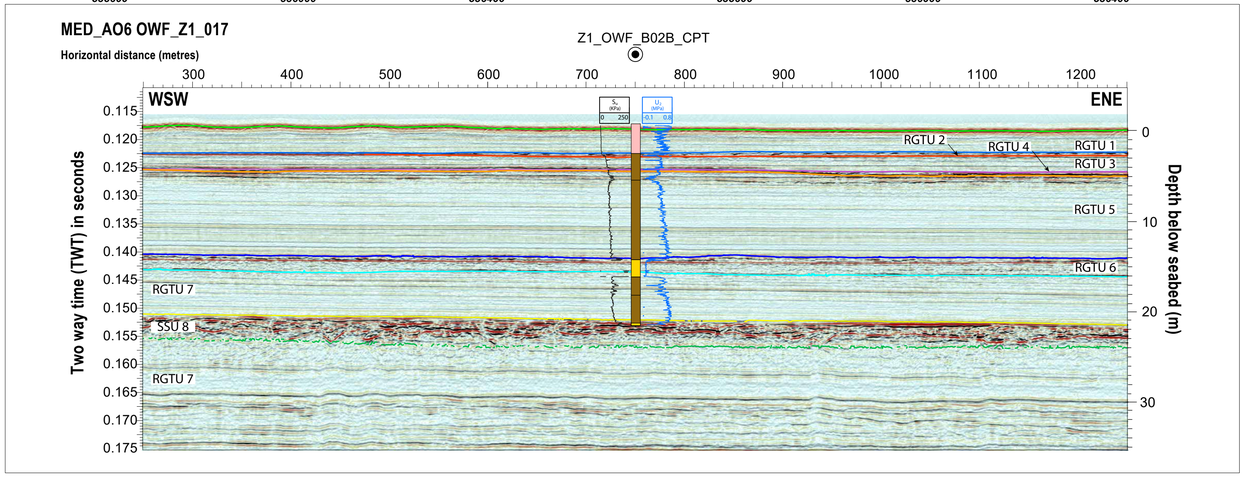


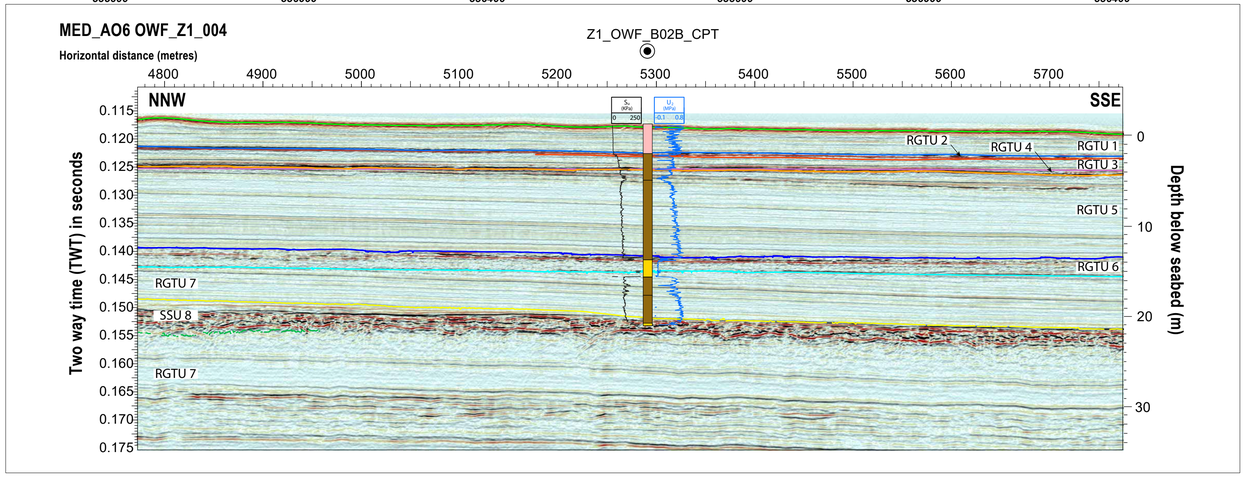












MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 125 250 500 m

0 0.05 0.1 0.2 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

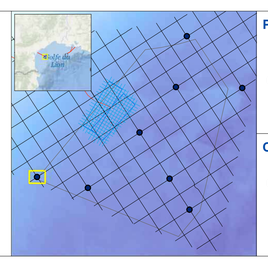
- OSS tracklines
- OWF tracklines
- Extent of the seismic profile

Soil data:

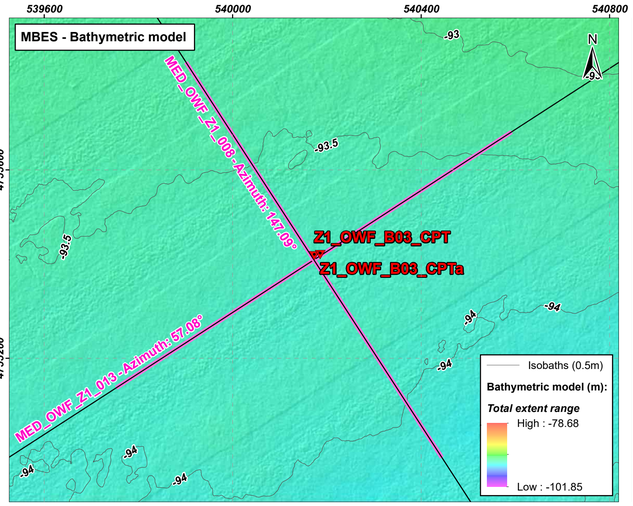
- Sand
- Silt
- Clay
- Sand and Clay

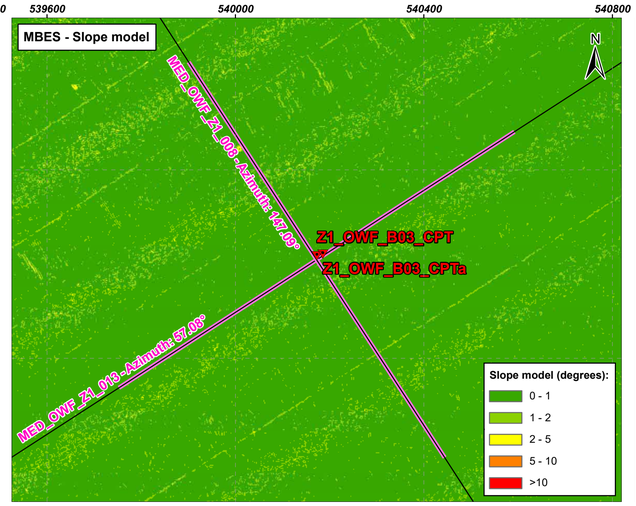
Seismic profile reflectors:

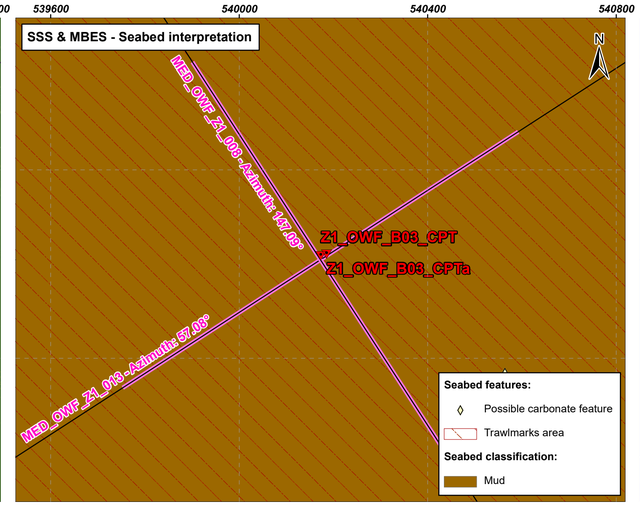
- Seabed
- Base of RGT Unit 1
- Base of RGT Unit 2
- Top of RGT Unit 4
- Top of RGT Unit 5
- Top of RGT Unit 6
- Top of RGT Unit 7

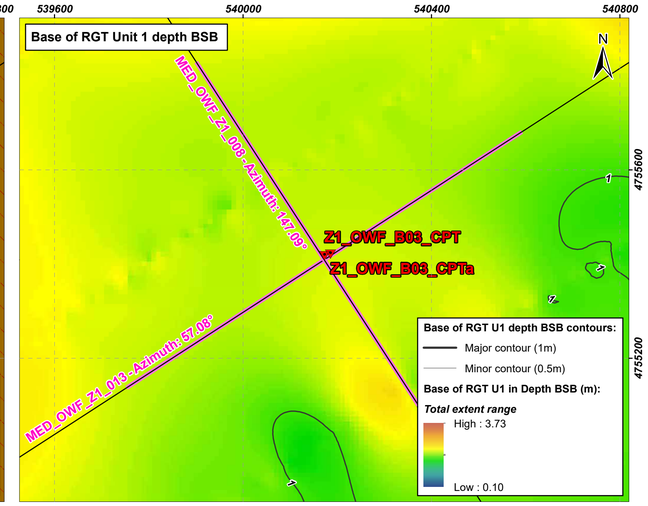


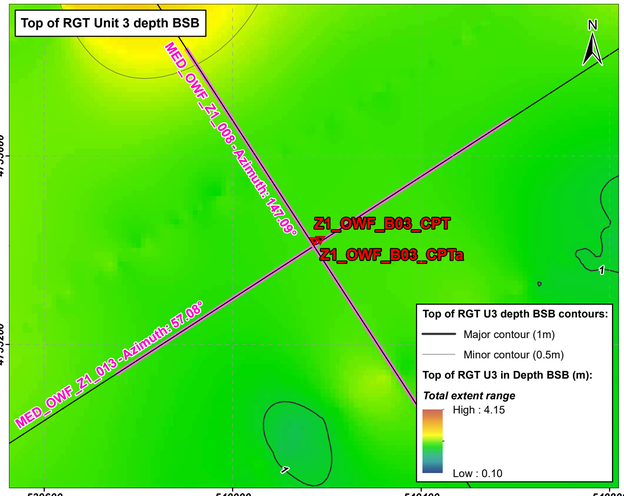
PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	1 / 8
CHART TITLE:	**DATE:**	**SCALE:**
GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B02B	August 2024	1:6500 DIN A1 1:13000 DIN A3

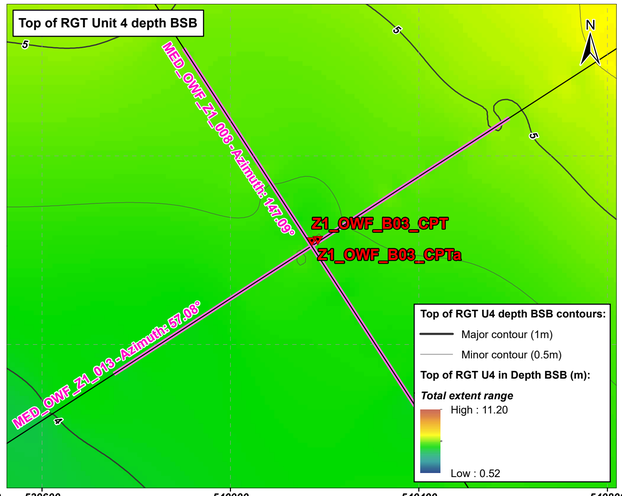


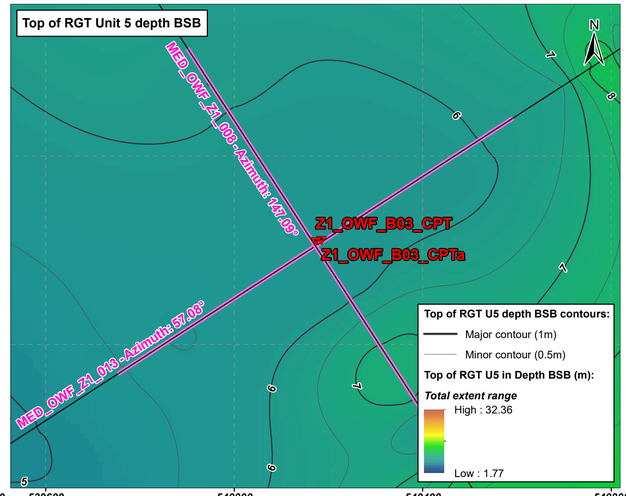


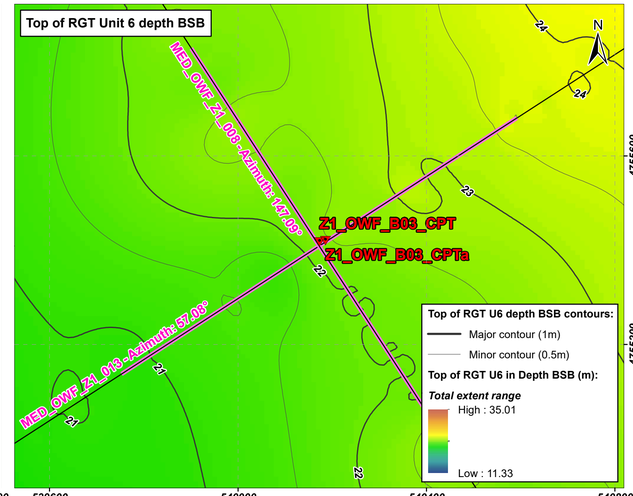


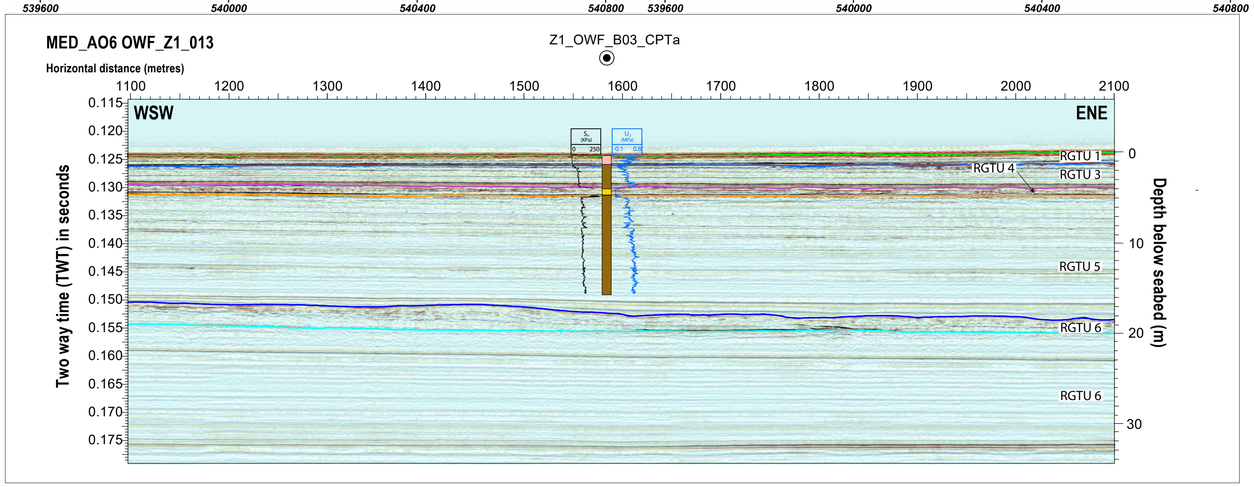


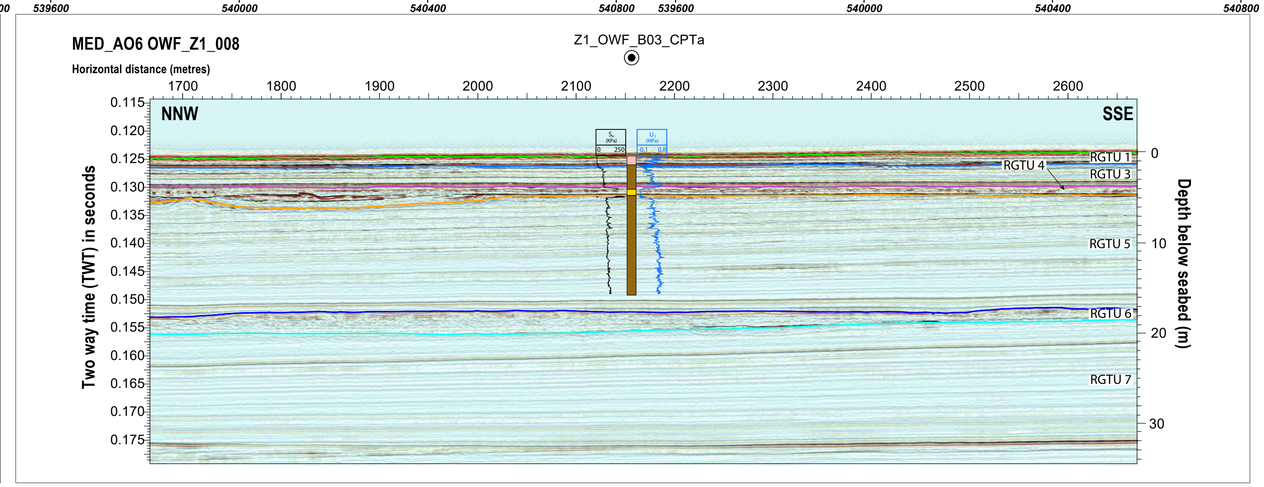












MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

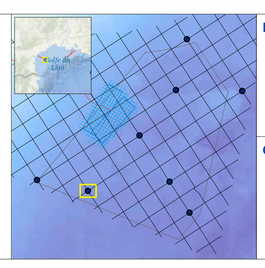
Geotechnical locations:
Borehole sampling type
- CPT
- PC
- VC

Survey areas:
- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

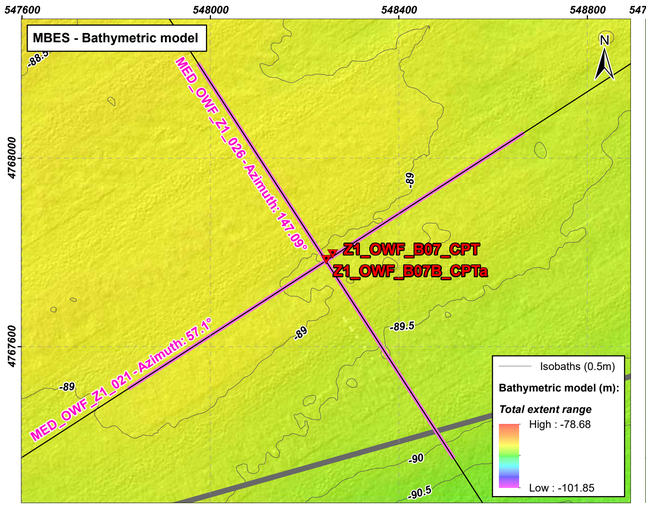
UHRS tracklines:
- OSS tracklines
- OWF tracklines
- Extent of the seismic profile

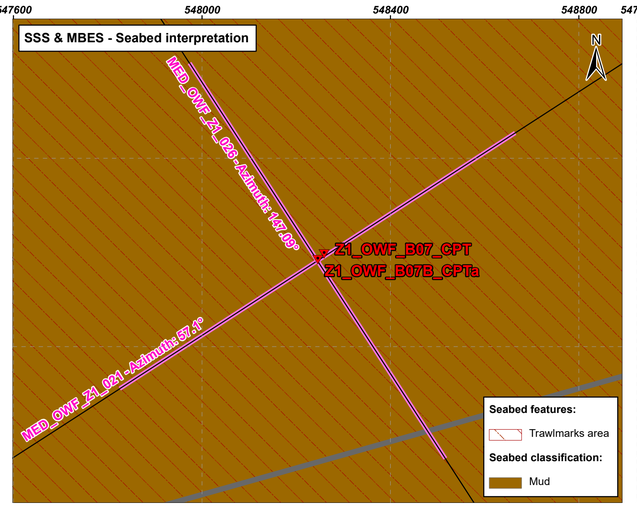
Soil data:
- Sand
- Silt
- Clay
- Sand and Clay

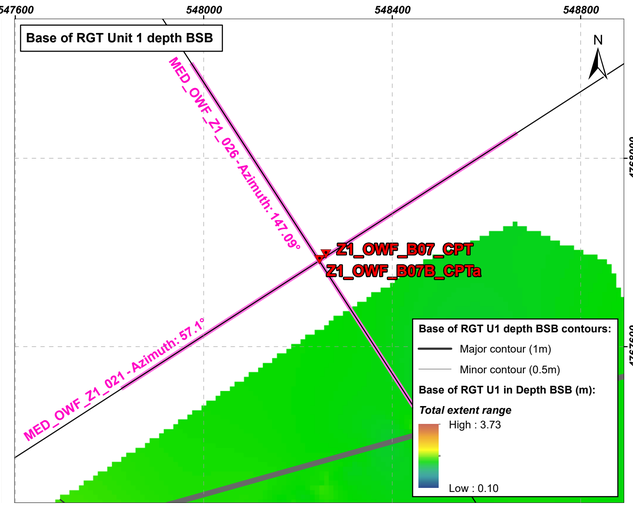
Seismic profile reflectors:
- Seabed
- Base of RGT Unit 1
- Base of RGT Unit 2
- Top of RGT Unit 4
- Top of RGT Unit 5
- Top of RGT Unit 6
- Top of RGT Unit 7

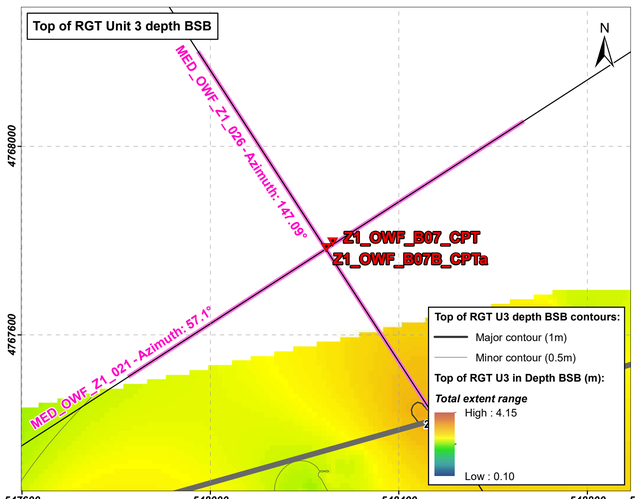


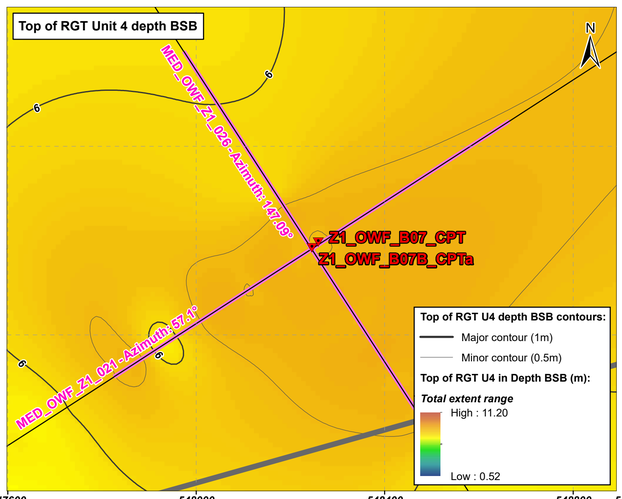
PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	2 / 8
CHART TITLE:	**DATE:**	**SCALE:**
GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B03	August 2024	1:6500 DIN A1 1:13000 DIN A3

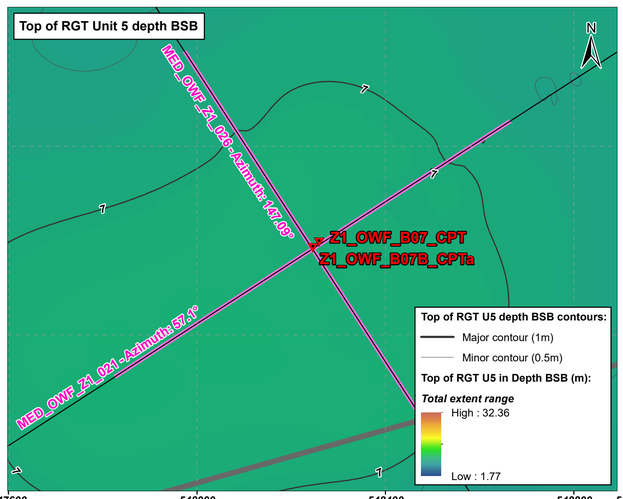


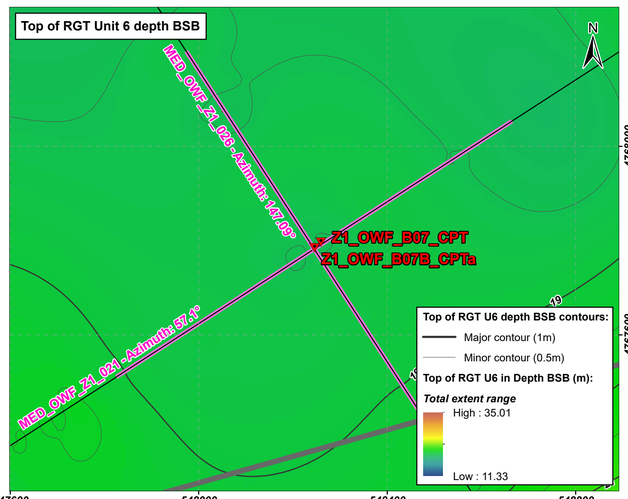


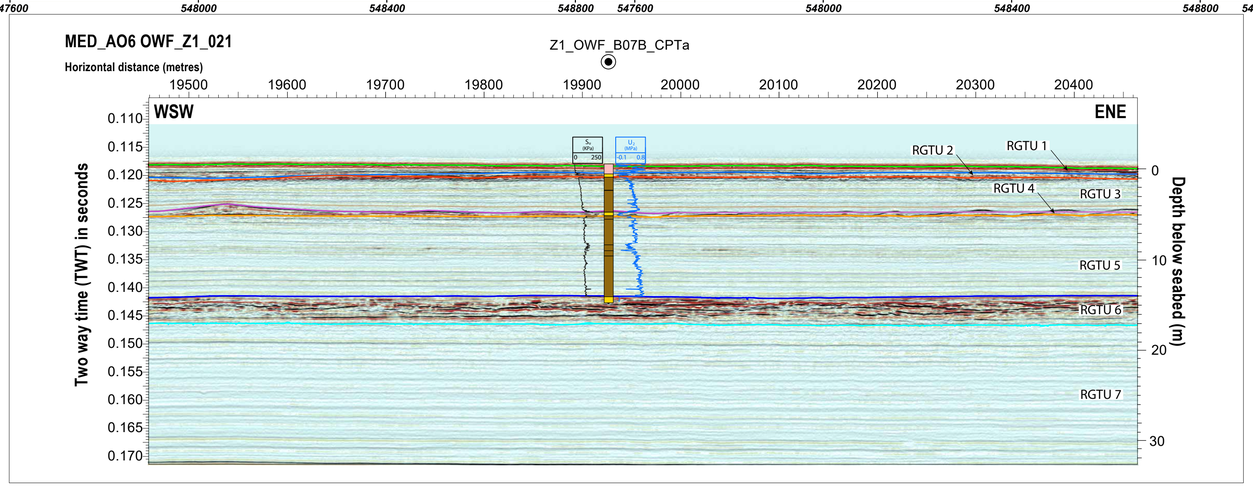


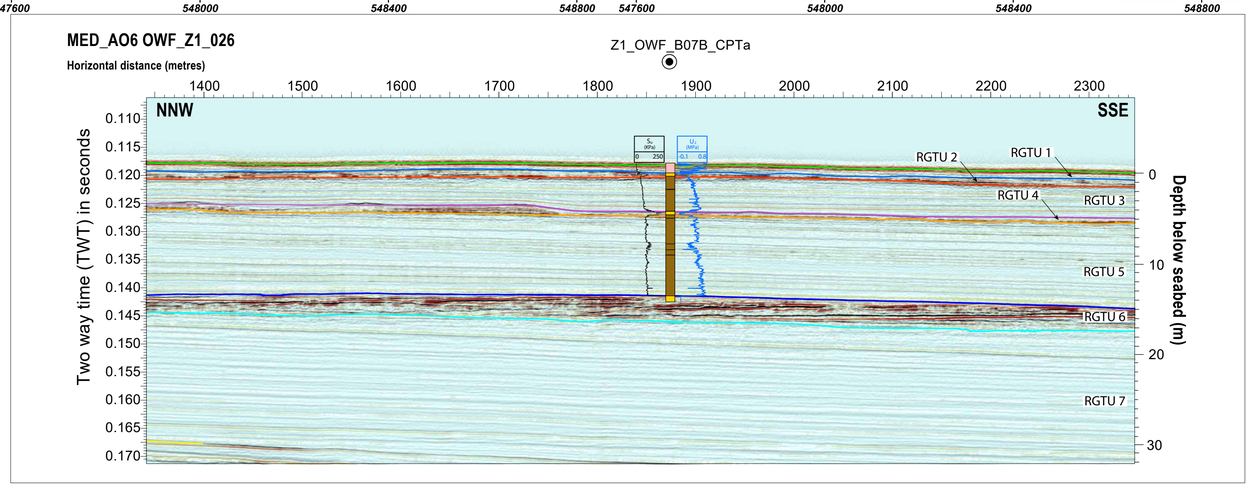












MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 125 250 500 m

0 0.05 0.1 0.2 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
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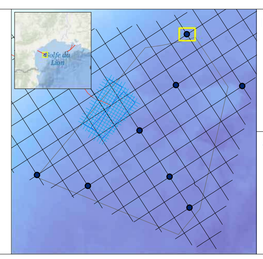

PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	3 / 8
CHART TITLE:	**DATE:**	**SCALE:**
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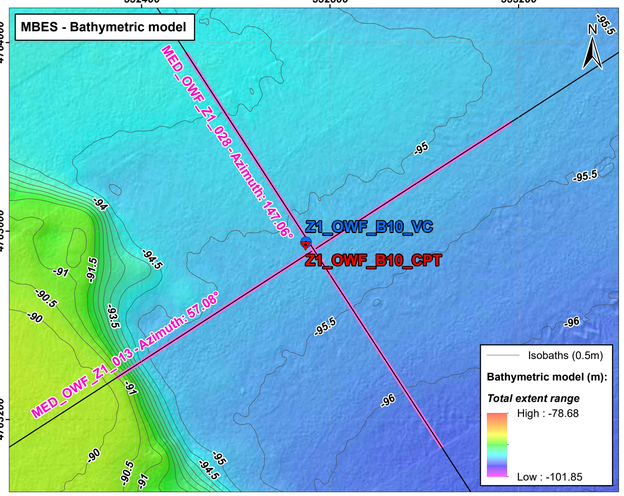

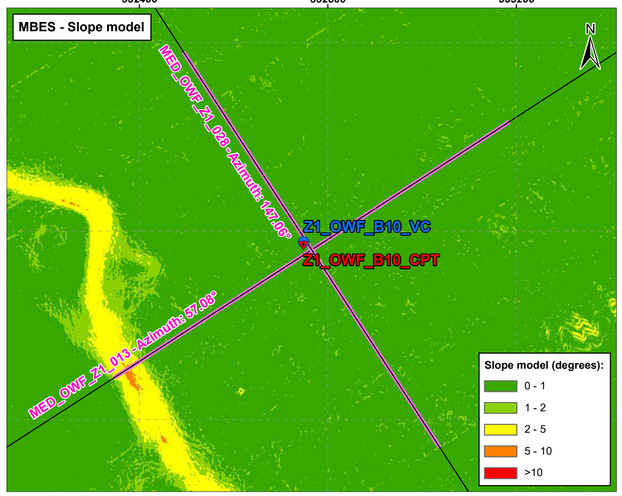

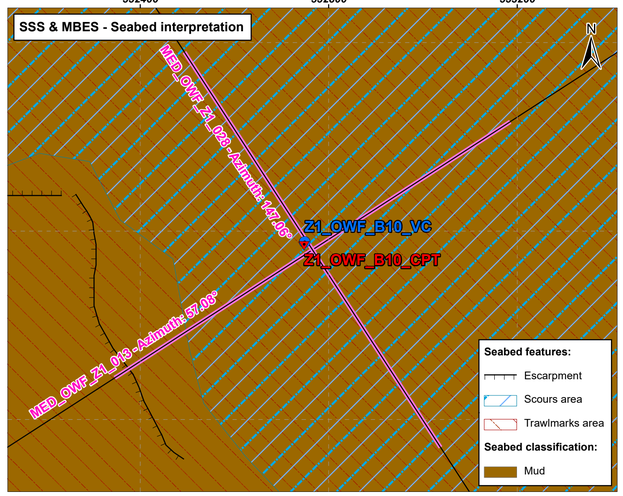

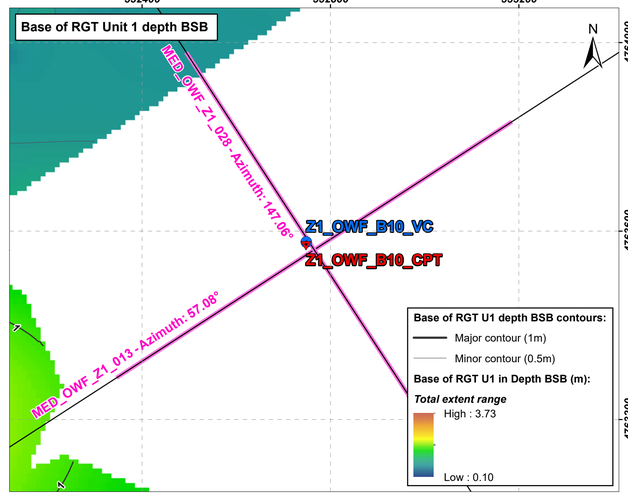

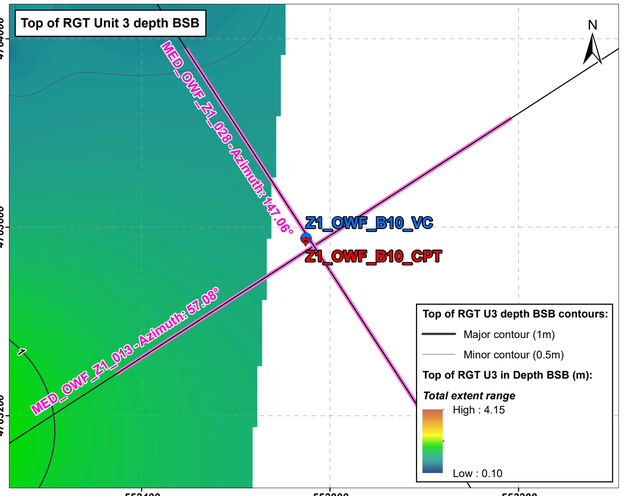

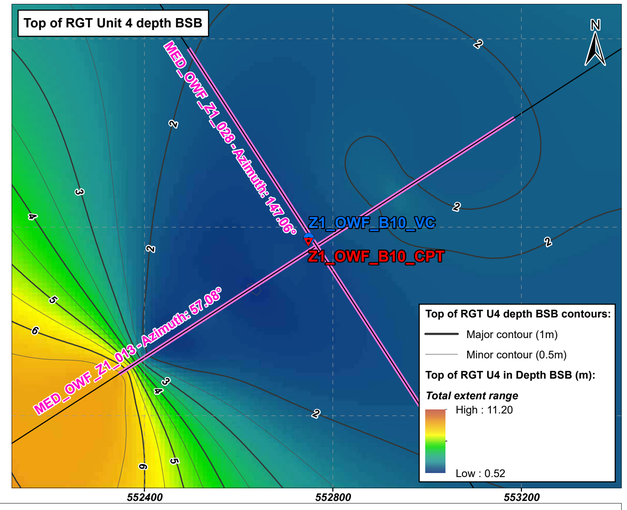

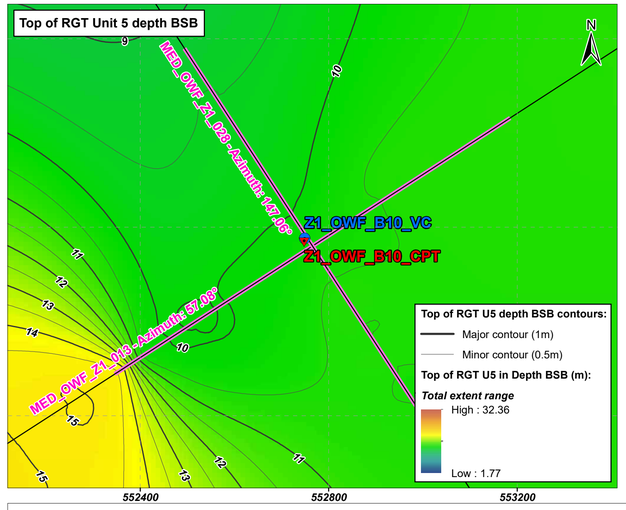

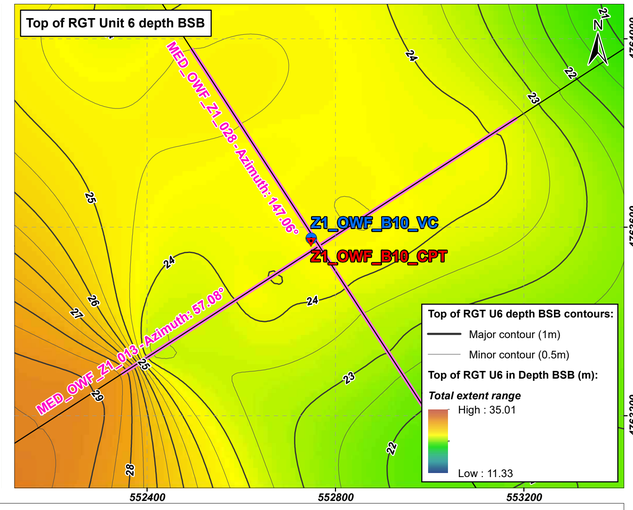

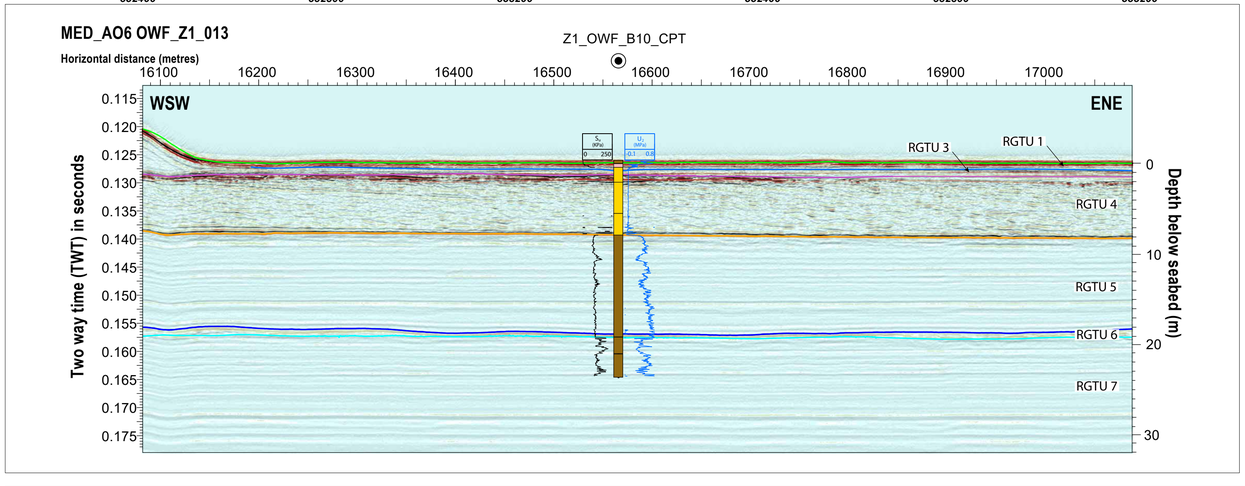

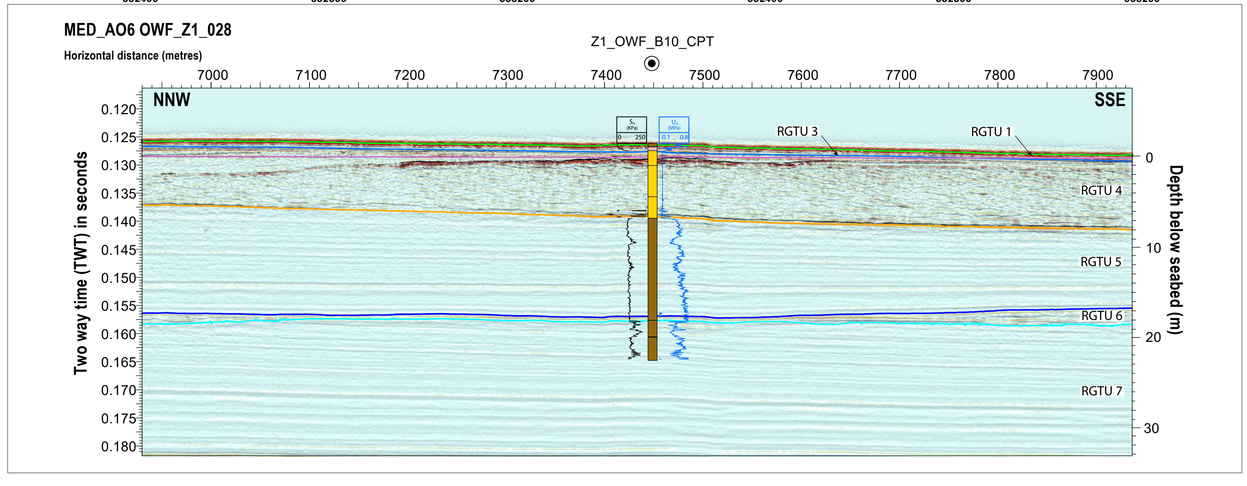

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 125 250 500 m

0 0.05 0.1 0.2 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
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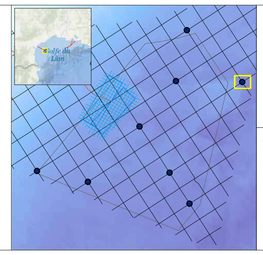
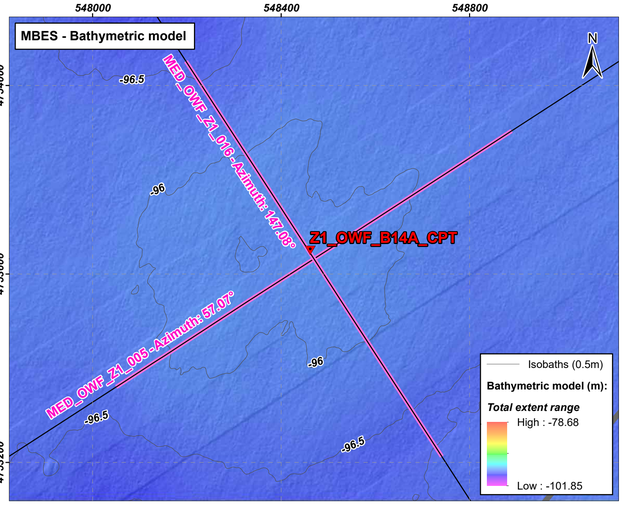
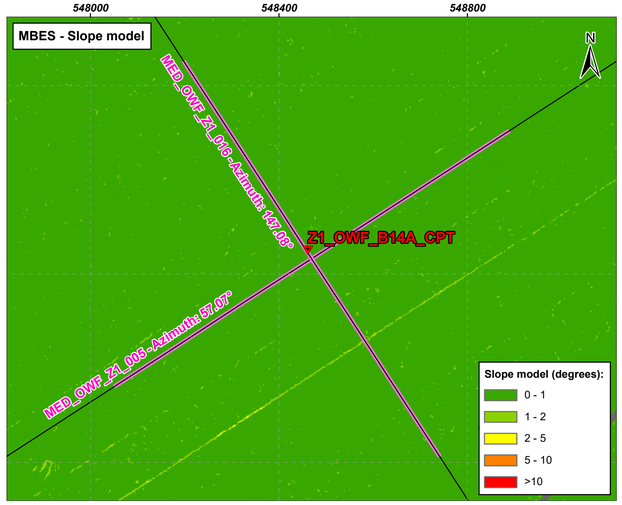
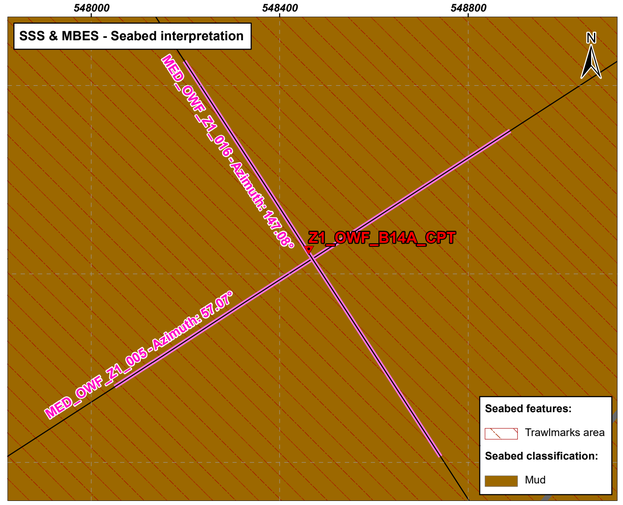
- Top of RGT Unit 7

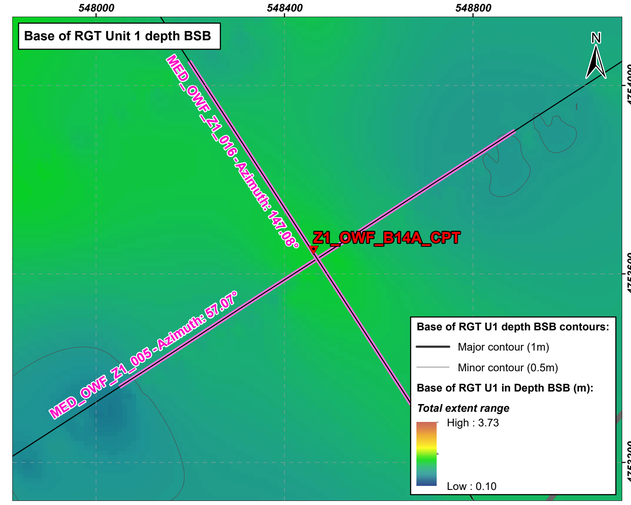


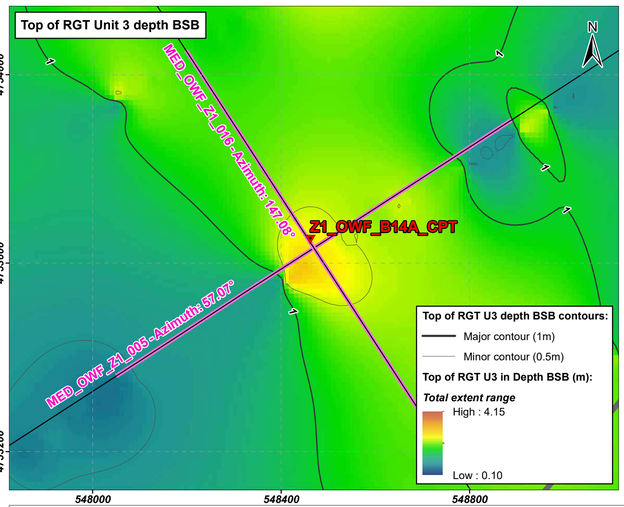
PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	4 / 8
CHART TITLE:	**DATE:**	**SCALE:**
GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B10	August 2024	1:6500 DIN A1 1:13000 DIN A3

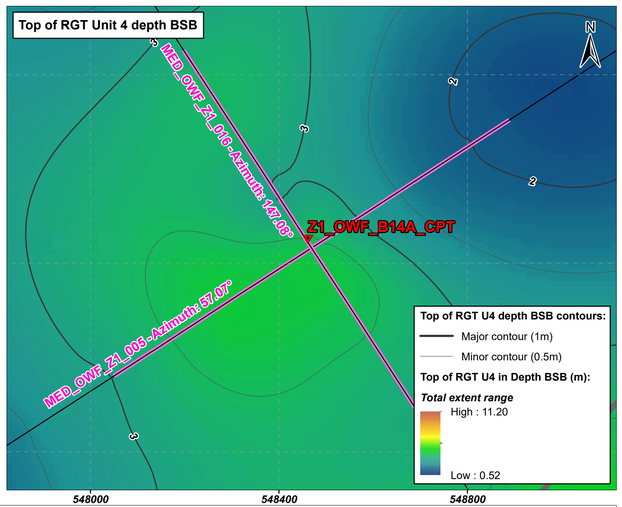


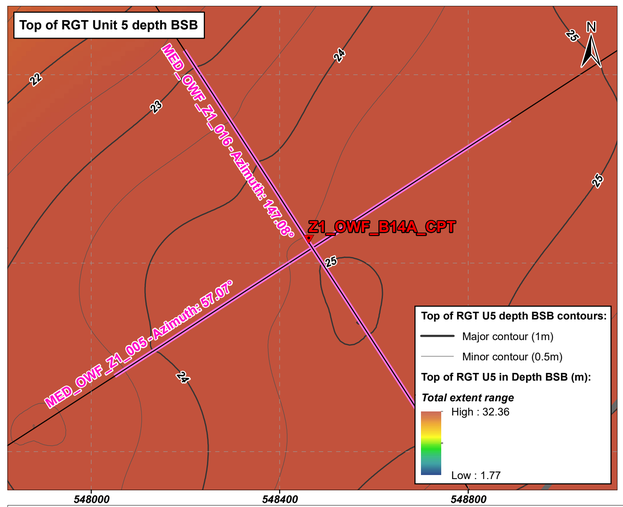


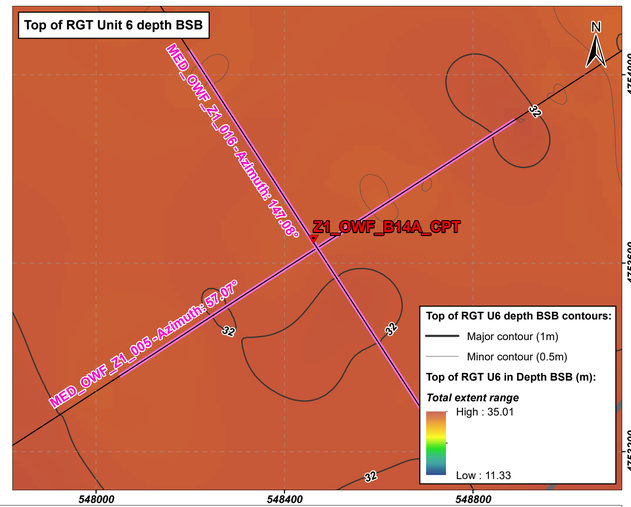


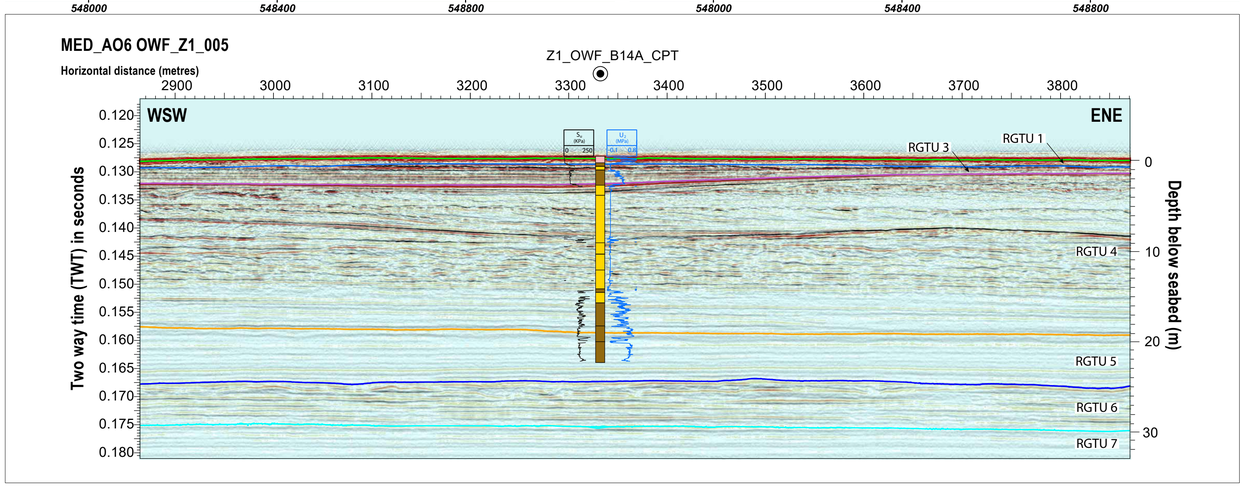


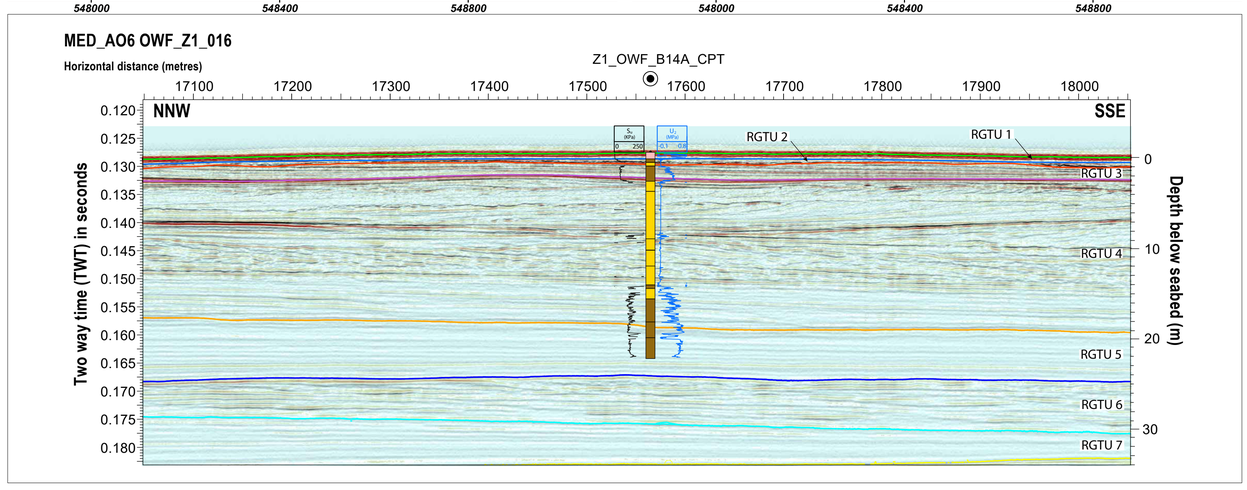












MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 125 250 500 m

0 0.05 0.1 0.2 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type
- CPT
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Survey areas:
- Offshore Substation (OSS)
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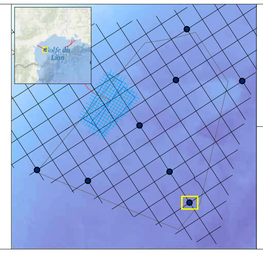
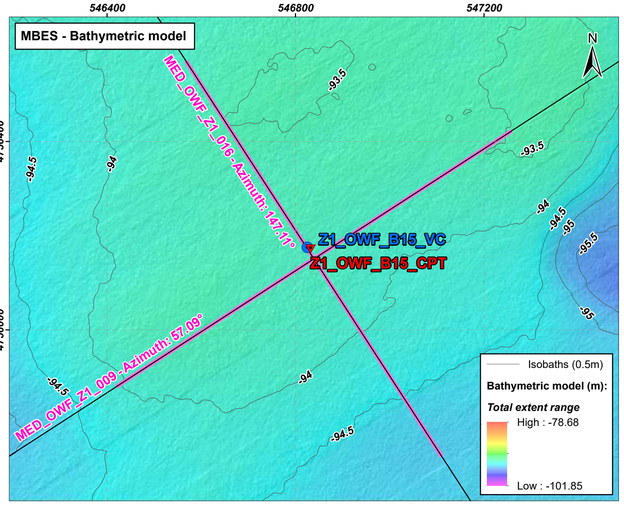
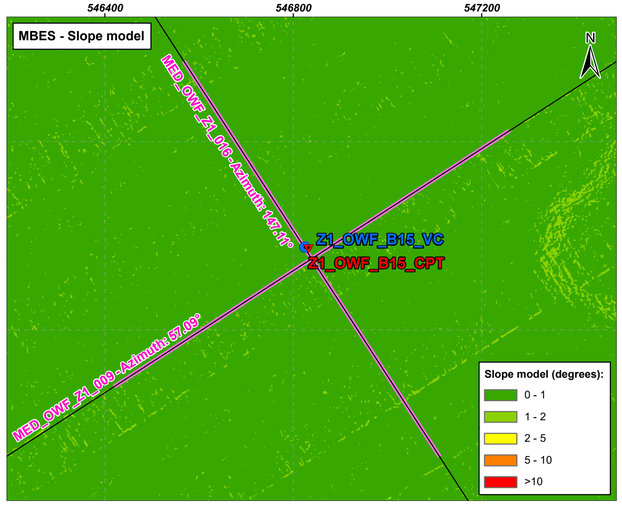
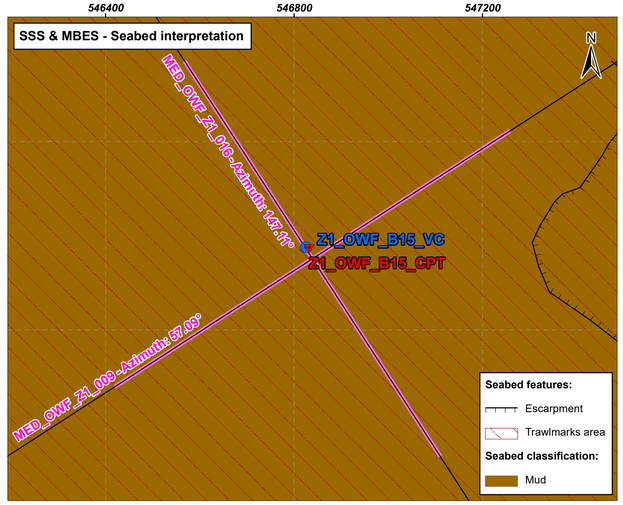
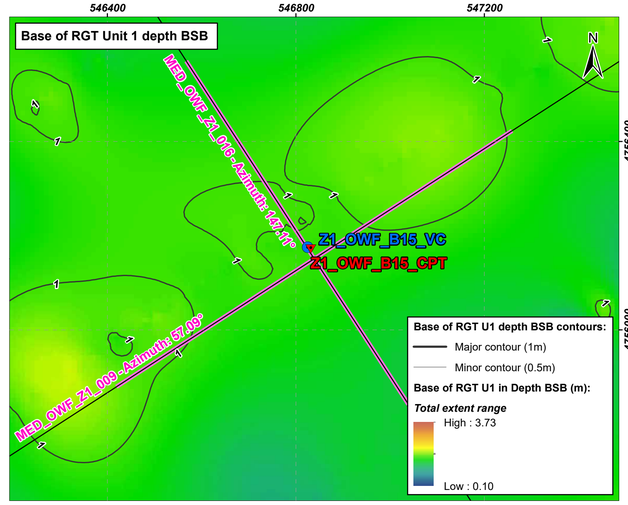


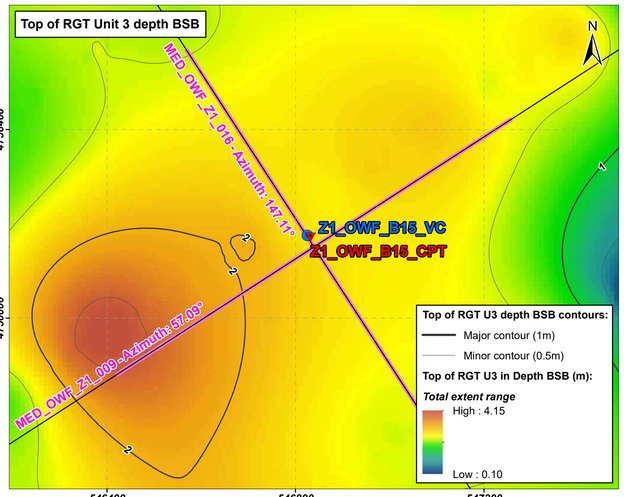
PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	5 / 8
CHART TITLE:	**DATE:**	**SCALE:**
GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B14A	August 2024	1:6500 DIN A1 1:13000 DIN A3

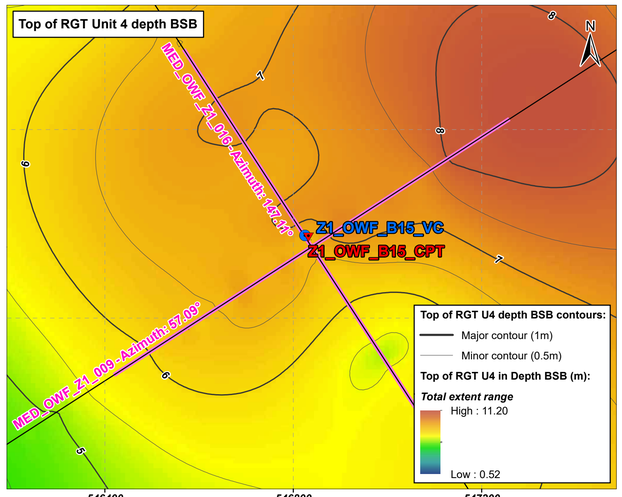


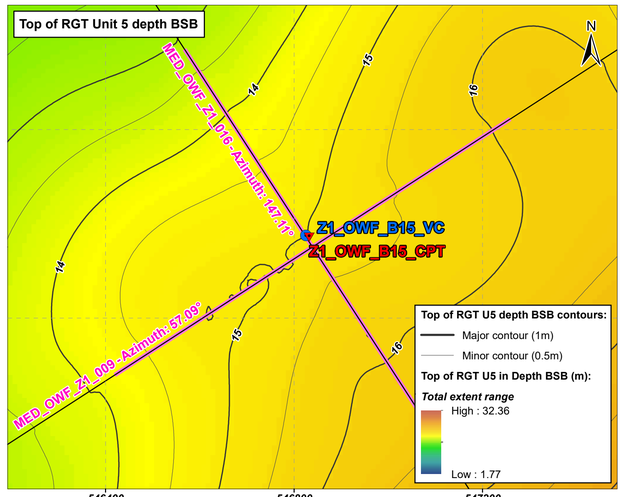


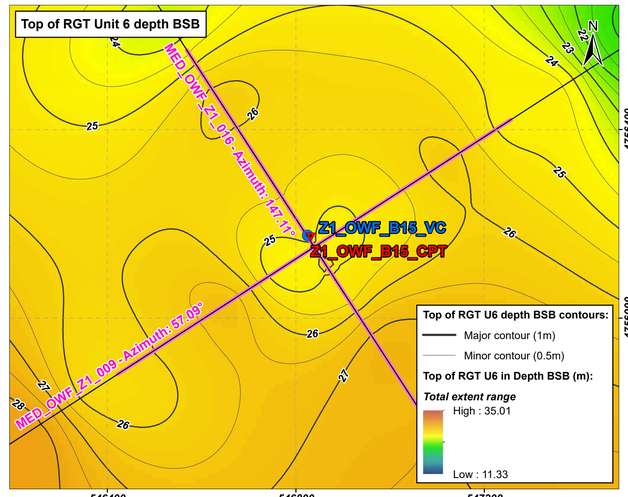


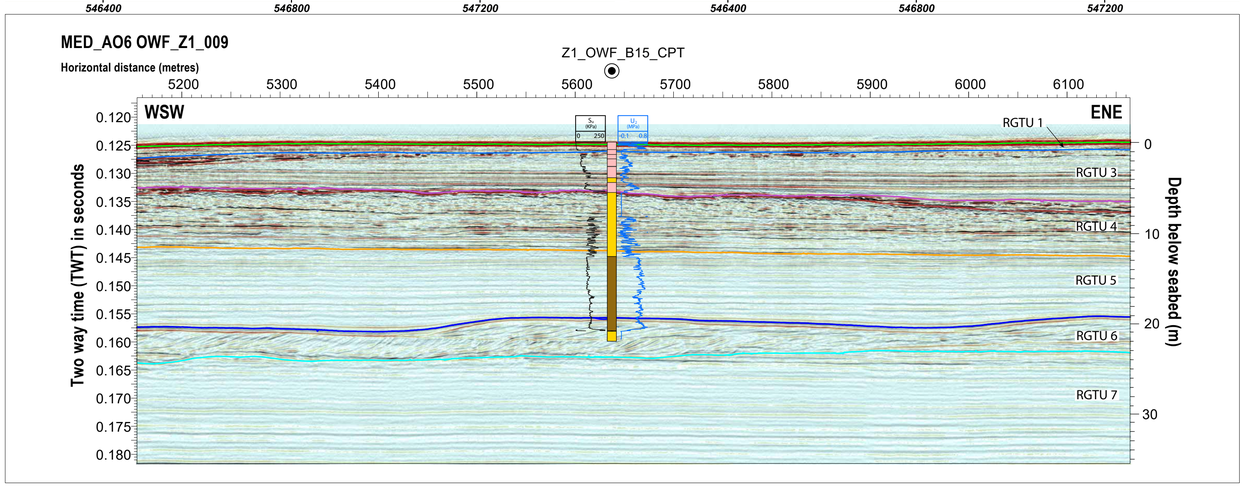


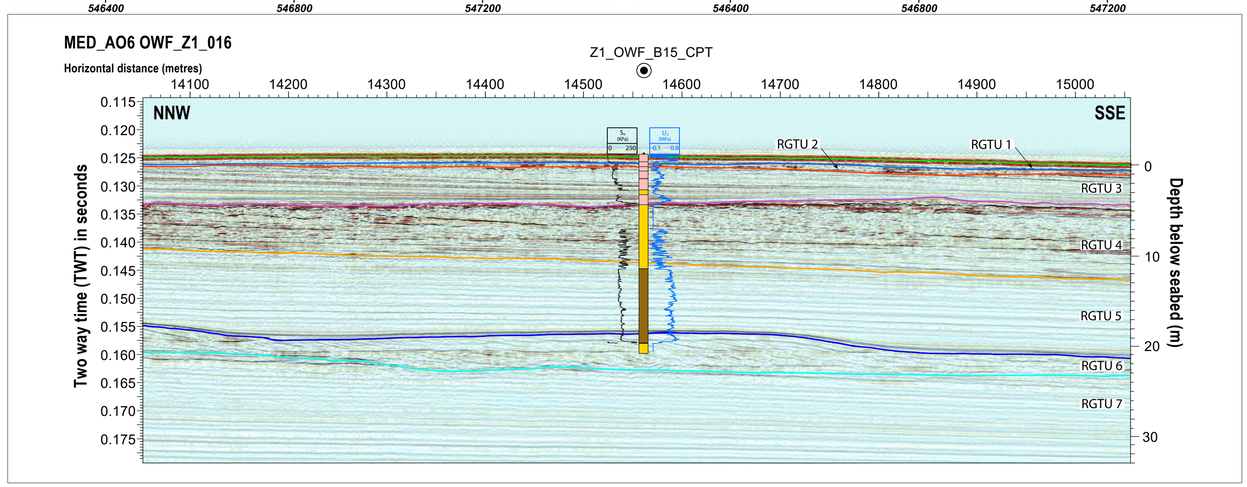












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TECNOAMBIENTE
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GRAPHIC SCALE:

0 125 250 500 m

0 0.05 0.1 0.2 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

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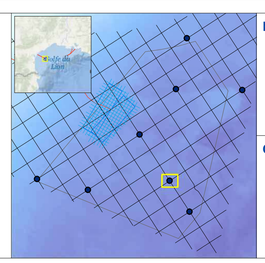

PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	6 / 8
CHART TITLE:	**DATE:**	**SCALE:**
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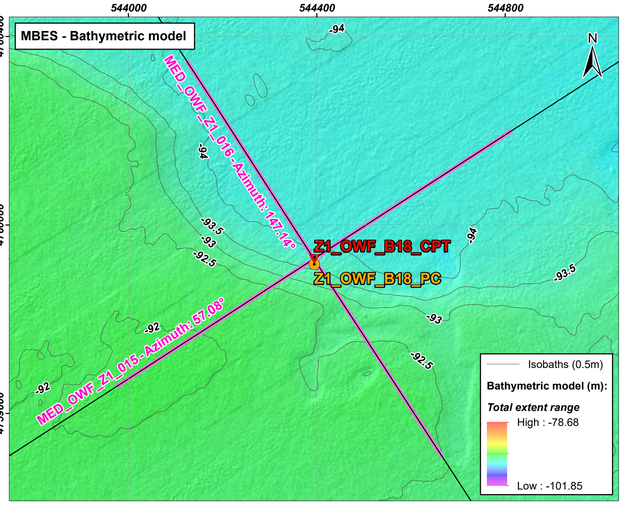
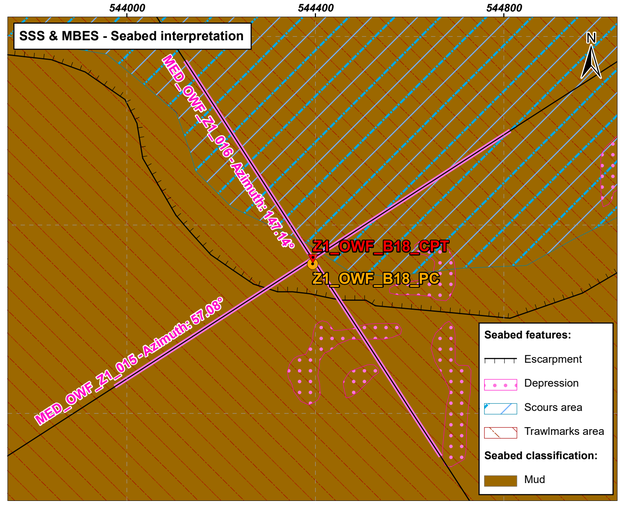
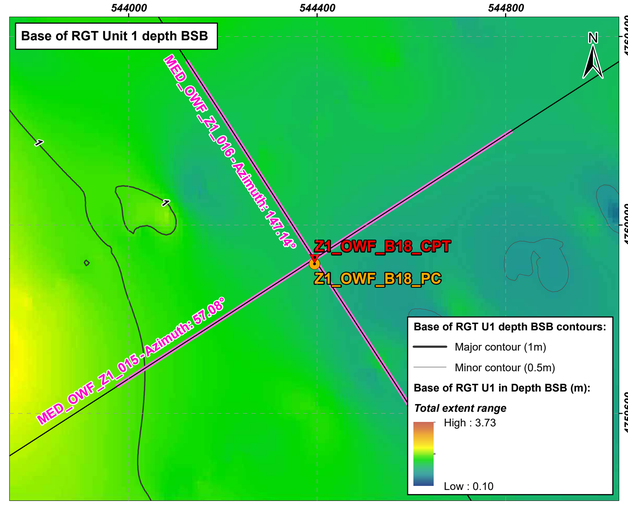
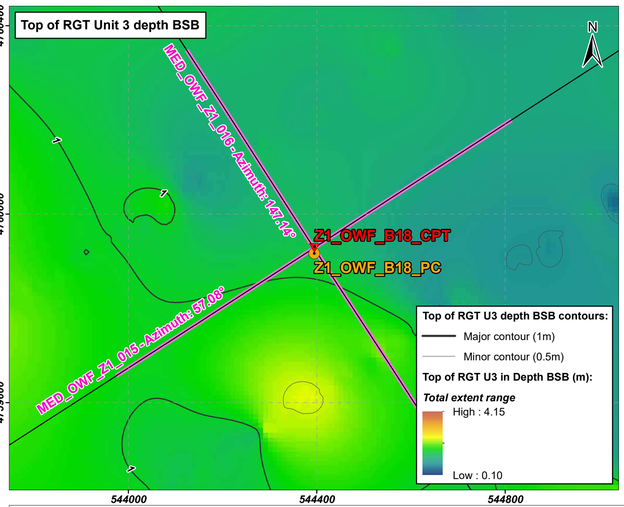
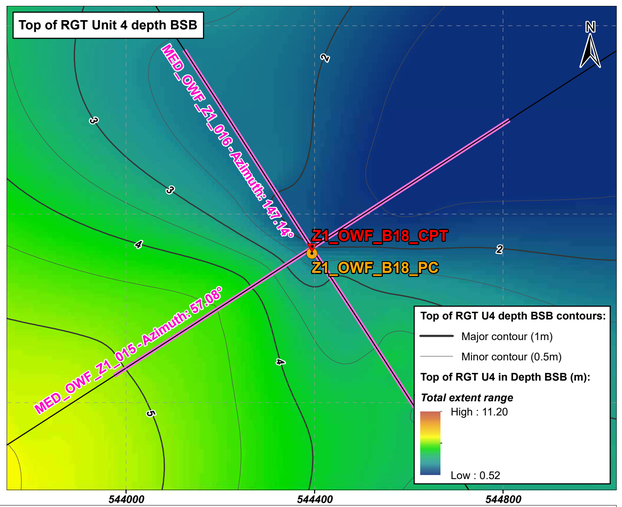
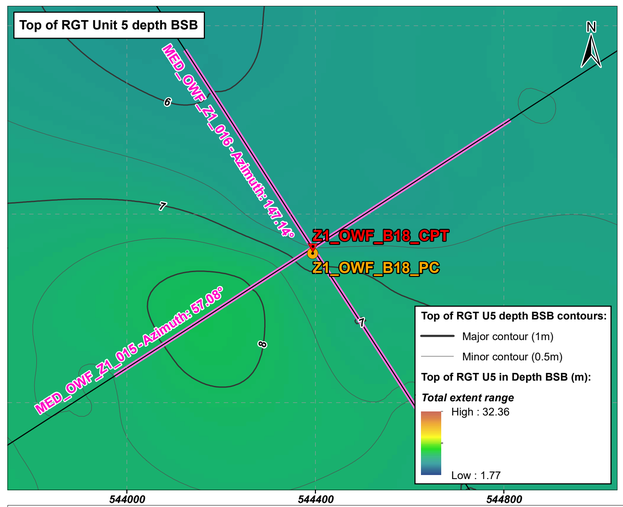


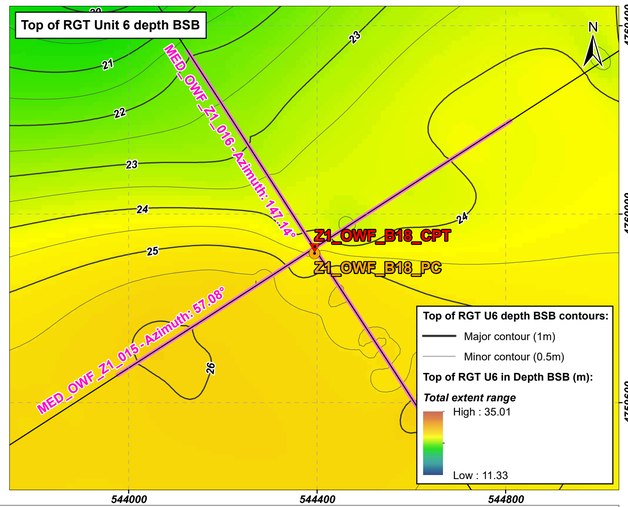


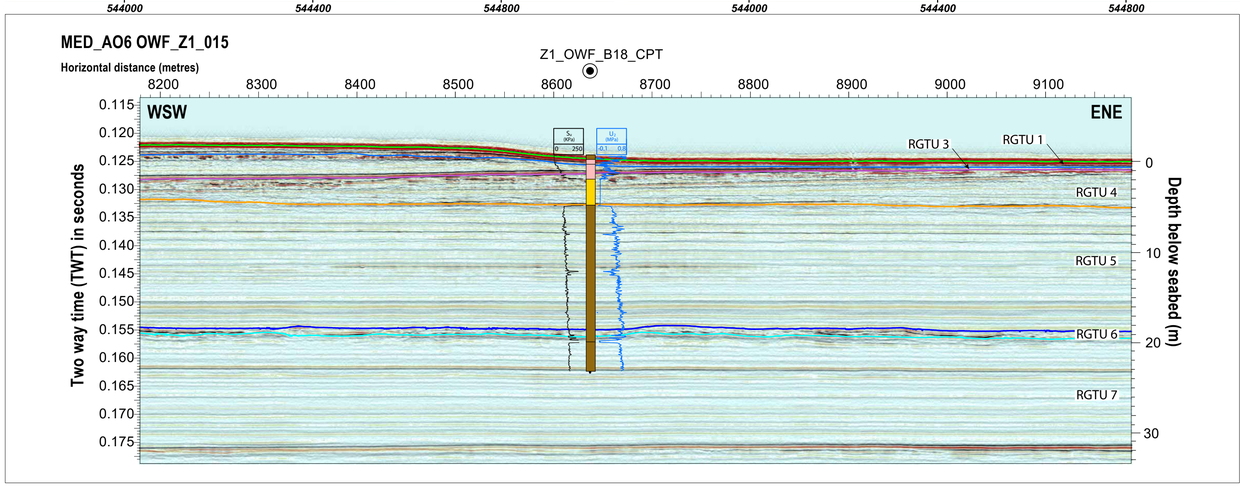


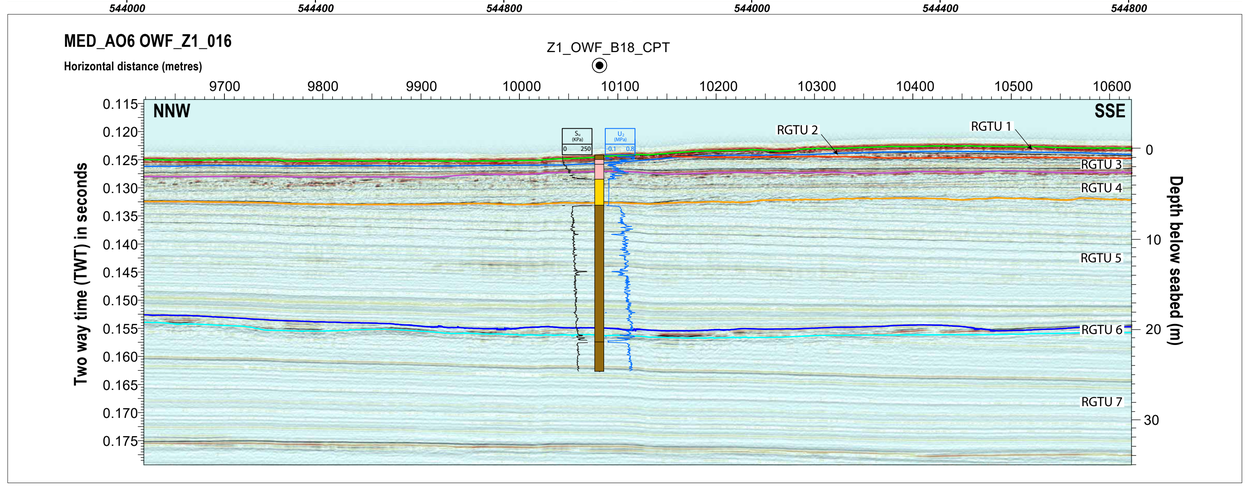












MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:

0 125 250 500 m

0 0.05 0.1 0.2 nm

VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

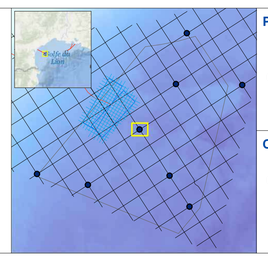
- OSS tracklines
- OWF tracklines
- Extent of the seismic profile

Soil data:

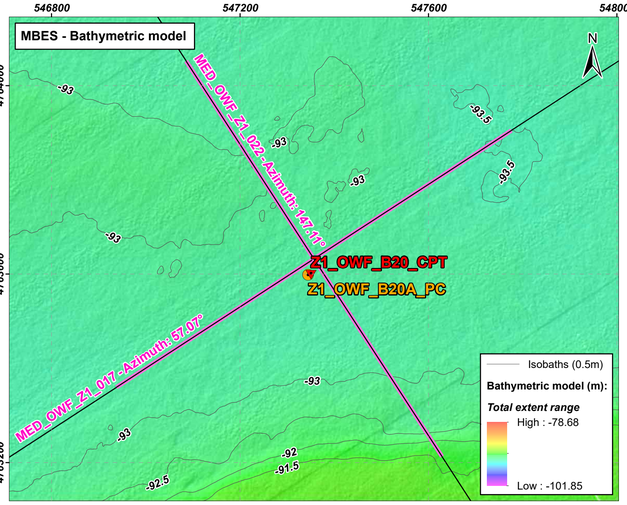
- Sand
- Silt
- Clay
- Sand and Clay

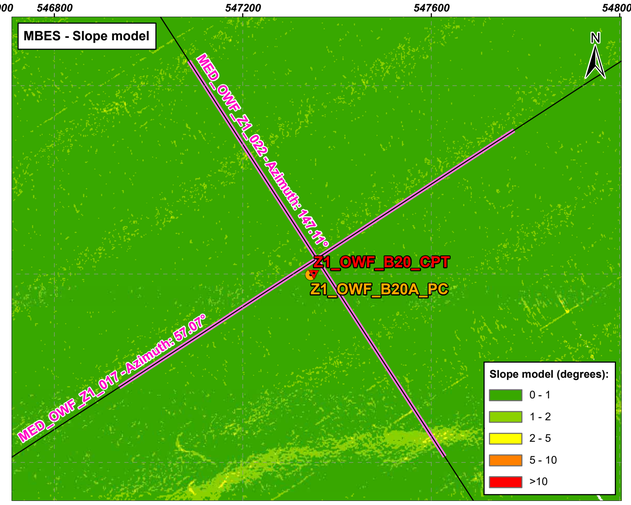
Seismic profile reflectors:

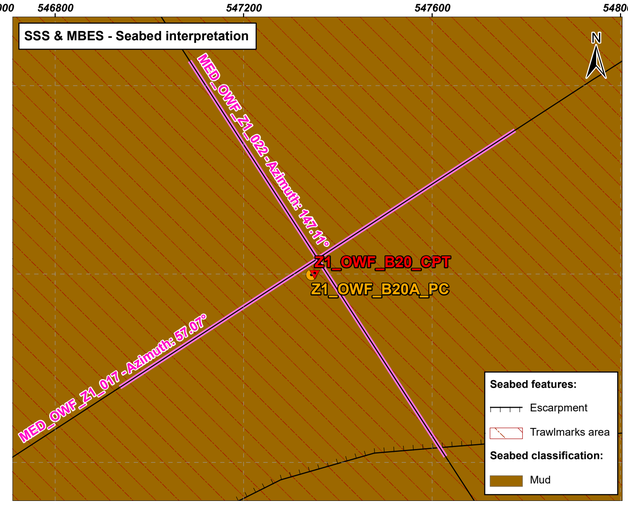
- Seabed
- Base of RGT Unit 1
- Base of RGT Unit 2
- Top of RGT Unit 4
- Top of RGT Unit 5
- Top of RGT Unit 6
- Top of RGT Unit 7

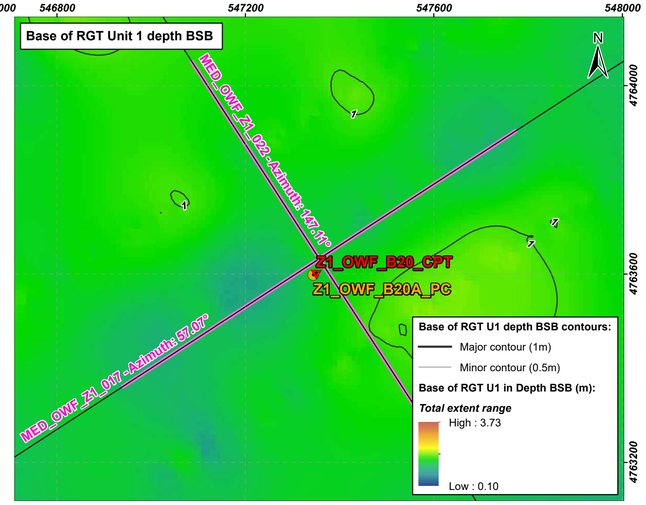


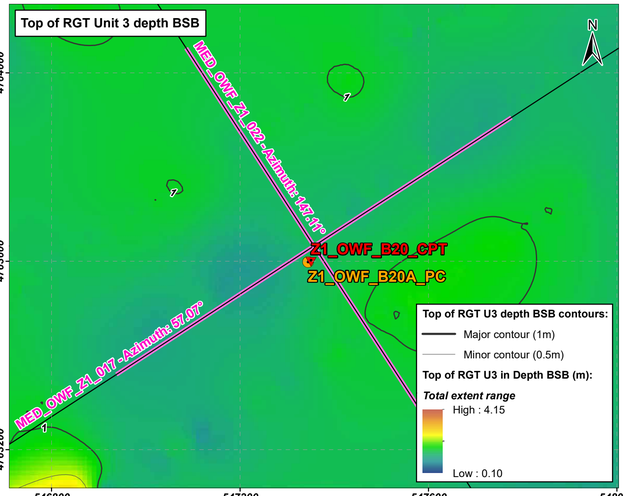
PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	7 / 8
CHART TITLE:	**DATE:**	**SCALE:**
GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B18	August 2024	1:6500 DIN A1 1:13000 DIN A3

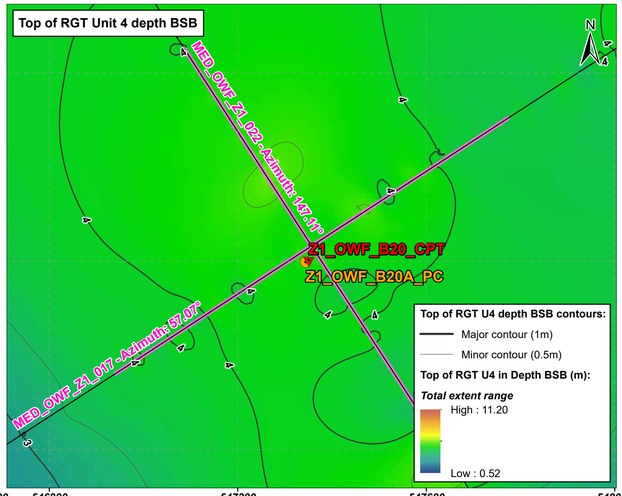


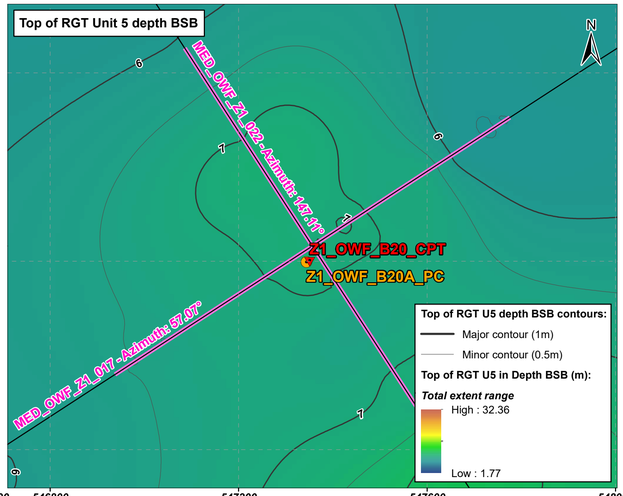


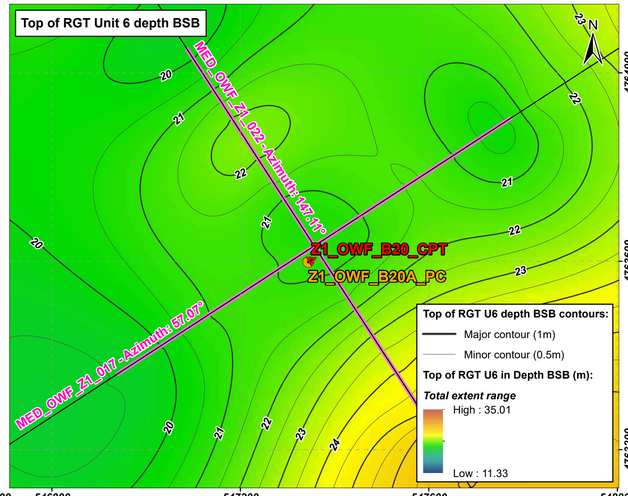


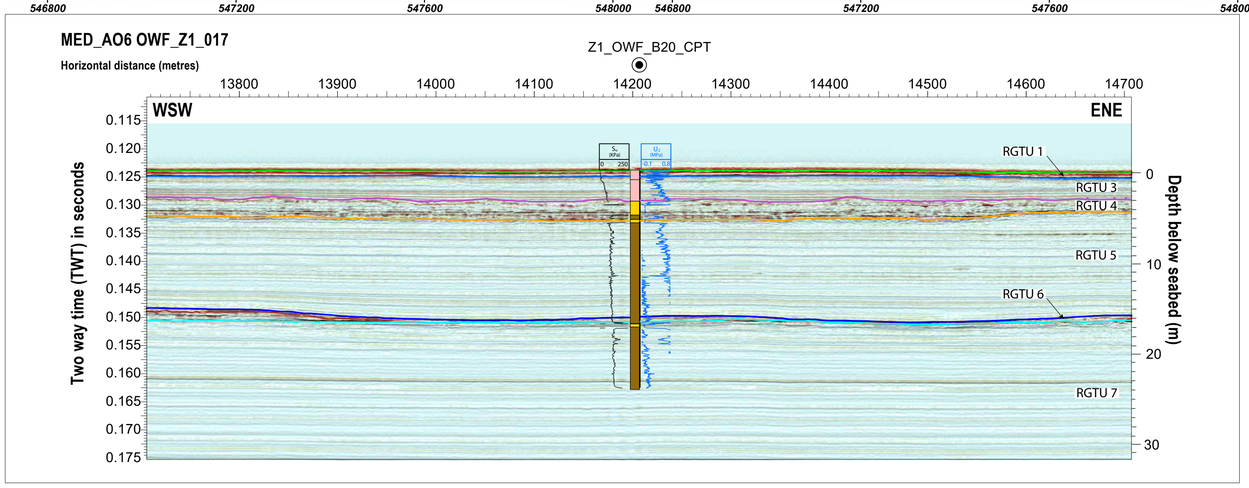


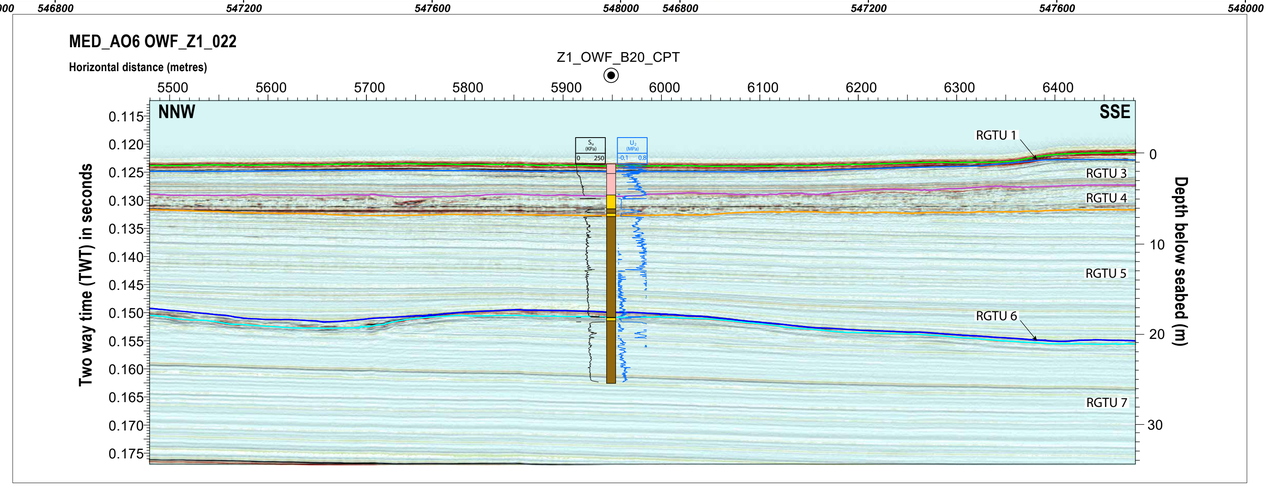








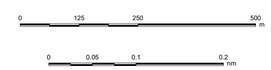




MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE

TECNOAMBIENTE
A TRADEBE COMPANY

GRAPHIC SCALE:



VERTICAL DATUM:	DATUM:	PROJECTION:
Elevation referred to Bathyelli v2 Geoid ZH	WGS84	UTM 31N

LEGEND:

Geotechnical locations:

Borehole sampling type

- CPT
- PC
- VC

Survey areas:

- Offshore Substation (OSS)
- Offshore Windfarm (OWF)
- Export Cable (EC)

UHRS tracklines:

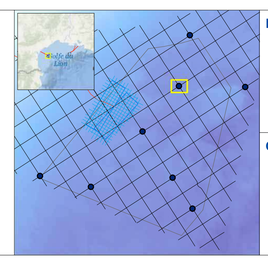
- OSS tracklines
- OWF tracklines
- Extent of the seismic profile

Soil data:

- Sand
- Silt
- Clay
- Sand and Clay

Seismic profile reflectors:

- Seabed
- Base of RGT Unit 1
- Base of RGT Unit 2
- Top of RGT Unit 4
- Top of RGT Unit 5
- Top of RGT Unit 6
- Top of RGT Unit 7



PROJECT TITLE:	AREA:	CHART:
MED_AO6 ZONE 1 AREA OFFSHORE WINDFARM GEOPHYSICAL AND GEOTECHNICAL INTEGRATION	MED_AO6 OWF Zone 1	8 / 8
CHART TITLE:	**DATE:**	**SCALE:**
GEOPHYSICAL AND GEOTECHNICAL DATA FOR BOREHOLE B20 and B20A	August 2024	1:6500 DIN A1 1:13000 DIN A3

APPENDIX IV – BOREHOLE LOGS

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT | SOIL DESCRIPTION

Torvane_Onshore; Pocket Penetrometer_Onshore; Torvane_Offshore; Pocket Penetrometer_Offshore; CIUC Triaxal; Est. from CPT:N_{kt}=15; Est. from CPT:N_{kt}=20; UU_Onshore; UU_Onshore Rem.; Motor Vane_Onshore; Motor Vane_Onshore Rem.; Fall Cone; Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)

SUBMERGED UNIT WEIGHT (kN/m^3)

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit; Liquid Limit; Moisture Content

m	ft
1	4
2	8
3	12
4	16
5	20
6	24
7	28
8	32
9	

PC

CPT

0,0m Extremely low shear strength clayey SILT

... becoming extremely low to low shear strength below 3.70m

... very loose slightly clayey silty sand below 4.2m

4,4m Low to medium shear strength silty CLAY

7,0m Medium shear strength sandy CLAY with partings of very loose sand

8,3m Loose to medium dense silty SAND

... clayey sand between 8.94m - 9.00m

9,2m Medium to high shear strength slightly sandy CLAY

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	17/04/2023
		Water Depth	-85,11 m ZH
		Coordinates	E 535595,02m; N 4759617,32m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22596 / 001

Z1_OWF_B01B_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT | SOIL DESCRIPTION

Torvane_Onshore; Pocket Penetrometer_Onshore; Torvane_Offshore; Pocket Penetrometer_Offshore; CIUC Triaxal; Est. from CPT:N_{kt}=15; Est. from CPT:N_{kt}=20; UU_Onshore; UU_Onshore Rem.; Motor Vane_Onshore; Motor Vane_Onshore Rem.; Fall Cone; Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)

SUBMERGED UNIT WEIGHT (kN/m^3)

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit; Liquid Limit; Moisture Content

m	ft
11	36
12	40
13	44
14	48
15	52
16	56
17	60
18	64
19	

9,2m Medium to high shear strength slightly sandy CLAY *(continued)*

CPT

18,7m Medium dense to dense silty SAND
... clayey sand between 18.83m - 18.86m

COMBINED CPT/VC LOG

Z1_OWF_B01B_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	17/04/2023
		Water Depth	-85,11 m ZH
		Coordinates	E 535595,02m; N 4759617,32m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22596 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
21	68				18,7m Medium dense to dense silty SAND *(continued)* ... clayey sand between 20.27m - 20.32m
22	72				21,5m High shear strength slightly sandy CLAY
23	76			CPT	
24	80				
25	84				25,0m Medium dense to dense silty SAND ... dense to very dense below 26.4m
26					
27	88				Termination depth 26.55m. Test ended due to Operational Issues Approx. Settlement 0.75m. Final PC Depth 4.90m.
28	92				
29	96				

▲ Torvane_Onshore ▼ Pocket Penetrometer_Onshore ▲ Torvane_Offshore ▼ Pocket Penetrometer_Offshore ■ CIUC Triaxal — Est. from CPT:N_{kt}=15 — Est. from CPT:N_{kt}=20
● UU_Onshore ○ UU_Onshore Rem. + Motor Vane_Onshore ⊕ Motor Vane_Onshore Rem. ◆ Fall Cone ◇ Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
○ Plastic Limit ● Liquid Limit × Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B01B_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	17/04/2023
		Water Depth	-85,11 m ZH
		Coordinates	E 535595,02m; N 4759617,32m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22596 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength clayey SILT

... becoming extremely low to low shear strength below 3.70m
... very loose slightly clayey silty sand below 3.85m

4,1m Low to medium shear strength silty CLAY

7,1m Medium shear strength sandy CLAY with partings of very loose to loose sand

8,0m Loose to medium dense silty SAND

... sandy clay between 8.30m - 8.40m

8,9m Medium to high shear strength slightly sandy CLAY

SAMPLE NO: PC

CPT

UNDRAINED SHEAR STRENGTH (kPa)
Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-85,01 m ZH
		Coordinates	E 535590,89m; N 4759605,9m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22598 / 001

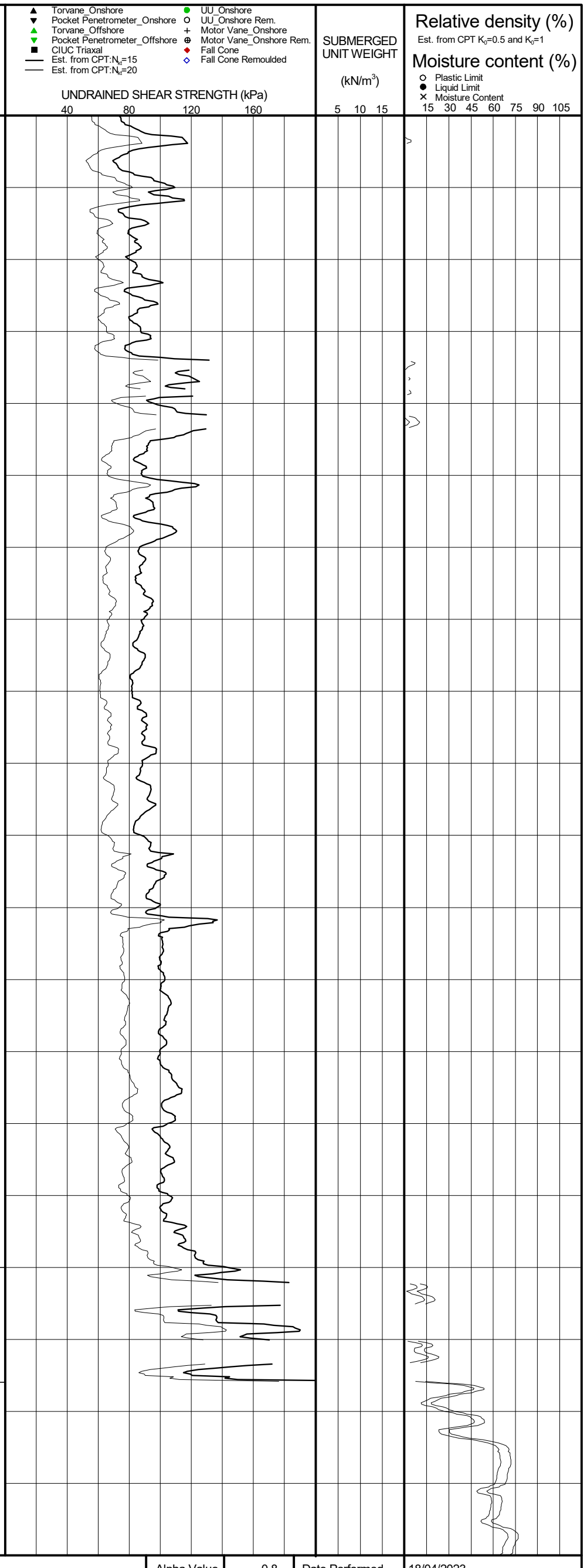
Z1_OWF_B01B_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
					8,9m Medium to high shear strength slightly sandy CLAY *(continued)*
11	36				
12	40				
13	44				
14	48				
15	52			CPT	
16	56				
17	60				
18	64				18,0m High shear strength sandy CLAY interbedded with very loose silty SAND
19					18,8m Medium dense to dense silty SAND
					... becoming medium dense to dense below 19.75m



COMBINED CPT/VC LOG

Z1_OWF_B01B_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-85,01 m ZH
		Coordinates	E 535590,89m; N 4759605,9m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22598 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
				CPT	18,8m Medium dense to dense silty SAND *(continued)*
	68				
21					Termination depth 20.73m. Test ended due to Rods Buckling Approx. Settlement 0.75m. Final VC Depth 4.90m.
22	72				
23	76				
24	80				
25					
26	84				
27	88				
28	92				
29	96				

UNDRAINED SHEAR STRENGTH (kPa)

▲ Torvane_Onshore
▼ Pocket Penetrometer_Onshore
▲ Torvane_Offshore
▼ Pocket Penetrometer_Offshore
■ CIUC Triaxal
— Est. from CPT:N_{kt}=15
— Est. from CPT:N_{kt}=20
● UU_Onshore
○ UU_Onshore Rem.
+ Motor Vane_Onshore
⊕ Motor Vane_Onshore Rem.
◆ Fall Cone
◇ Fall Cone Remoulded

40 80 120 160

SUBMERGED UNIT WEIGHT

(kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

○ Plastic Limit
● Liquid Limit
× Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B01B_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-85,01 m ZH
		Coordinates	E 535590,89m; N 4759605,9m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22598 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength clayey SILT

4,1m Low to medium shear strength slightly sandy CLAY with occasional partings of very loose to medium dense sand

7,2m Very loose to loose silty SAND interbedded with medium to high shear strength sandy CLAY

7,8m Medium to high shear strength slightly sandy CLAY

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

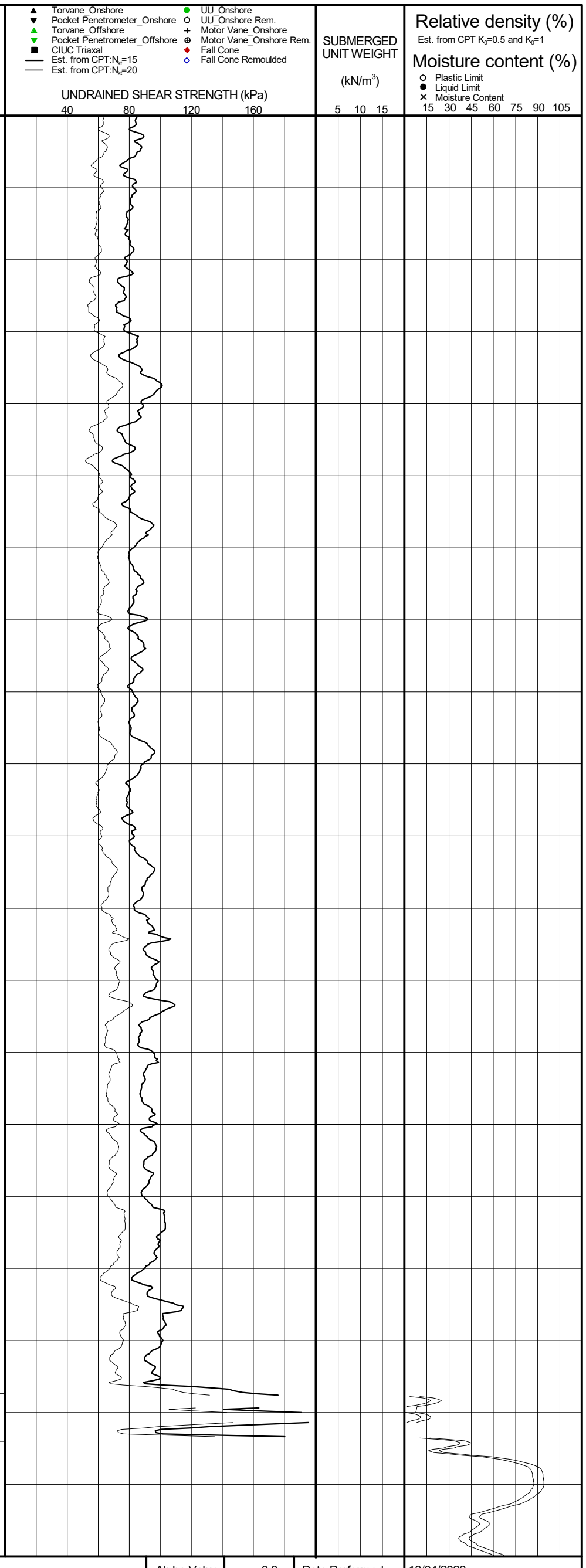
COMBINED CPT/VC LOG

Z1_OWF_B02B_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-88,90 m ZH
		Coordinates	E 536024,66m; N 4756343,19m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22598 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité
TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
11	36				7,8m Medium to high shear strength slightly sandy CLAY *(continued)*
12	40				
13	44				
14	48				
15				CPT	
	52				
16					
17	56				
18	60				
19					18,9m Very loose silty SAND interbedded with high shear strength sandy CLAY
	64				19,2m Medium dense to dense silty SAND ... loose between 19.23m - 19.27m



SUBMERGED UNIT WEIGHT (kN/m³)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

Plastic Limit
Liquid Limit
Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B02B_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-88,90 m ZH
		Coordinates	E 536024,66m; N 4756343,19m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22598 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

19,2m Medium dense to dense silty SAND *(continued)*

... clayey sand between 20.60m - 20.90m

21,5m High shear strength sandy CLAY with occasional partings of very loose to loose sand

CPT

24,1m High shear strength slightly sandy CLAY

... becoming high to very high shear strength below 27.90m

28,2m Medium dense silty SAND

Termination depth 28.29m. Test ended due to Rods Buckling
Approx. Settlement 0.69m

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-88,90 m ZH
		Coordinates	E 536024,66m; N 4756343,19m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22598 / 001

Z1_OWF_B02B_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength slightly clayey SILT

1,7m Very low to low shear strength silty CLAY

... becoming low to medium shear strength below 2.25m

3,1m Medium shear strength slightly sandy CLAY

4,5m Medium to high shear strength sandy CLAY

5,0m Dense to very dense silty SAND

5,9m High to very high shear strength sandy CLAY

6,2m Medium to high shear strength slightly sandy CLAY with occasional sand partings

CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

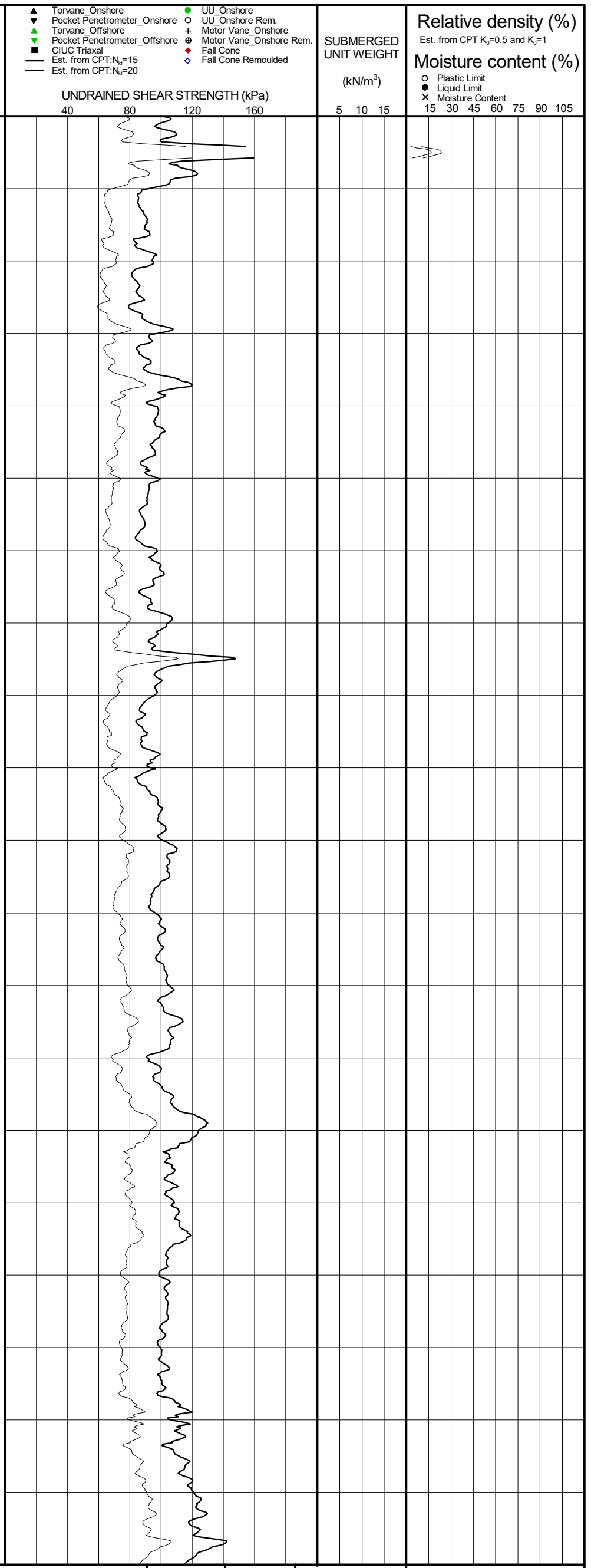
Z1_OWF_B03_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-93,90 m ZH
		Coordinates	E 540173,2m; N 4755417,32m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
					6,2m Medium to high shear strength slightly sandy CLAY with occasional sand partings *(continued)*
11	36				
12	40				
13	44				
14	48				
15	52			CPT	
16	56				
17	60				
18	64				
19					



COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-93,90 m ZH
		Coordinates	E 540173,2m; N 4755417,32m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

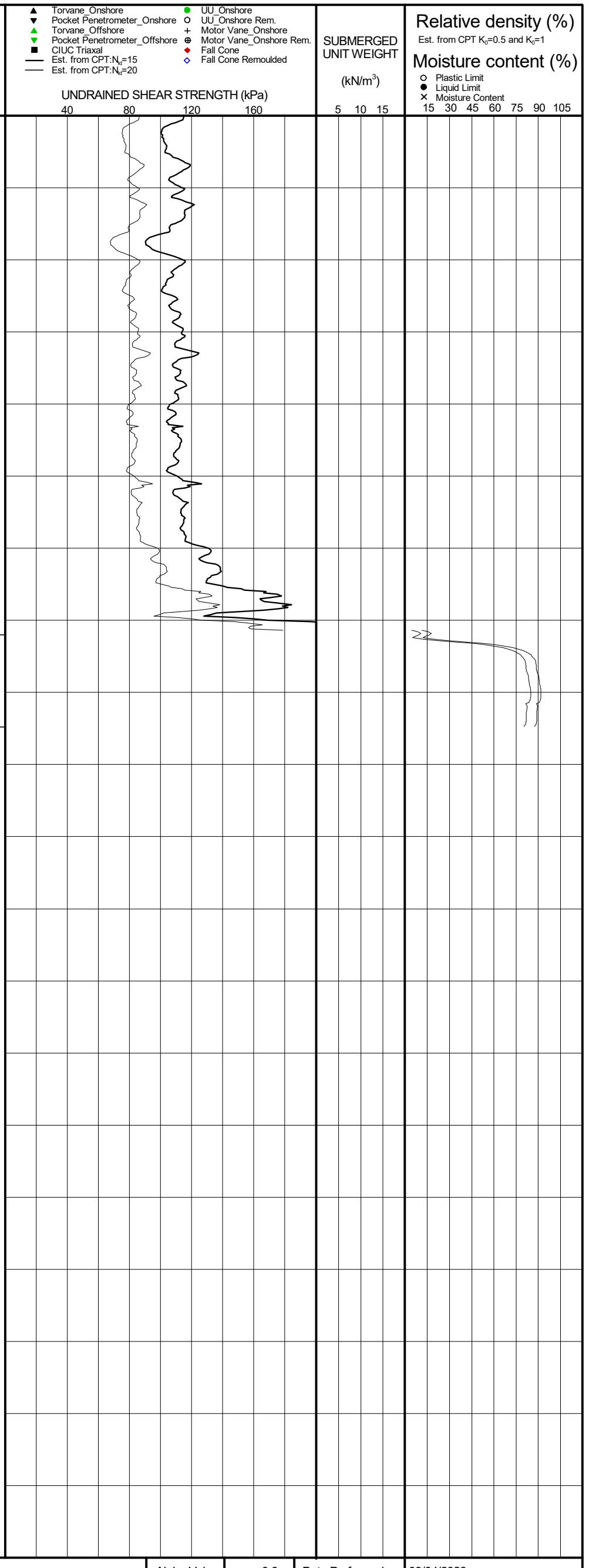
Z1_OWF_B03_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
21	68				6,2m Medium to high shear strength slightly sandy CLAY with occasional sand partings *(continued)*
22	72			CPT	
23	76				... becoming high to very high shear strength sandy clay below 23.25m
24					23,6m Dense to very dense SAND
	80				Termination depth 24.24m. Test ended due to Operational Issues Approx. Settlement 0.58m
25					
26	84				
27	88				
28	92				
29	96				



SUBMERGED UNIT WEIGHT (kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

Plastic Limit
Liquid Limit
Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B03_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-93,90 m ZH
		Coordinates	E 540173,2m; N 4755417,32m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

DEPTH m / ft | SOIL PROFILE | SAMPLE NO | CPT | SOIL DESCRIPTION

0,0m Extremely low shear strength slightly clayey SILT

1,1m Very low to low shear strength silty CLAY

... becoming low to medium shear strength below 1.70m

3,1m Medium shear strength slightly sandy CLAY

4,4m High to very high shear strength sandy CLAY

4,6m Medium dense to very dense silty SAND

5,6m Very high shear strength sandy CLAY

5,9m Medium to high shear strength slightly sandy CLAY with occasional sand partings

CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B03_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	10/04/2023
		Water Depth	-93,96 m ZH
		Coordinates	E 540185,64m; N 4755420,06m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22596 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité
TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT | SOIL DESCRIPTION

Torvane_Onshore; Pocket Penetrometer_Onshore; Torvane_Offshore; Pocket Penetrometer_Offshore; CIUC Triaxal; Est. from CPT:N_{kt}=15; Est. from CPT:N_{kt}=20; UU_Onshore; UU_Onshore Rem.; Motor Vane_Onshore; Motor Vane_Onshore Rem.; Fall Cone; Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa): 40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3): 5 10 15

Relative density (%) — Est. from CPT K_0=0.5 and K_0=1

Moisture content (%): Plastic Limit; Liquid Limit; Moisture Content — 15 30 45 60 75 90 105

5,9m Medium to high shear strength slightly sandy CLAY with occasional sand partings *(continued)*

m: 11 12 13 14 15 16 17 18 19

ft: 36 40 44 48 52 56 60 64

CPT

COMBINED CPT/VC LOG

Alpha Value	0.8
Date Performed	10/04/2023
Water Depth	-93,96 m ZH
Coordinates	E 540185,64m; N 4755420,06m
Made By/Date	SC - 14/11/2023
Checked By/Date	AN - 17/11/2023
Cone Number	S10CFIIP.S22596 / 001

Z1_OWF_B03_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
					Termination depth 19.98m. Test ended due to Maximum Cone Inclination Approx. Settlement 0.47m
21	68				
22	72				
23	76				
24	80				
25	84				
26	88				
27	92				
28	96				
29					

▲ Torvane_Onshore ▼ Pocket Penetrometer_Onshore ▲ Torvane_Offshore ▼ Pocket Penetrometer_Offshore ■ CIUC Triaxal — Est. from CPT:N_{kt}=15 — Est. from CPT:N_{kt}=20
● UU_Onshore ○ UU_Onshore Rem. + Motor Vane_Onshore ⊕ Motor Vane_Onshore Rem. ◆ Fall Cone ◇ Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
○ Plastic Limit
● Liquid Limit
× Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B03_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	10/04/2023
		Water Depth	-93,96 m ZH
		Coordinates	E 540185,64m; N 4755420,06m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22596 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength clayey SILT

4,8m Low to medium strength clayey SILT with laminations of very loose to loose sand

5,5m Medium shear strength silty CLAY

6,3m Medium to high shear strength sandy silty CLAY

7,3m Medium shear strength silty CLAY

7.65m - 7.9m sandy

from 7.95m high shear strength

8,2m Very loose to loose silty SAND

8,9m Medium dense silty SAND

9,3m Medium to high shear strength silty CLAY with occasional sand partings

SAMPLE NO: PC

CPT

UNDRAINED SHEAR STRENGTH (kPa)

- Torvane_Onshore
- Pocket Penetrometer_Onshore
- Torvane_Offshore
- Pocket Penetrometer_Offshore
- CIUC Triaxal
- Est. from CPT:N_{kt}=15
- Est. from CPT:N_{kt}=20
- UU_Onshore
- UU_Onshore Rem.
- Motor Vane_Onshore
- Motor Vane_Onshore Rem.
- Fall Cone
- Fall Cone Remoulded

40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

- Plastic Limit
- Liquid Limit
- Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B05_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

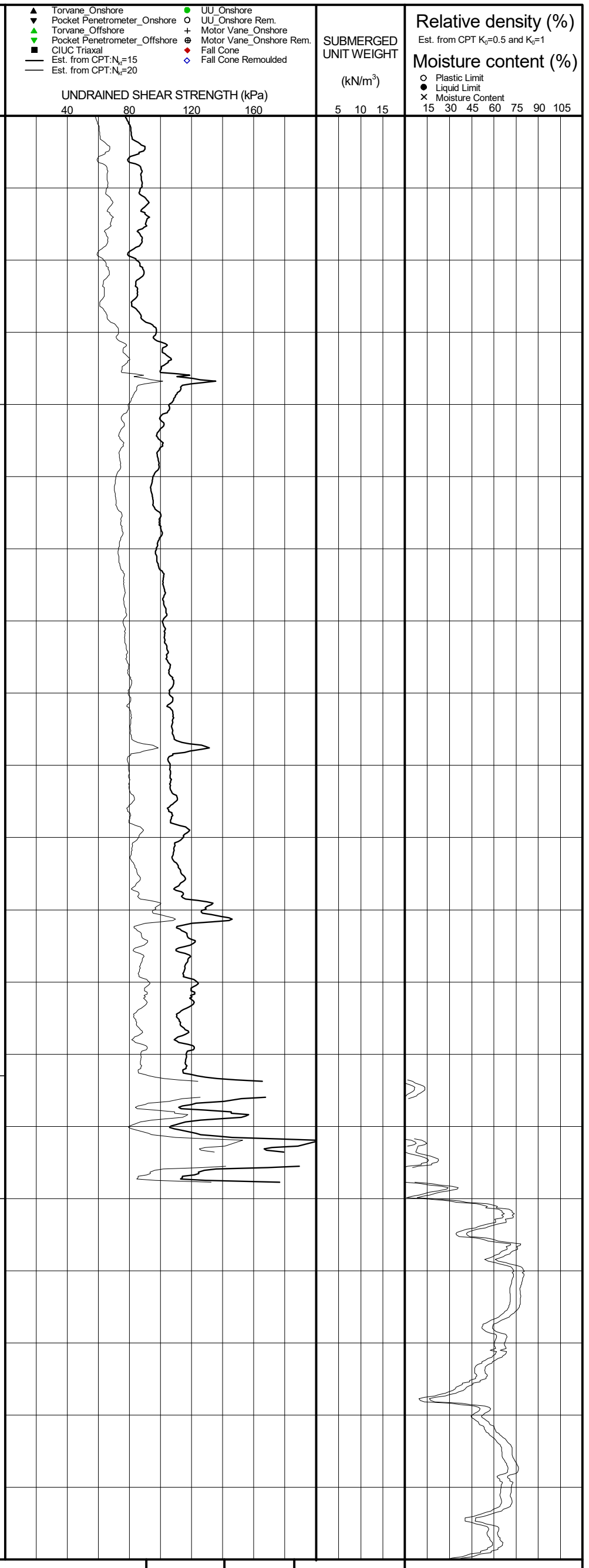
Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-82,35 m ZH
		Coordinates	E 537802,22m; N 4764592,9m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
11	36				9,3m Medium to high shear strength silty CLAY with occasional sand partings *(continued)*
12	40				12,0m High shear strength silty CLAY
13	44				from 14.35m with occasional sand partings
14	48				
15	52			CPT	
16					
17	56				16,7m High to very high shear strength sandy CLAY
18	60				17,5m Medium dense to dense silty SAND
19	64				18.9m - 19.0m very loose to loose clayey



COMBINED CPT/VC LOG

Z1_OWF_B05_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-82,35 m ZH
		Coordinates	E 537802,22m; N 4764592,9m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL DESCRIPTION
21	68	20,1m High to very high shear strength sandy CLAY
		20,5m High shear strength CLAY
22	72	21,6m High to very high shear strength silty CLAY
23	76	22,5m Medium dense silty SAND
		23,1m High to very high shear strength silty CLAY
24	80	23,4m High shear strength CLAY
25		24,8m High to very high shear strength sandy CLAY
	84	25,4m Dense to very dense SAND
26		Termination depth 25.71m. Test ended due to rods buckling Approx. Settlement 0.73m. Final PC Depth 5.95m.
	88	
27		
28	92	
29	96	

SOIL PROFILE

SAMPLE NO

CPT

CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B05_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-82,35 m ZH
		Coordinates	E 537802,22m; N 4764592,9m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength slightly clayey SILT

1,4m Loose to medium dense silty SAND

2,1m Low to medium shear strength sandy CLAY

3,7m Medium shear strength silty CLAY

6,9m High shear strength silty CLAY interbedded with very loose to medium dense silty SAND

7,8m Medium to high shear strength slightly sandy CLAY

CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

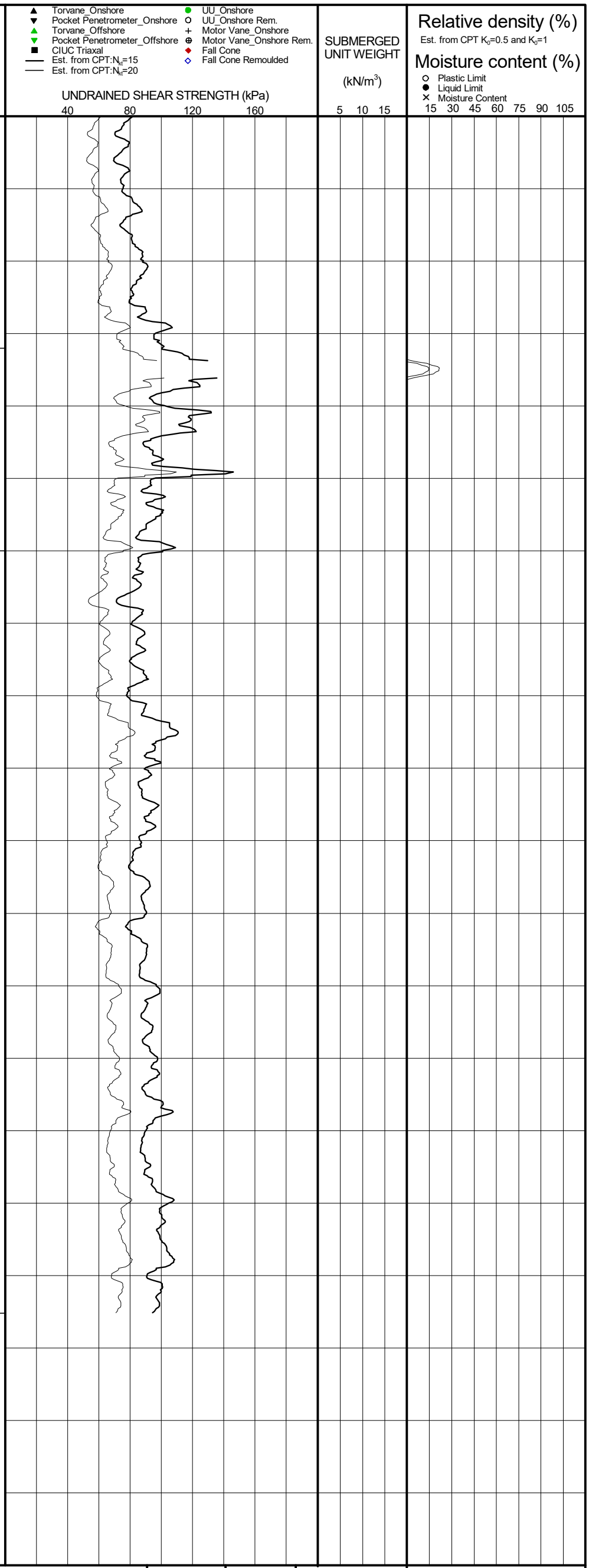
Z1_OWF_B07_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	04/04/2023
		Water Depth	-89,34 m ZH
		Coordinates	E 548245,88m; N 4767784,63m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22599 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
11	36				7,8m Medium to high shear strength slightly sandy CLAY *(continued)*
12	40				11,6m High shear strength silty CLAY interbedded with very loose to loose silty SAND
13	44				13,0m Medium to high shear strength sandy CLAY
14	48			CPT	
15	52				
16	56				
17	60				
18	64				Termination depth 18.26m. Test ended due to Operational Issues Approx. Settlement 0.82m
19					



COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	04/04/2023
		Water Depth	-89,34 m ZH
		Coordinates	E 548245,88m; N 4767784,63m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22599 / 001

Z1_OWF_B07_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength clayey SILT

... becoming sandy below 1.2m

1,5m Medium dense silty SAND

1,8m Low to medium shear strength silty CLAY

... becoming medium to high shear strength sandy clay below 6.55m

6,8m Loose to medium dense clayey SAND

7,3m Medium to high shear strength slightly sandy CLAY

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-89,37 m ZH
		Coordinates	E 548259,43m; N 4767796,5m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

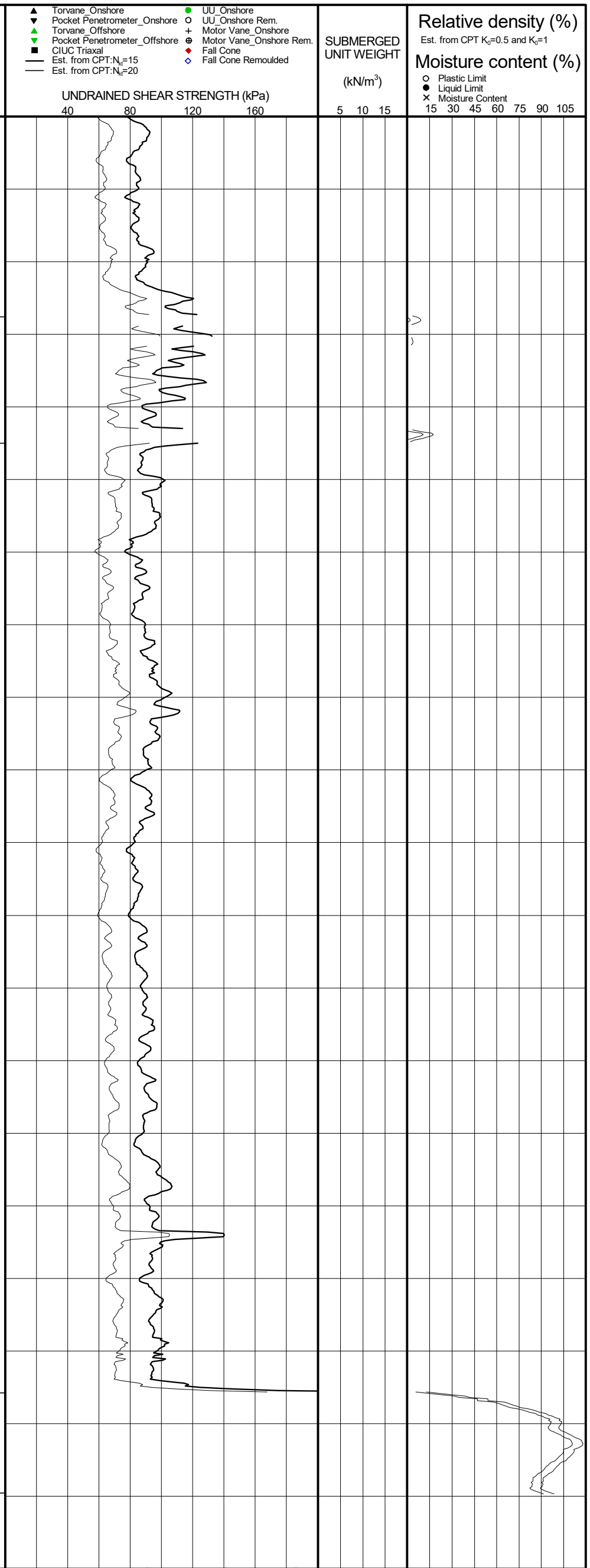
Z1_OWF_B07B_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
11	36				7,3m Medium to high shear strength slightly sandy CLAY *(continued)*
12	40				11,4m Medium to high shear strength sandy CLAY with occasional sand partings
13	44				12,3m Medium to high shear strength slightly sandy CLAY
14	48			CPT	
15					
16	52				
17	56				
18	60				
19	64				18,8m Dense to very dense silty SAND
					Termination depth 19.48m. Test ended due to Rods Buckling Approx. Settlement 0.67m



COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-89,37 m ZH
		Coordinates	E 548259,43m; N 4767796,5m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

Z1_OWF_B07B_CPTa
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

- 0,0m Extremely low to very low strength clayey SILT
- 0,7m Loose to medium dense silty SAND
- 1,0m Dense to very dense slightly gravelly silty SAND
- 3,9m Medium dense to dense slightly gravelly silty SAND
- 6,1m High shear strength silty CLAY interbedded with medium dense silty SAND
- 6,8m High shear strength silty CLAY
- 7,5m Dense silty SAND
- 8,3m Very loose to loose sandy SILT
- 8,9m High shear strength sandy CLAY

UNDRAINED SHEAR STRENGTH (kPa)

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

Plastic Limit
Liquid Limit
Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	04/04/2023
		Water Depth	-88,86 m ZH
		Coordinates	E 553283,12m; N 4771040,14m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22597 / 001

Z1_OWF_B08_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT | SOIL DESCRIPTION

Torvane_Onshore; Pocket Penetrometer_Onshore; Torvane_Offshore; Pocket Penetrometer_Offshore; CIUC Triaxal; Est. from CPT:N_{kt}=15; Est. from CPT:N_{kt}=20; UU_Onshore; UU_Onshore Rem.; Motor Vane_Onshore; Motor Vane_Onshore Rem.; Fall Cone; Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)

SUBMERGED UNIT WEIGHT (kN/m^3)

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

Plastic Limit; Liquid Limit; Moisture Content

m	ft	SOIL DESCRIPTION	UNDRAINED SHEAR STRENGTH (kPa) 40 80 120 160	SUBMERGED UNIT WEIGHT (kN/m^3) 5 10 15	Relative density (%) / Moisture content (%) 15 30 45 60 75 90 105
11	36	8,9m High shear strength sandy CLAY *(continued)*			
12	40				
13	44				
14	48				
15	52				
16	56				
17	60				
18	64				
19					

CPT

COMBINED CPT/VC LOG

Z1_OWF_B08_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	04/04/2023
		Water Depth	-88,86 m ZH
		Coordinates	E 553283,12m; N 4771040,14m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
21	68				8,9m High shear strength sandy CLAY *(continued)*
22	72			CPT	
23	76				23,6m Dense to very dense SAND
24	80				Termination depth 23.79m. Test ended due to rods buckling Approx. Settlement 0.79m
25	84				
26	88				
27	92				
28	96				
29					

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B08_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	04/04/2023
		Water Depth	-88,86 m ZH
		Coordinates	E 553283,12m; N 4771040,14m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	DS10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité
TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength silty CLAY

0,5m Very low to low shear strength sandy SILT

... becoming medium shear strength below 0.79m

1,0m Very dense slightly silty slightly gravelly SAND

... medium dense to dense down to 1.20m

3,1m Very dense SAND

... dense to very dense below 4.55m

7,6m Medium dense to dense gravelly silty SAND

9,4m High shear strength sandy CLAY interbedded with loose to medium dense silty SAND

SAMPLE NO: VC

CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-95,47 m ZH
		Coordinates	E 552748,23m; N 4763567,91m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

Z1_OWF_B10_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
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TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT | SOIL DESCRIPTION

Torvane_Onshore; Pocket Penetrometer_Onshore; Torvane_Offshore; Pocket Penetrometer_Offshore; CIUC Triaxal; Est. from CPT:N_{kt}=15; Est. from CPT:N_{kt}=20; UU_Onshore; UU_Onshore Rem.; Motor Vane_Onshore; Motor Vane_Onshore Rem.; Fall Cone; Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)

SUBMERGED UNIT WEIGHT (kN/m^3)

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit; Liquid Limit; Moisture Content

9,4m High shear strength sandy CLAY interbedded with loose to medium dense silty SAND *(continued)*

10,6m Medium high to high shear strength slightly sandy CLAY

... high shear strength between 13.1m -14.4m

... high shear strength between 16.95m -18.0m

COMBINED CPT/VC LOG

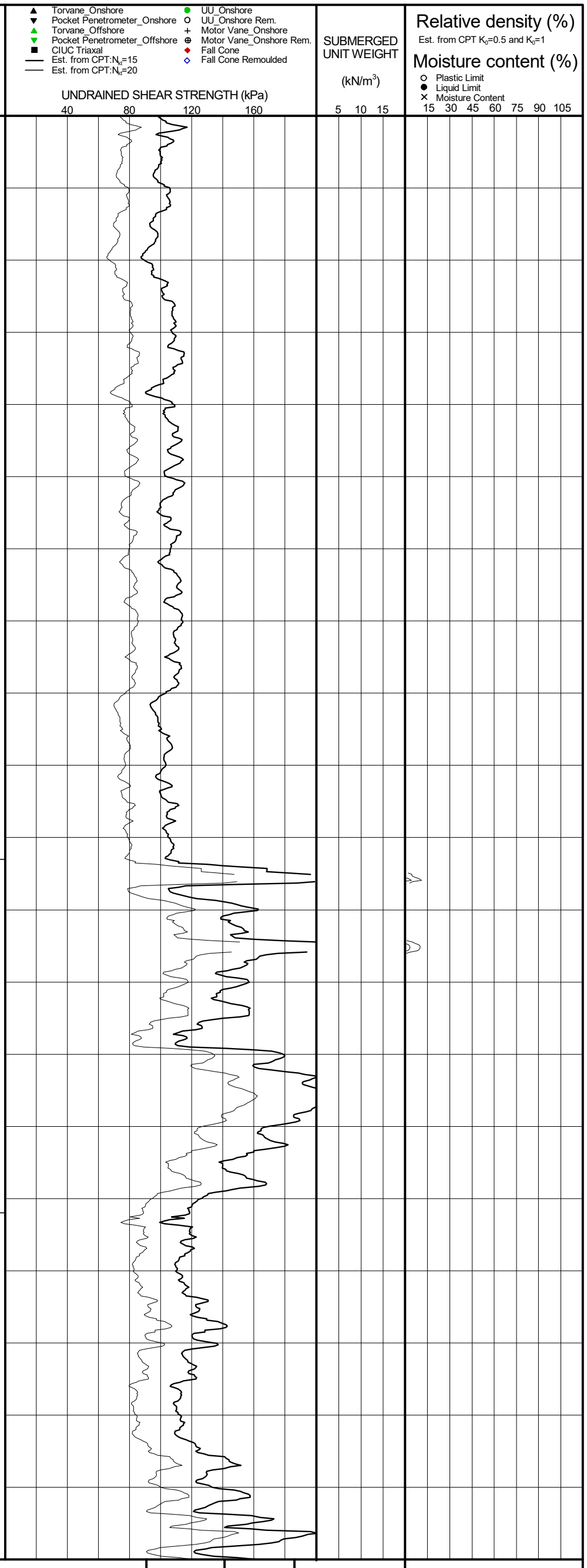
Z1_OWF_B10_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-95,47 m ZH
		Coordinates	E 552748,23m; N 4763567,91m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
21	68				10,6m Medium high to high shear strength slightly sandy CLAY *(continued)*
22	72				
23	76				
24	80				
25	84			CPT	25,2m High to very high shear strength slightly gravelly sandy CLAY
26	88				
27	92				27,6m High shear strength sandy CLAY
28	96				... becoming slightly gravelly below 29.3m
29					



COMBINED CPT/VC LOG

Z1_OWF_B10_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-95,47 m ZH
		Coordinates	E 552748,23m; N 4763567,91m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
				CPT	27,6m High shear strength sandy CLAY *(continued)*
	100				
31					Termination depth 30.64m. Test ended due to Target Depth reached Approx. Settlement 0.50m. Final VC Depth 5.46m.
	104				
32					
	108				
33					
34	112				
35					
	116				
36					
	120				
37					
	124				
38					
39	128				

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B10_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-95,47 m ZH
		Coordinates	E 552748,23m; N 4763567,91m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
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TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
0					0,0m Extremely low shear strength clayey SILT
					... becoming very low to low shear strength below 0.75m
1	4				0,9m Loose to very loose silty SAND interbedded with low shear strength CLAY
2	8				... interbedded with high shear strength clay below 1.91m
3	12				... interbedded with low shear strength clay below 3.81m
4	16				4,4m Medium to high shear strength sandy CLAY
5	20			CPT	5,1m Medium dense to dense gravelly SAND
6	24				5,9m Very dense silty SAND
7	28				8,9m High shear strength sandy CLAY
8	32				9,2m Dense to very dense slightly gravelly silty SAND
9					

▲ Torvane_Onshore
▼ Pocket Penetrometer_Onshore
▲ Torvane_Offshore
▼ Pocket Penetrometer_Offshore
■ CIUC Triaxal
— Est. from CPT:N_{kt}=15
— Est. from CPT:N_{kt}=20
● UU_Onshore
○ UU_Onshore Rem.
+ Motor Vane_Onshore
⊕ Motor Vane_Onshore Rem.
◆ Fall Cone
◇ Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
○ Plastic Limit
● Liquid Limit
× Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B13_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-99,94 m ZH
		Coordinates	E 550109,22m; N 4751107,06m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

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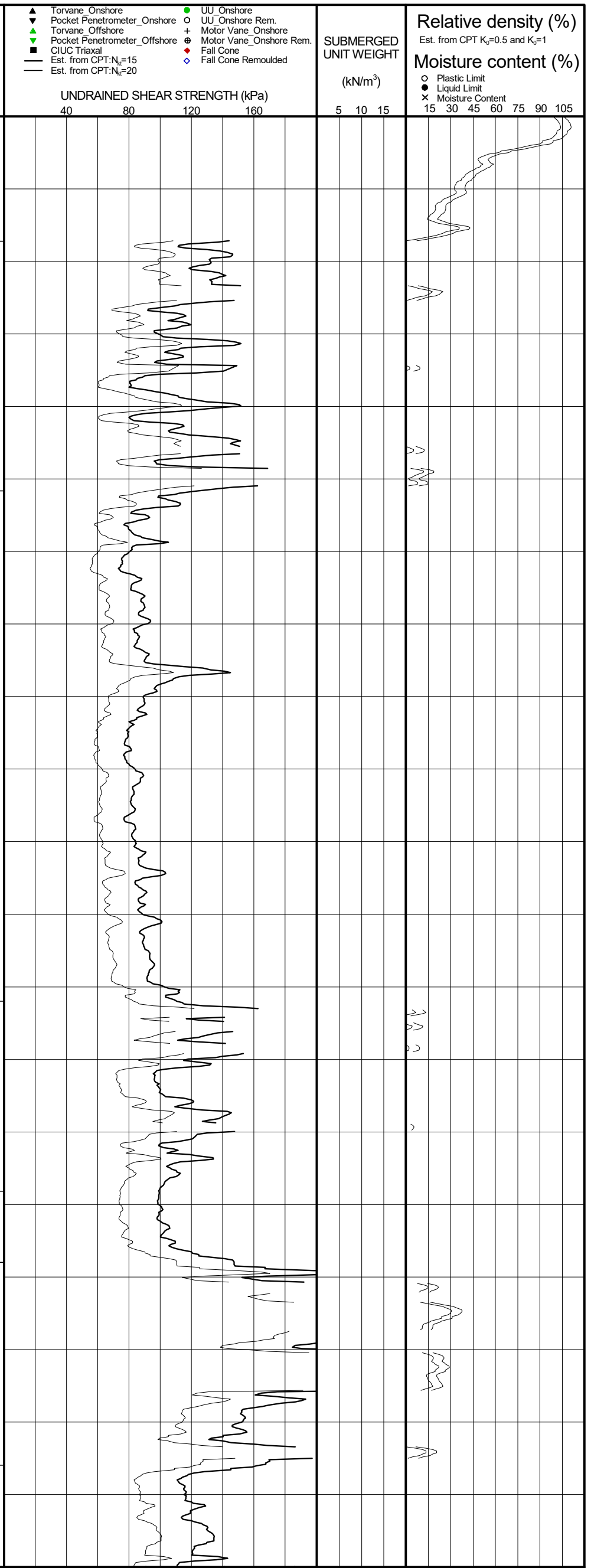
TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
					9,2m Dense to very dense slightly gravelly silty SAND *(continued)*
11	36				10,9m Medium to high shear strength silty CLAY interbedded with very loose silty SAND
12	40				
					12,6m Medium to high shear strength silty CLAY with sand partings
13	44				
14	48				
15				CPT	
	52				
16					16,1m High shear strength sandy CLAY ... interbedded with very loose silty sand between 16.20m - 16.90m
17	56				
					17,4m High shear strength silty CLAY
18	60				17,9m High to very high shear strength silty CLAY interbedded with very loose to loose silty SAND
19					
	64				19,3m High shear strength silty CLAY



COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-99,94 m ZH
		Coordinates	E 550109,22m; N 4751107,06m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

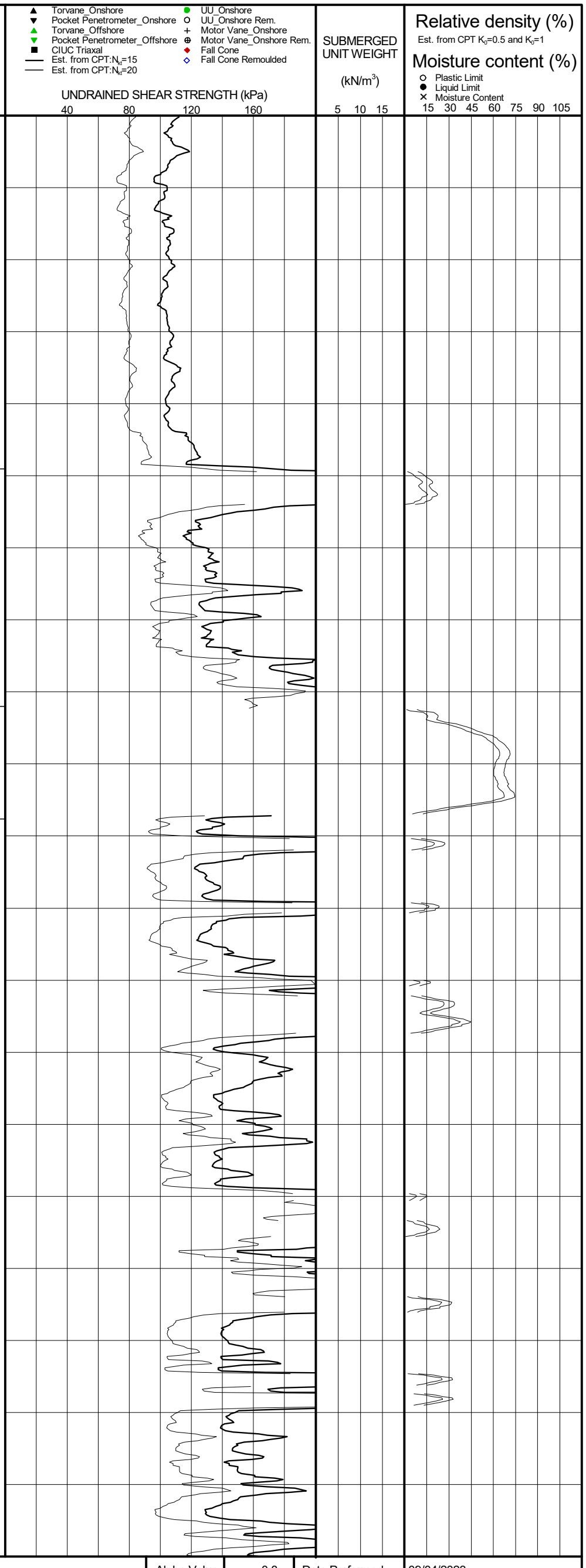
Z1_OWF_B13_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
21	68				19,3m High shear strength silty CLAY *(continued)*
22	72				
23	76				22,5m High shear strength sandy CLAY ... very loose to loose sand between 22.45m - 22.70m
24	80				24,1m Medium dense to dense SAND
25	84			CPT	24,9m High to very high shear strength silty CLAY interbedded with very loose to loose silty SAND
26	88				
27	92				
28	96				
29					



COMBINED CPT/VC LOG

Z1_OWF_B13_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

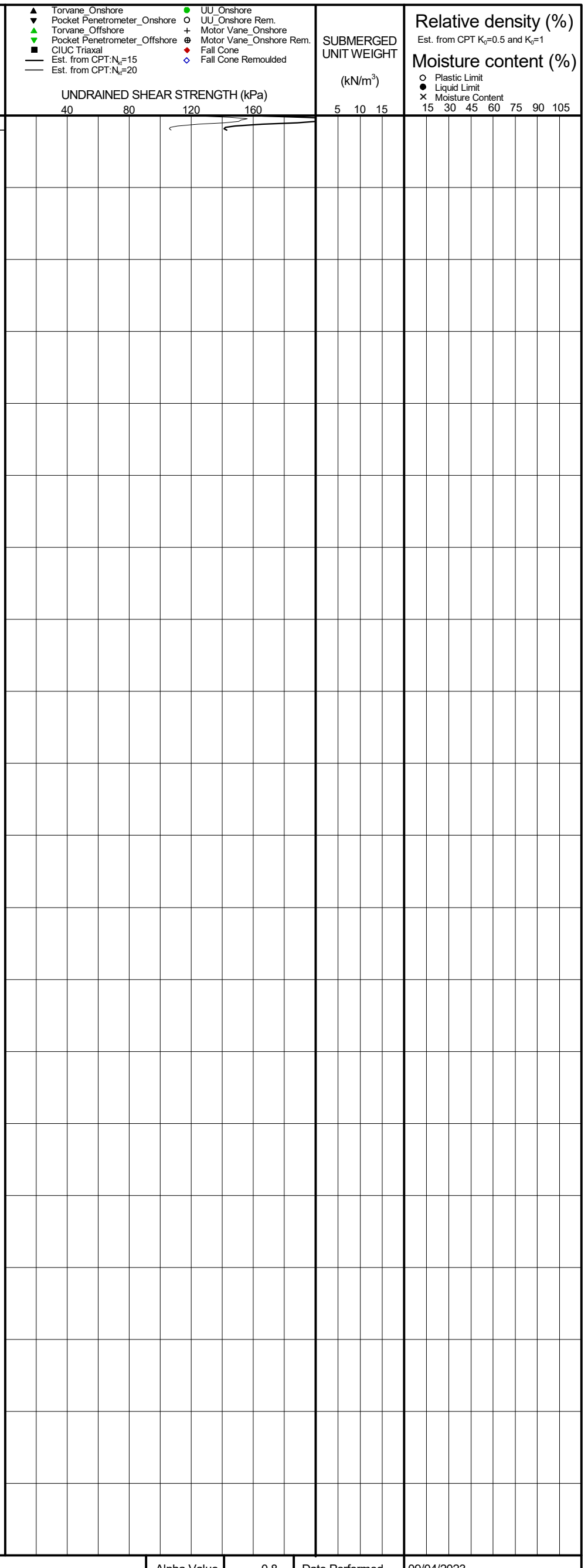
Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-99,94 m ZH
		Coordinates	E 550109,22m; N 4751107,06m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
				CPT	Termination depth 30.10m. Test ended due to Target Depth reached Approx. Settlement 0.58m
31	100				
32	104				
33	108				
34	112				
35	116				
36	120				
37	124				
38					
39	128				



SUBMERGED UNIT WEIGHT (kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

Plastic Limit
Liquid Limit
Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B13_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-99,94 m ZH
		Coordinates	E 550109,22m; N 4751107,06m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength clayey SILT

0,8m Very low to medium shear strength sandy CLAY

1,2m Medium dense silty SAND

1,7m Low to medium shear strength slightly sandy CLAY

3,9m Medium dense to dense silty SAND
.... becoming loose clayey sand between 4.05m - 4.15m

5,3m Very dense silty SAND

.... becoming loose to medium dense clayey sand between 7.90m - 8.08m

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B14A_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-96,38 m ZH
		Coordinates	E 548461,56m; N 4753650,04m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité
TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

5,3m Very dense silty SAND *(continued)*

11,2m High shear strength sandy CLAY interbedded with loose to medium dense clayey SAND

12,1m Dense to very dense clayey SAND

.... becoming loose to medium dense clayey sand between 12.50m - 12.80m

.... becoming medium dense below 13.40m

13,7m Dense to very dense silty SAND

16,0m Medium dense to dense slightly clayey SAND

.... becoming very loose to loose clayey sand between 17.40m - 17.50m

18,8m High shear strength sandy CLAY

19,2m Medium dense to dense clayey SAND

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

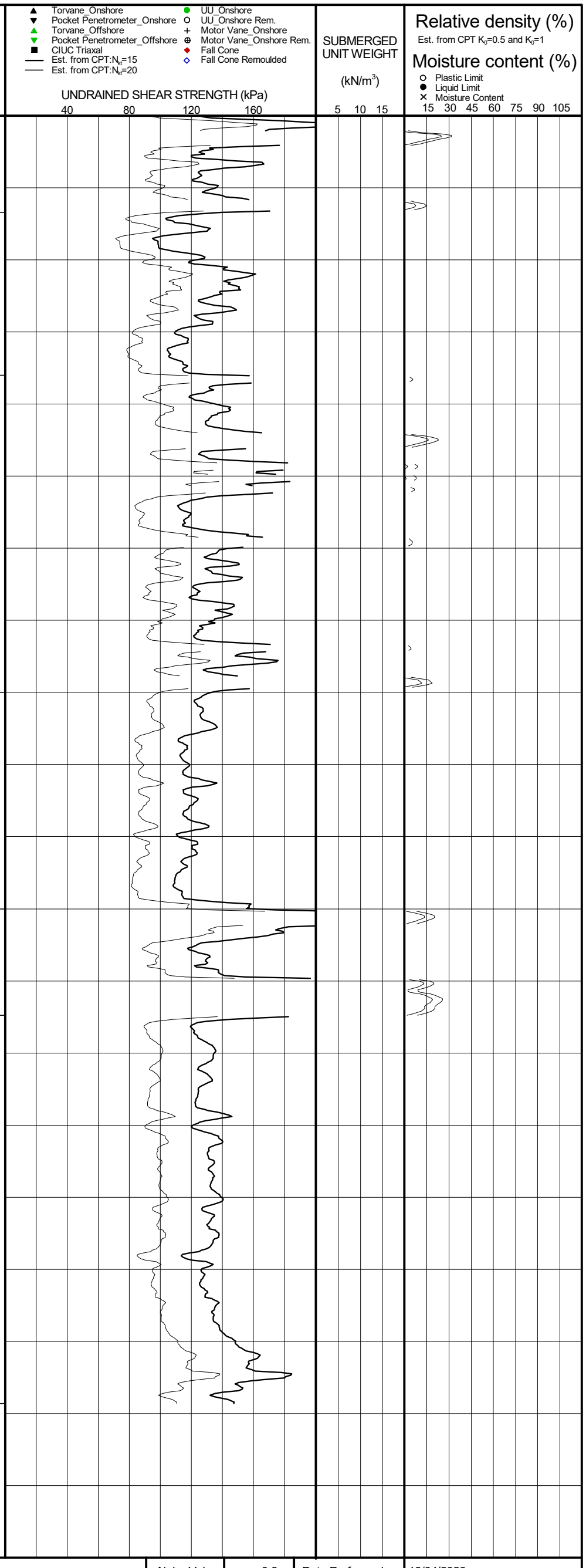
Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-96,38 m ZH
		Coordinates	E 548461,56m; N 4753650,04m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

Z1_OWF_B14A_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
21	68				19,8m High shear strength sandy CLAY interbedded with very loose to loose clayey SAND *(continued)*
					20,7m High shear strength sandy CLAY
22	72				21,8m High shear strength sandy CLAY interbedded with very loose to loose clayey SAND
23	76				
24	80			CPT	24,0m High shear strength slightly sandy CLAY
25					
	84				25,5m High shear strength sandy CLAY interbedded with very loose to loose clayey SAND
26					
	88				26,2m High shear strength slightly sandy CLAY
27					
28	92				
29	96				Termination depth 28.93m. Test ended due to Maximum Cone Inclination Approx. Settlement 0.67m



SUBMERGED UNIT WEIGHT

(kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

Plastic Limit
Liquid Limit
Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B14A_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	18/04/2023
		Water Depth	-96,38 m ZH
		Coordinates	E 548461,56m; N 4753650,04m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

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TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength slightly clayey sandy SILT

... becoming very low to low shear strength below 0.98m

1,1m Medium dense sandy SILT

1,7m Low to medium shear strength slightly clayey slightly sandy SILT

2,3m Low to medium shear strength slightly sandy clayey SILT

3,3m Medium to high shear strength sandy SILT with sand partings

5,0m Loose to medium dense slightly gravelly silty SAND

5,7m Medium to high shear strength sandy SILT

... becoming high to very high shear strength below 6.55m

7,1m Very dense SAND

... dense between 8.12m - 8.52m

SAMPLE NO: VC

CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-94,30 m ZH
		Coordinates	E 546832,01m; N 4756171,29m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

Z1_OWF_B15_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
					7,1m Very dense SAND *(continued)*
11	36				10,5m High to very high shear strength very sandy CLAY interbedded with very loose to loose silty SAND
12	40				
	44				
13					
14	48				
15				CPT	
	52				
16					16,2m High shear strength slightly sandy CLAY
	56				
17					
	60				
18					
	64				
19					

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B15_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

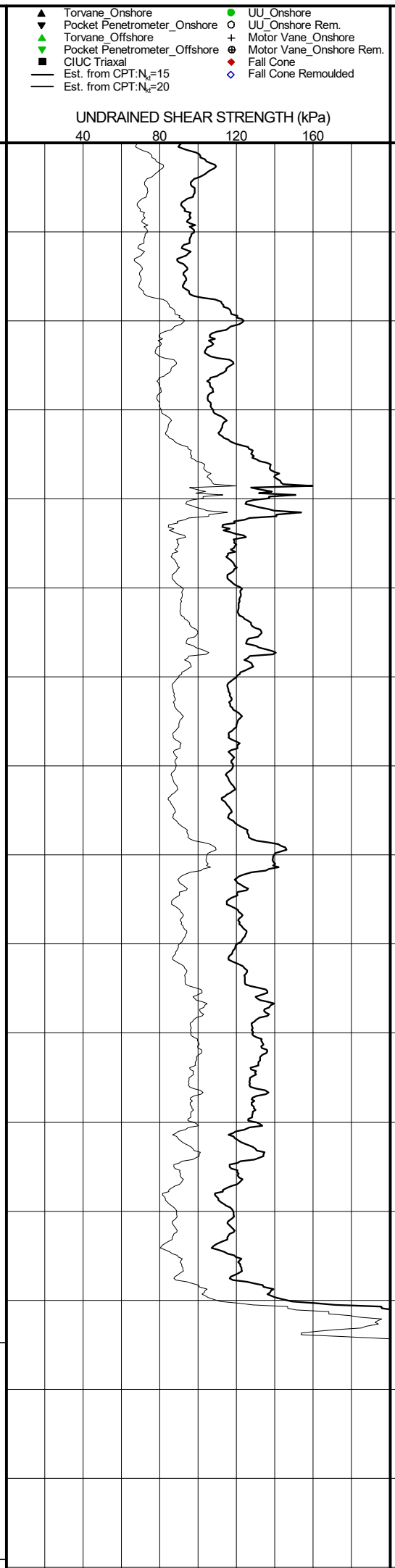
Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-94,30 m ZH
		Coordinates	E 546832,01m; N 4756171,29m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

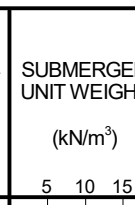
MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité

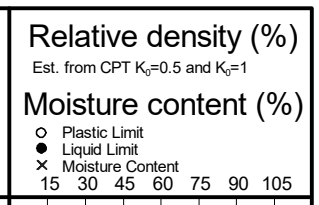
TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
					16,2m High shear strength slightly sandy CLAY *(continued)*
21	68				
22	72				
23	76				
24	80			CPT	
25	84				
26	88				... becoming very high shear strength below 26.55m
27					26,7m Very dense slightly gravelly silty SAND
28	92				Termination depth 27.96m. Test ended due to Maximum Thrust Approx. Settlement 0.70m. Final VC Depth 6.28m.
29	96				







COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	09/04/2023
		Water Depth	-94,30 m ZH
		Coordinates	E 546832,01m; N 4756171,29m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

Z1_OWF_B15_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté
Égalité
Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH (m / ft) | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength sandy CLAY

0,5m Extremely low shear strength slightly sandy clayey SILT

1,1m Very low to low shear strength slightly clayey sandy SILT

... becoming medium shear strength below 1.95m

2,4m Medium shear strength clayey SILT interbedded with very loose to loose silty SAND

3,3m Very dense slightly gravelly silty SAND

7,1m Medium high to high shear strength sandy CLAY with occasional partings of very loose sand

SAMPLE NO: PC

CPT: CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa): 40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3): 5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%): 15 30 45 60 75 90 105
Plastic Limit
Liquid Limit
Moisture Content

COMBINED CPT/VC LOG

Z1_OWF_B18_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-94,02 m ZH
		Coordinates	E 544394,81m; N 4759927,8m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

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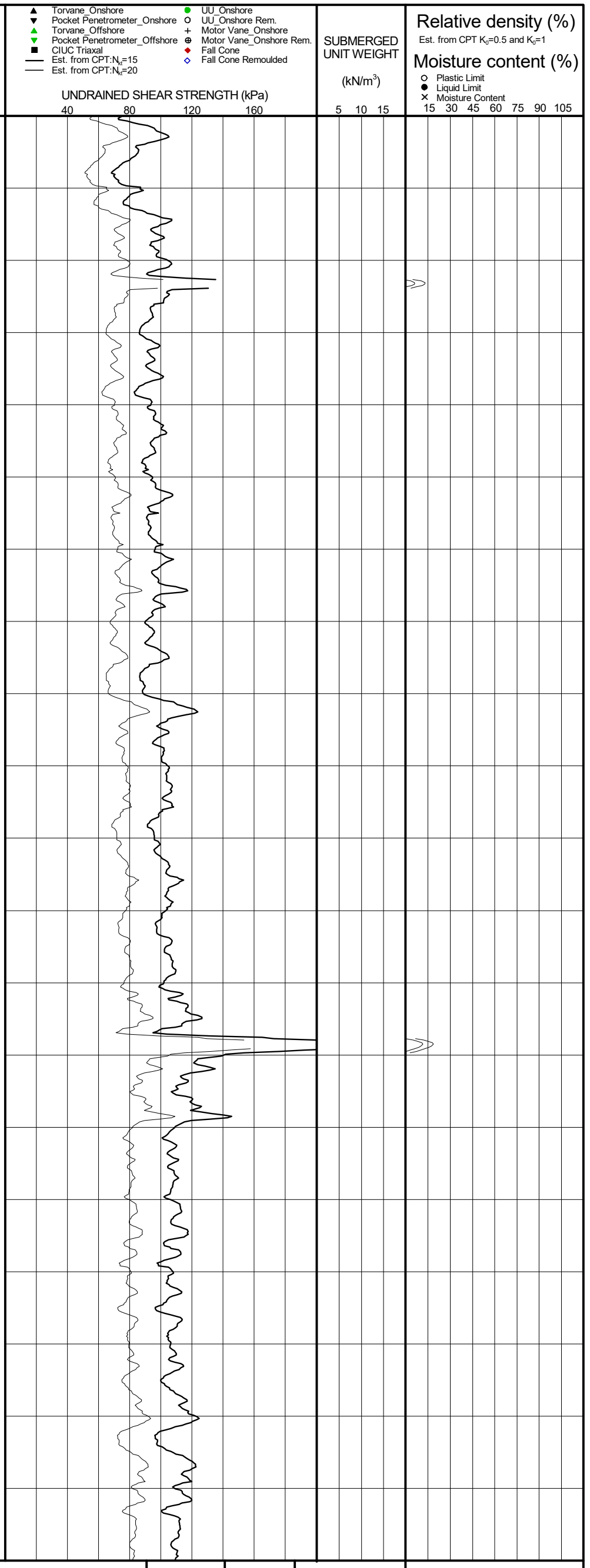
Liberté Égalité Fraternité
TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
11	36				7,1m Medium high to high shear strength sandy CLAY with occasional partings of very loose sand *(continued)*
12	40				
13	44				
14	48				... becoming high shear strength below 14.0m
15	52			CPT	
16	56				
17	60				
18	64				
19					



COMBINED CPT/VC LOG

Z1_OWF_B18_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-94,02 m ZH
		Coordinates	E 544394,81m; N 4759927,8m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

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Liberté Égalité Fraternité

TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT | SOIL DESCRIPTION

▲ Torvane_Onshore ▼ Pocket Penetrometer_Onshore ▲ Torvane_Offshore ▼ Pocket Penetrometer_Offshore ■ CIUC Triaxal — Est. from CPT:N_{kt}=15 — Est. from CPT:N_{kt}=20
● UU_Onshore ○ UU_Onshore Rem. + Motor Vane_Onshore ⊕ Motor Vane_Onshore Rem. ◆ Fall Cone ◇ Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)

SUBMERGED UNIT WEIGHT (kN/m^3)

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
○ Plastic Limit ● Liquid Limit × Moisture Content

m	ft
21	68
22	72
23	76
24	80
25	84
26	88
27	92
28	96
29	

7,1m Medium high to high shear strength sandy CLAY with occasional partings of very loose sand *(continued)*

25,4m High shear strength silty CLAY interbedded with very loose to medium dense silty SAND

26,6m High shear strength sandy CLAY

COMBINED CPT/VC LOG

Z1_OWF_B18_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-94,02 m ZH
		Coordinates	E 544394,81m; N 4759927,8m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
Liberté Égalité Fraternité
TECNOAMBIENTE

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
				CPT	26,6m High shear strength sandy CLAY *(continued)*
	100				
31					Termination depth 30.54m. Test ended due to Target Depth reached Approx. Settlement 0.69m. Final PC Depth 2.12m.
	104				
32					
	108				
33					
34	112				
35					
	116				
36					
	120				
37					
	124				
38					
39	128				

UNDRAINED SHEAR STRENGTH (kPa)

▲ Torvane_Onshore
▼ Pocket Penetrometer_Onshore
▲ Torvane_Offshore
▼ Pocket Penetrometer_Offshore
■ CIUC Triaxal
— Est. from CPT:N_{kt}=15
— Est. from CPT:N_{kt}=20
● UU_Onshore
○ UU_Onshore Rem.
+ Motor Vane_Onshore
⊕ Motor Vane_Onshore Rem.
◆ Fall Cone
◇ Fall Cone Remoulded

40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

○ Plastic Limit
● Liquid Limit
× Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B18_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-94,02 m ZH
		Coordinates	E 544394,81m; N 4759927,8m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22597 / 001

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TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

0,0m Extremely low shear strength slightly sandy clayey SILT

1,2m Very low to low shear strength slightly sandy clayey SILT

1,7m Low to medium shear strength slightly sandy clayey SILT

4,4m Dense to very dense slightly gravelly silty SAND
... loose down to 4.75m
... becoming sandy clay between 4.75m - 4.82m

6,3m Medium high to high shear strength slightly sandy CLAY

6,8m Dense to very dense silty SAND

7,4m Medium high to high shear strength slightly sandy CLAY with occasional partings of very loose sand

SAMPLE NO: PC

CPT: CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-93,54 m ZH
		Coordinates	E 547350,77m; N 4763598,43m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

Z1_OWF_B20_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

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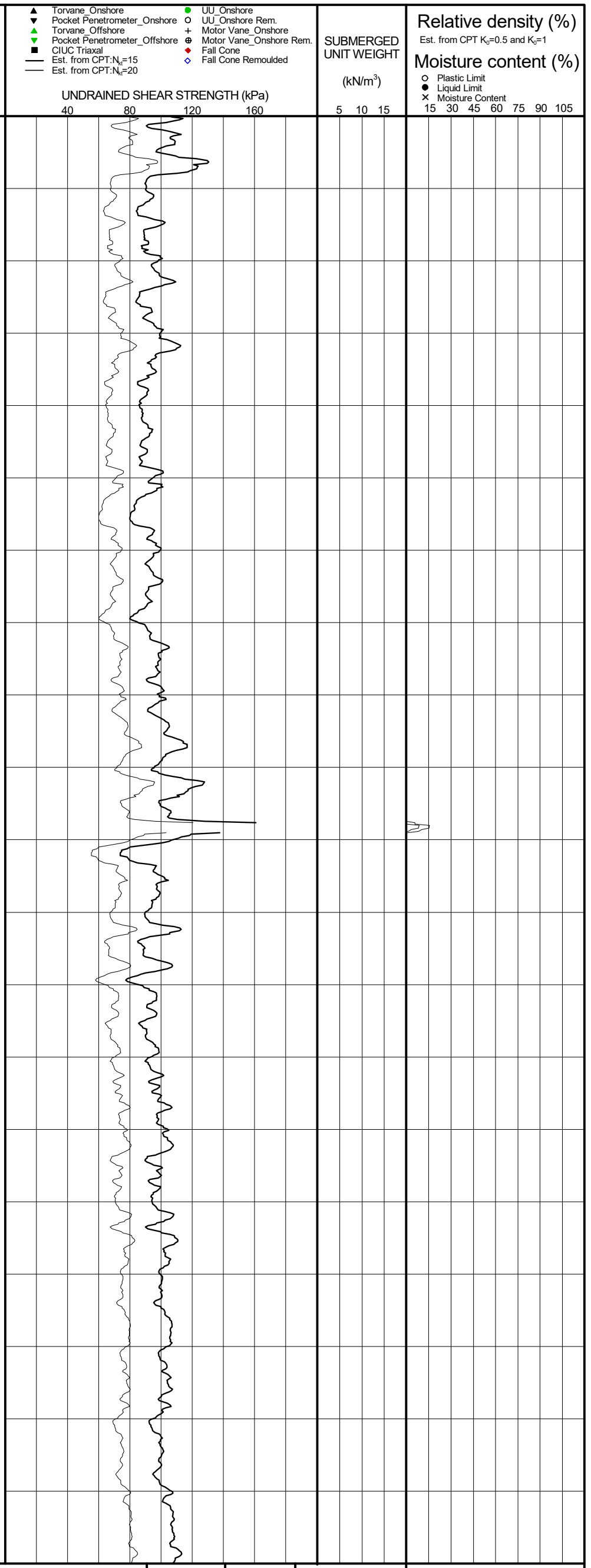
TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
					7,4m Medium high to high shear strength slightly sandy CLAY with occasional partings of very loose sand *(continued)*
11	36				
12	40				
13	44				
14	48				
15				CPT	
16	52				
17	56				
18	60				
19	64				



SUBMERGED UNIT WEIGHT (kN/m^3)

5 10 15

Relative density (%)

Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)

Plastic Limit
Liquid Limit
Moisture Content

15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-93,54 m ZH
		Coordinates	E 547350,77m; N 4763598,43m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

Z1_OWF_B20_CPT
MED-TEC_A06
Offshore Gulf de Lyon
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TECNOAMBIENTE

Tecnoambiente

DEPTH m ft | SOIL PROFILE | SAMPLE NO | CPT

SOIL DESCRIPTION

7,4m Medium high to high shear strength slightly sandy CLAY with occasional partings of very loose sand *(continued)*

... becoming sandy below 21.50m

21,7m Medium dense to dense silty SAND

22,4m High shear strength slightly sandy CLAY

CPT

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT (kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B20_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-93,54 m ZH
		Coordinates	E 547350,77m; N 4763598,43m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
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TECNOAMBIENTE

Tecnoambiente

DEPTH m	DEPTH ft	SOIL PROFILE	SAMPLE NO	CPT	SOIL DESCRIPTION
	100			CPT	22,4m High shear strength slightly sandy CLAY *(continued)*
31					
	104				Termination depth 30.87m. Test ended due to Target Depth reached Approx. Settlement 0.80m. Final PC Depth 4.05m.
32					
	108				
33					
34	112				
35	116				
36					
	120				
37					
	124				
38					
39	128				

Torvane_Onshore
Pocket Penetrometer_Onshore
Torvane_Offshore
Pocket Penetrometer_Offshore
CIUC Triaxal
Est. from CPT:N_{kt}=15
Est. from CPT:N_{kt}=20
UU_Onshore
UU_Onshore Rem.
Motor Vane_Onshore
Motor Vane_Onshore Rem.
Fall Cone
Fall Cone Remoulded

UNDRAINED SHEAR STRENGTH (kPa)
40 80 120 160

SUBMERGED UNIT WEIGHT
(kN/m^3)
5 10 15

Relative density (%)
Est. from CPT K_0=0.5 and K_0=1

Moisture content (%)
Plastic Limit
Liquid Limit
Moisture Content
15 30 45 60 75 90 105

COMBINED CPT/VC LOG

Z1_OWF_B20_CPT
MED-TEC_A06
Offshore Gulf de Lyon
DGEC

Alpha Value	0.8	Date Performed	08/04/2023
		Water Depth	-93,54 m ZH
		Coordinates	E 547350,77m; N 4763598,43m
		Made By/Date	SC - 14/11/2023
		Checked By/Date	AN - 17/11/2023
		Cone Number	S10CFIIP.S22594 / 001

MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE
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TECNOAMBIENTE

Tecnoambiente

APPENDIX V – DIGITAL GEOTECHNICAL DATA

This appendix is delivered in a separate spreadsheet.