



Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 4, Annex 2.4: Seafloor and Shallow Geological Results (Array) (Part 12)

Date: April 2022

Revision: A

Application Reference: 6.4.2.4.12

Pursuant to: APFP Regulation 5(2)(a)



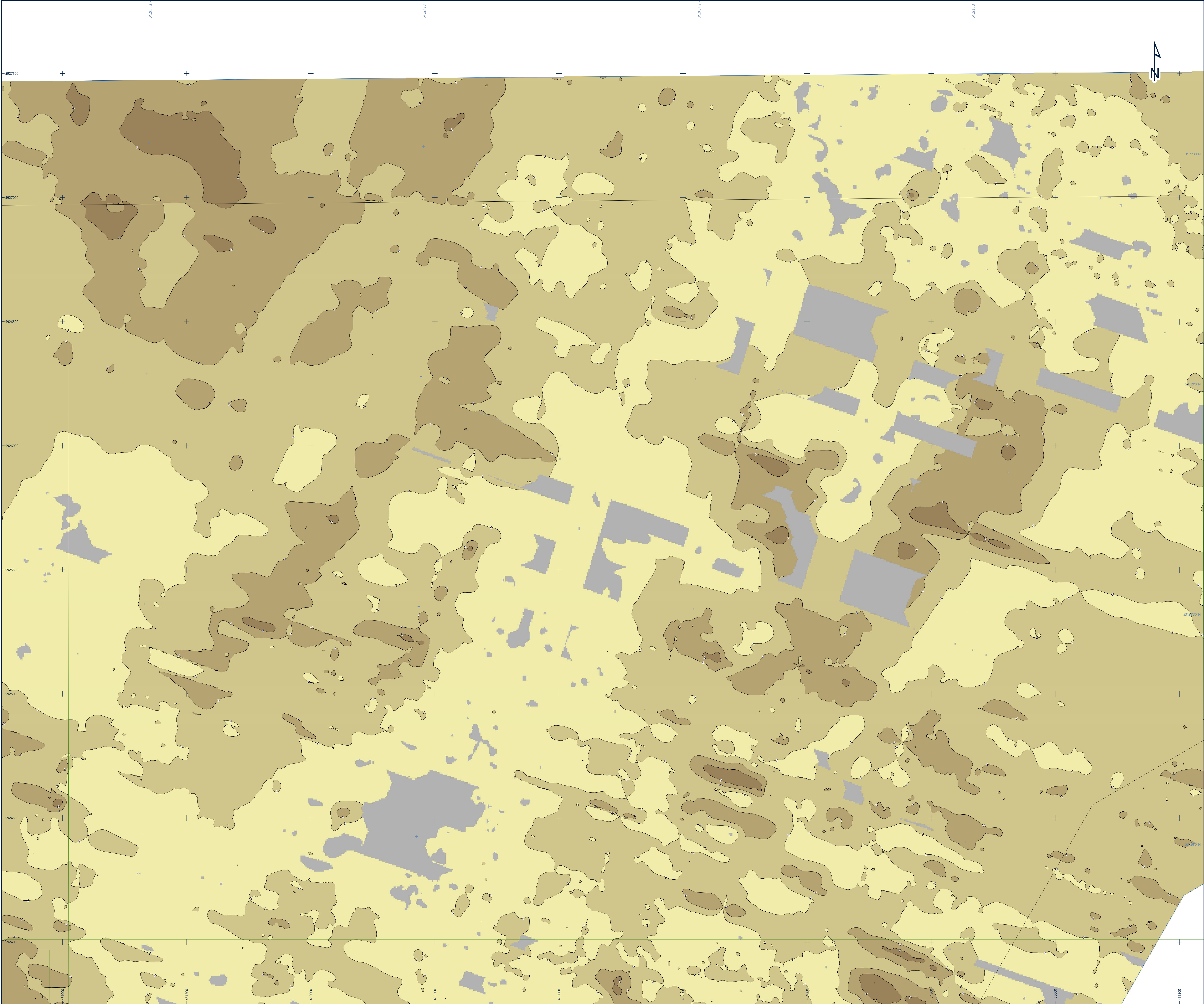
REVISION	DATE	STATUS/ REASON FOR ISSUE	AUTHOR:	CHECKED BY:	APPROVED BY:
A	March 2022	ES	Fugro	RWE	RWE

www.awelymor.cymru

RWE Renewables UK
Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Extent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R04 Western Irish Sea Lower Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - > 10.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Innmar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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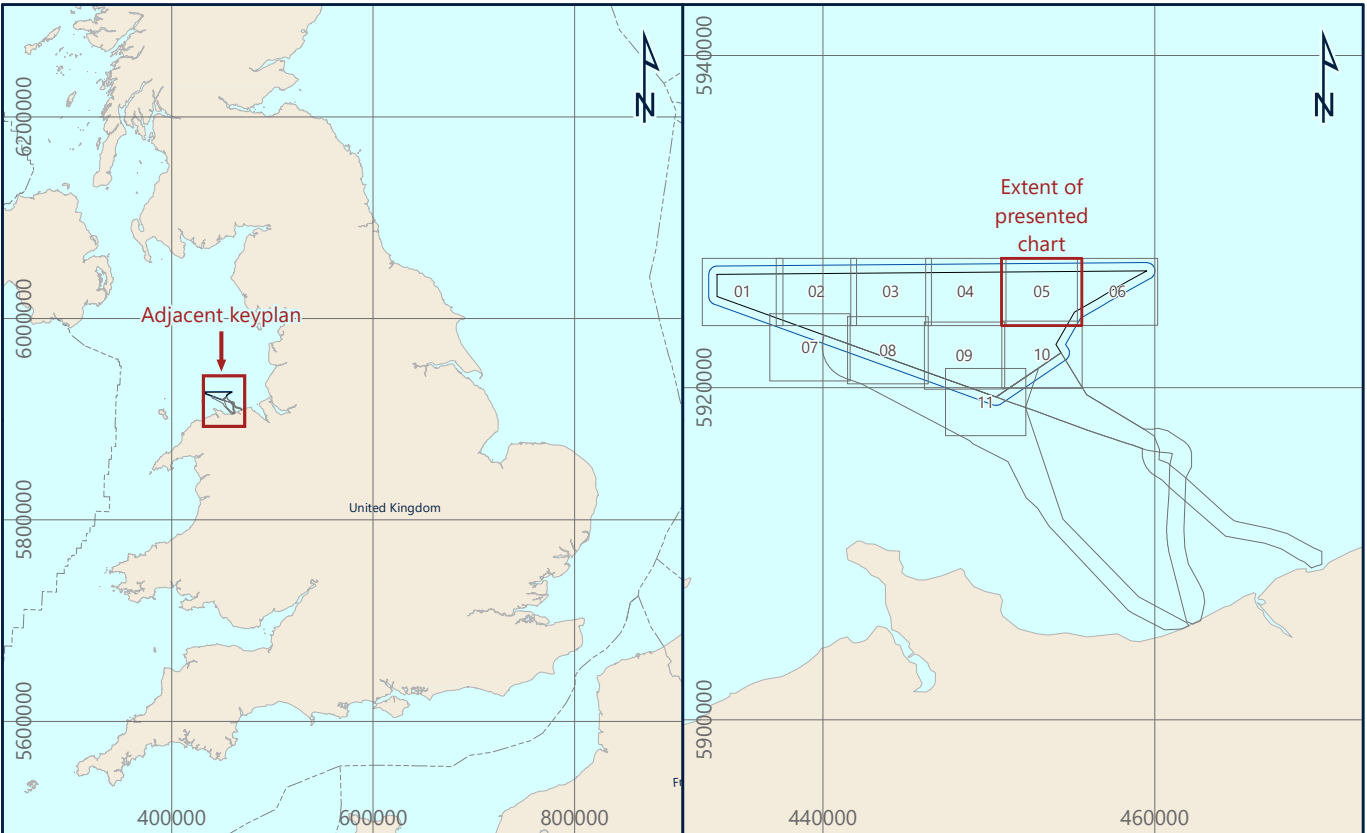
Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84
Semi-Major Axis: 6,378,137.000 m
Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 03°00'00" W
Latitude of Origin: 07°00'00" N
False Easting: 500,000 mE
False Northing: 0 mN
Scale Factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tigorous Bay, Windmill Hill Business Park, Windmill Way, Swanton, SWS 0PE, United Kingdom

AWEL Y MÔR

Fugro

Victory House, Trellehar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3300



R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

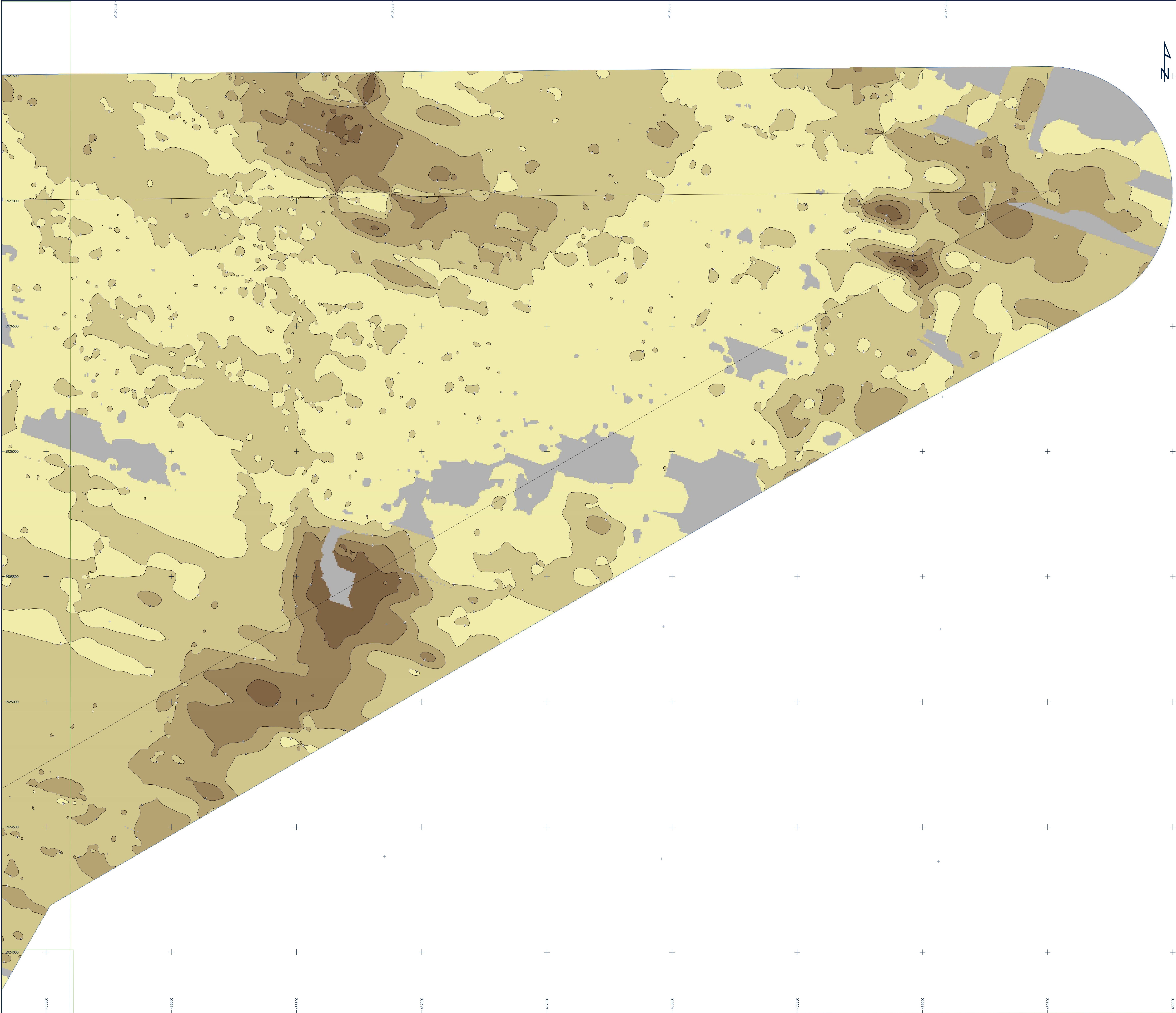
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0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_05		05 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

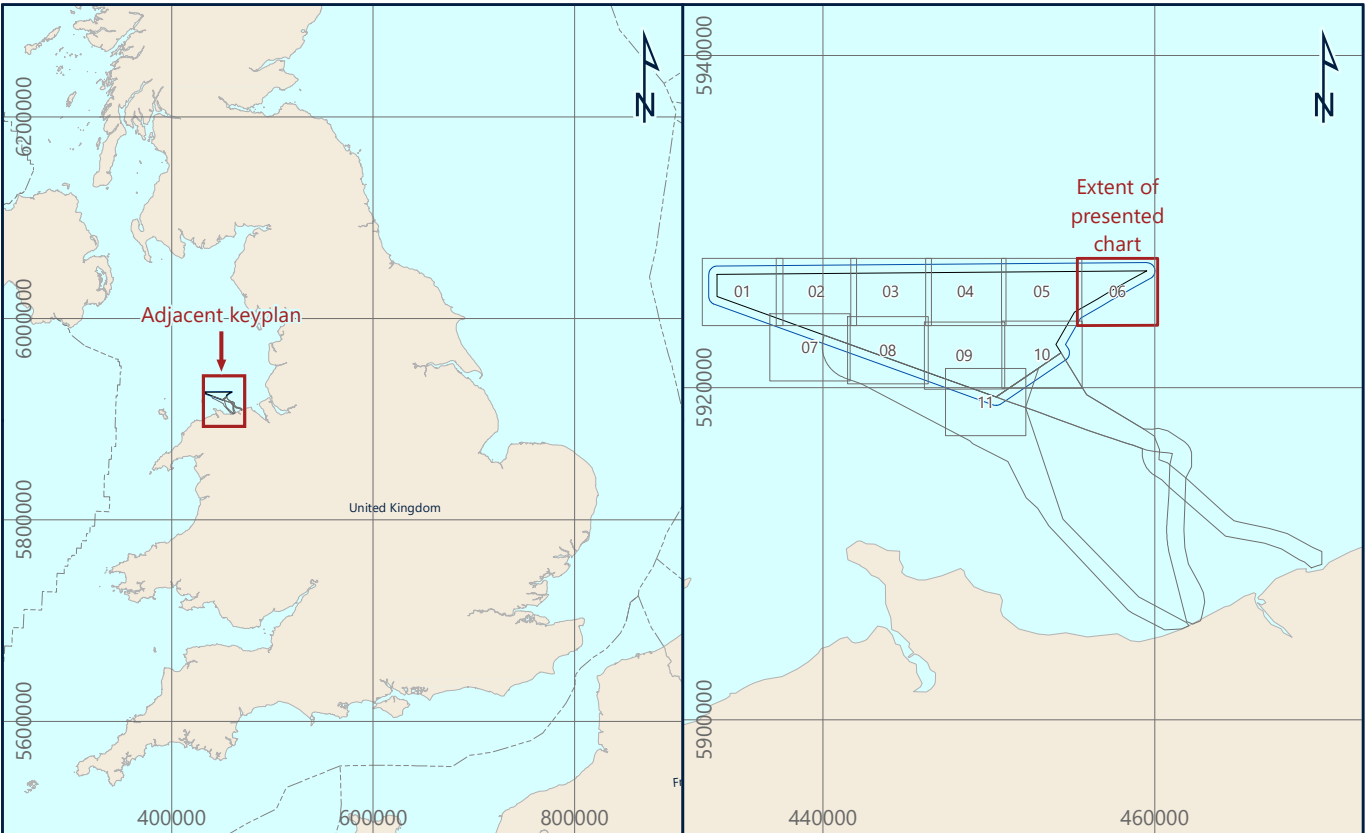
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Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MŌR

Fugro

Victory House, Treglar Wharf Unit 16, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 3300

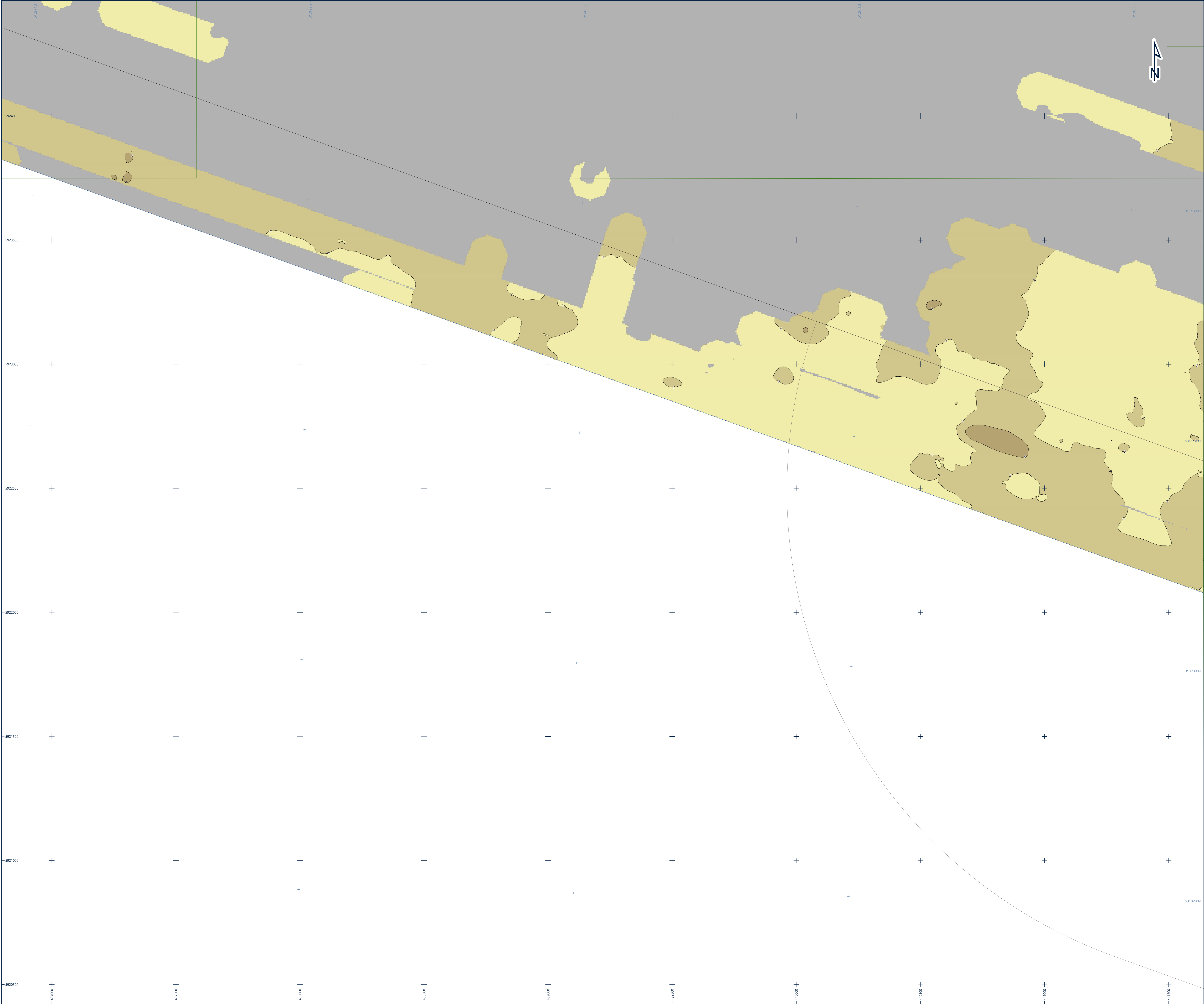
FUGRO

R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MŌR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_06	06 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
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- 6.1 - 8.0
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- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

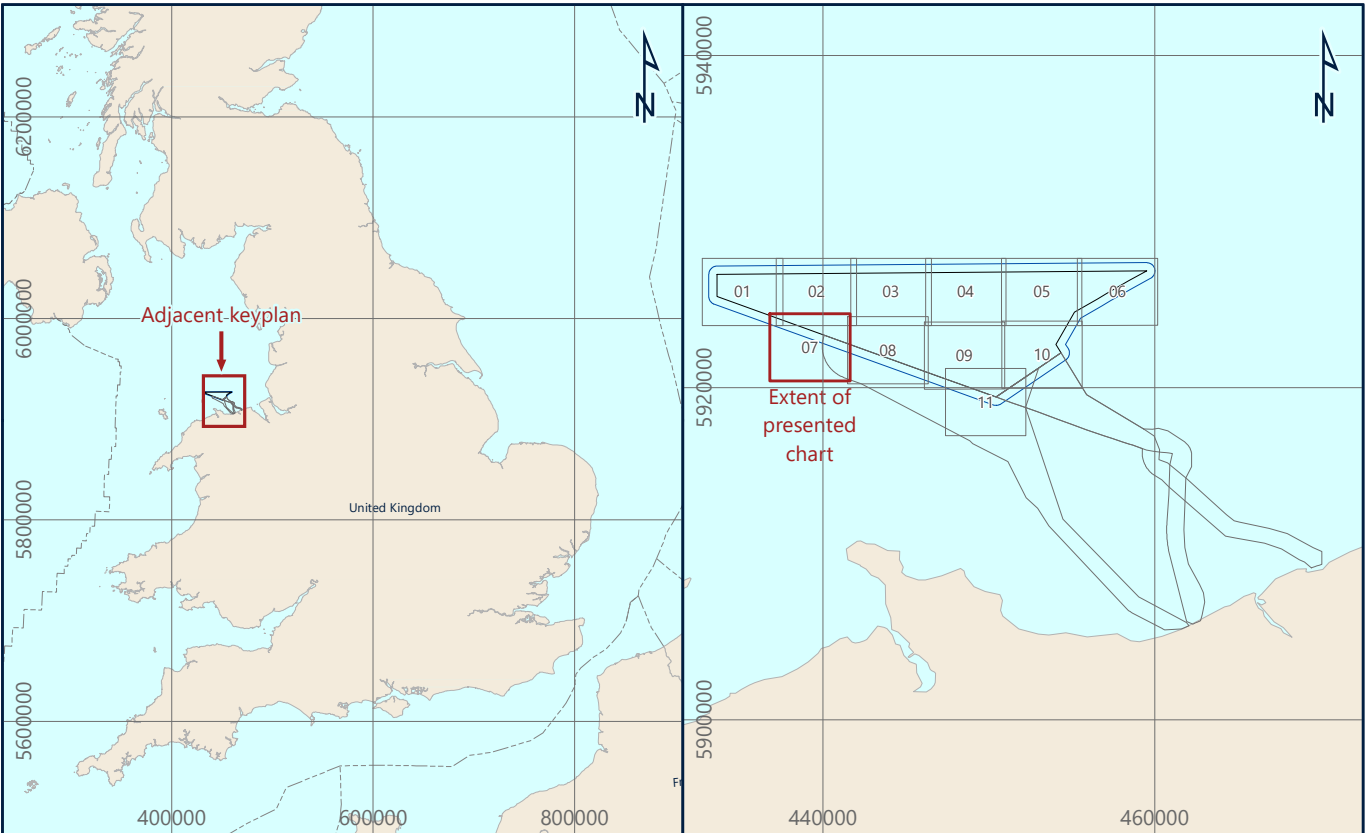
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Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swansea, SA5 8PL, United Kingdom

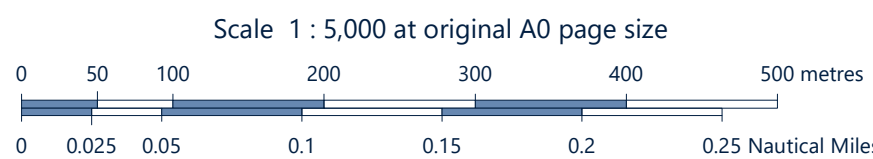
AWEL Y MÔR

Fugro

Victory House, Tregolar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 5500

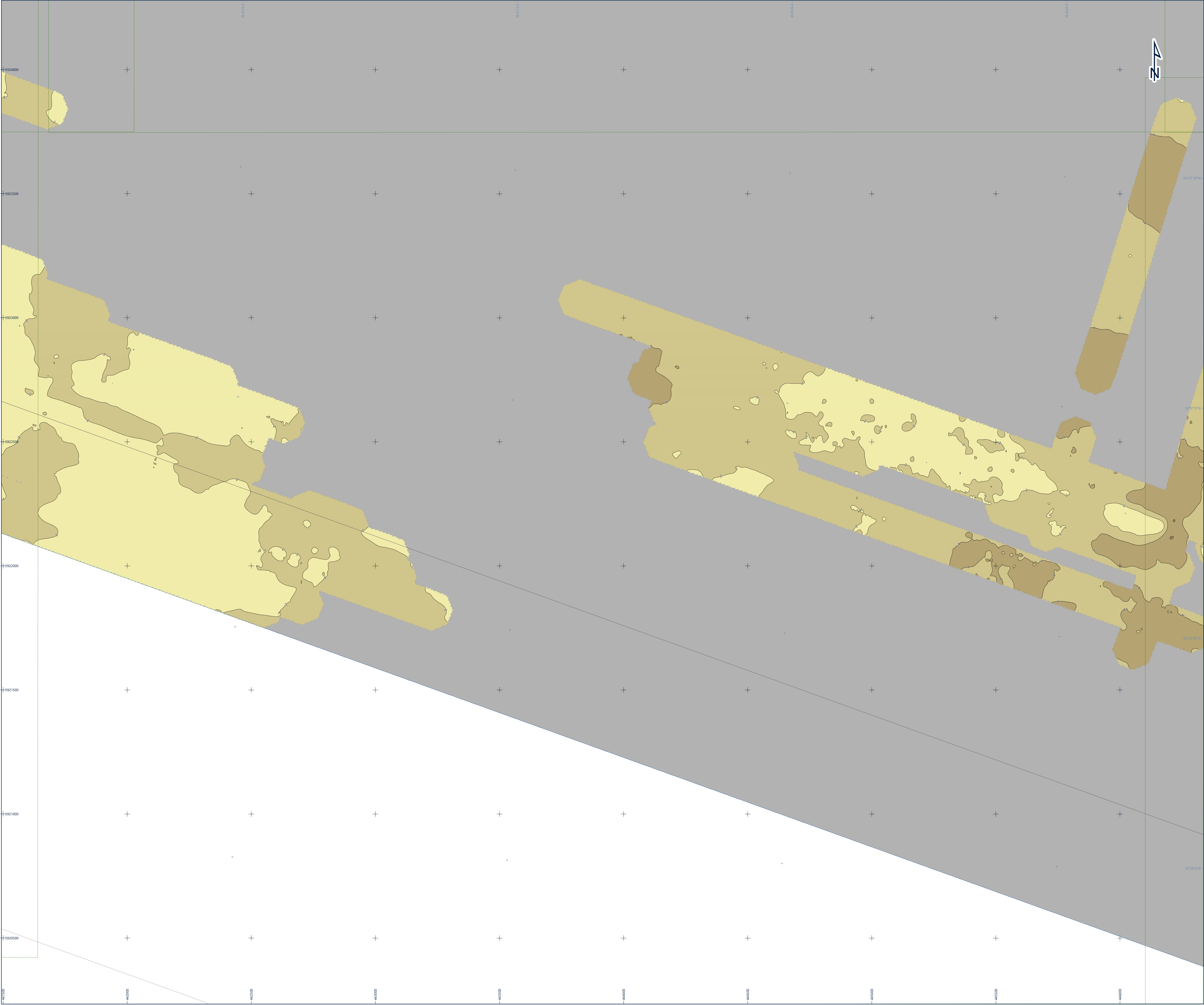
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R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_07	07 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

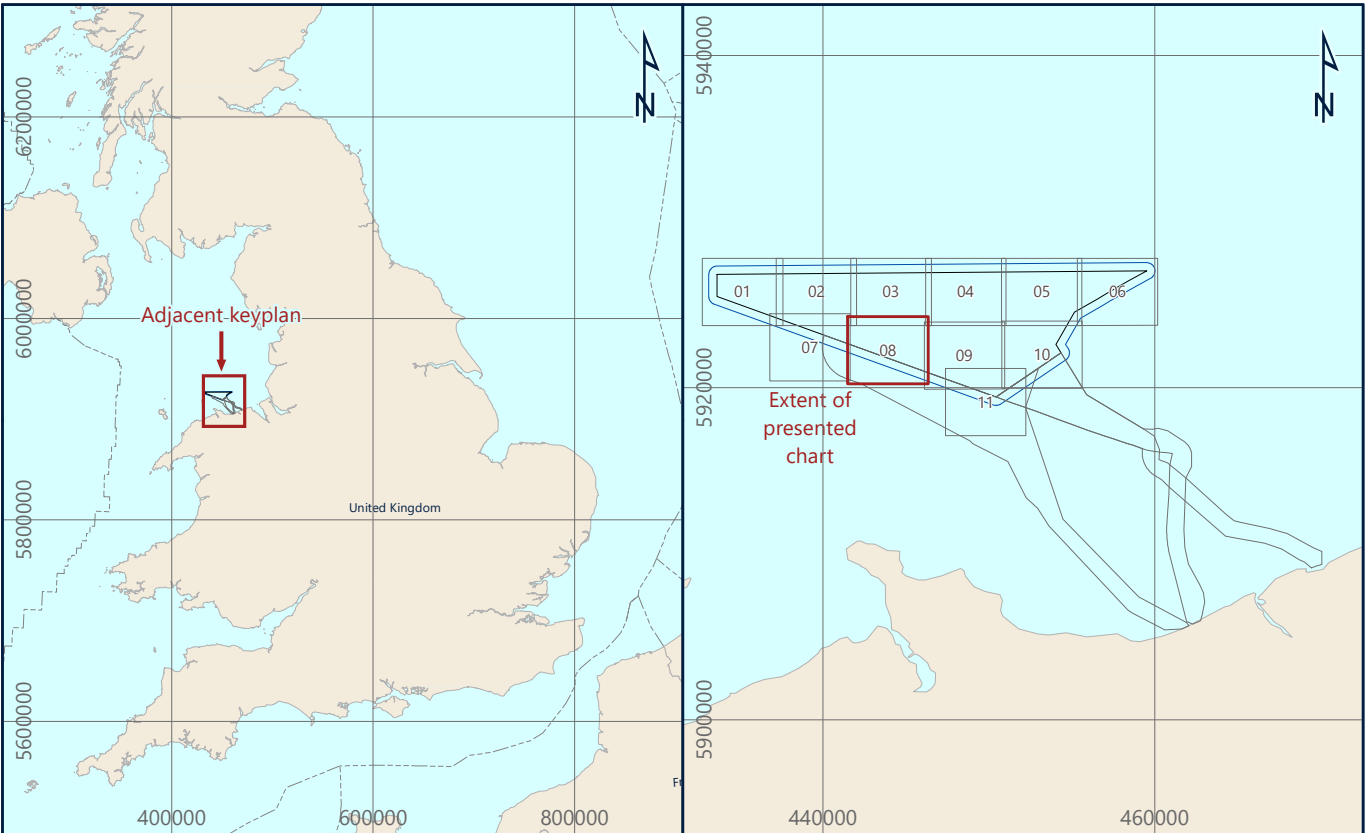
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Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	09°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



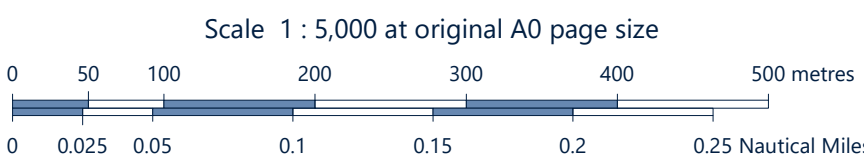
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swanton, SWS 6PE, Llanelli, Gwent, NP23 5SD

AWEL Y MÔR

Fugro
Victory House, Tregilar Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

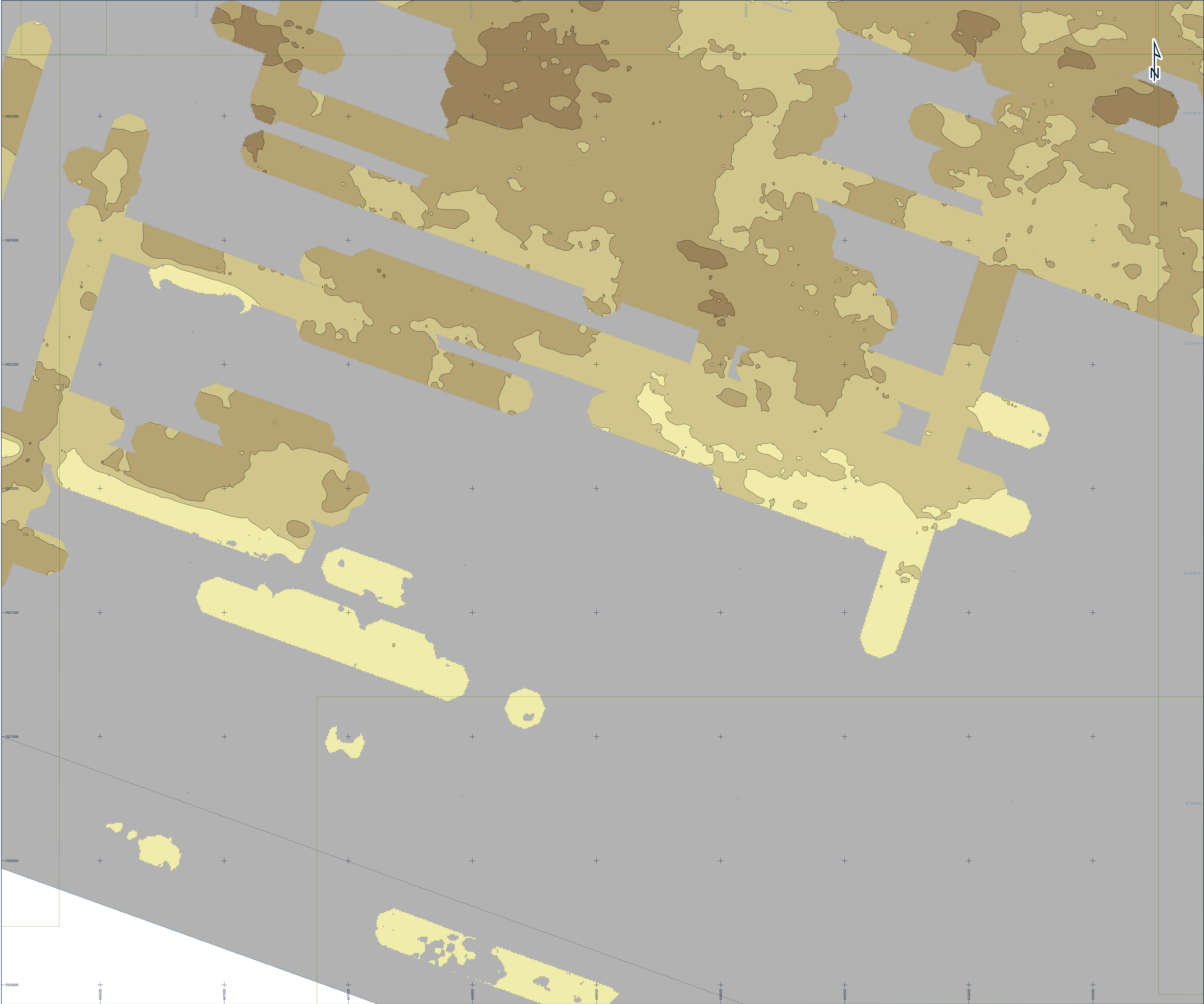
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R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_08		08 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

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- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

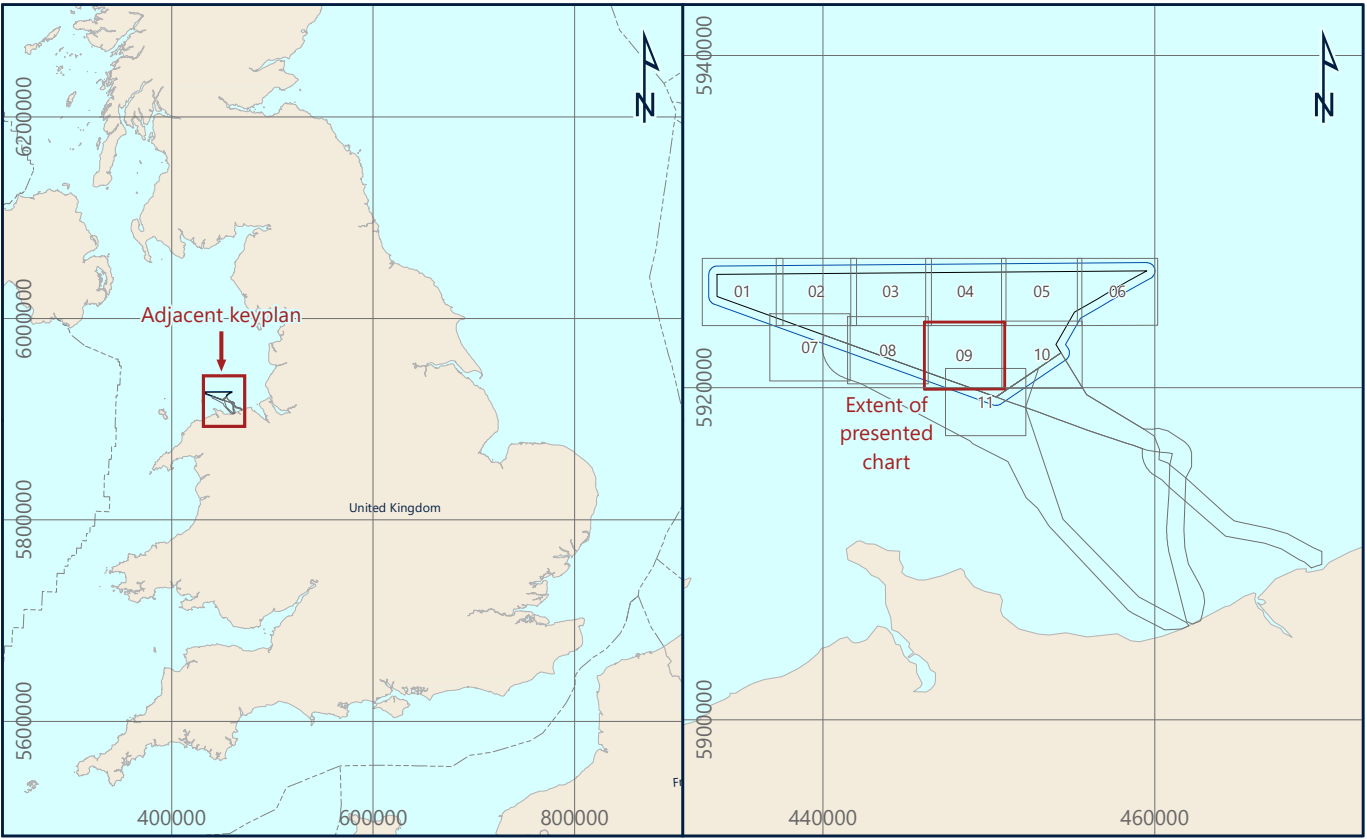
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Fugro

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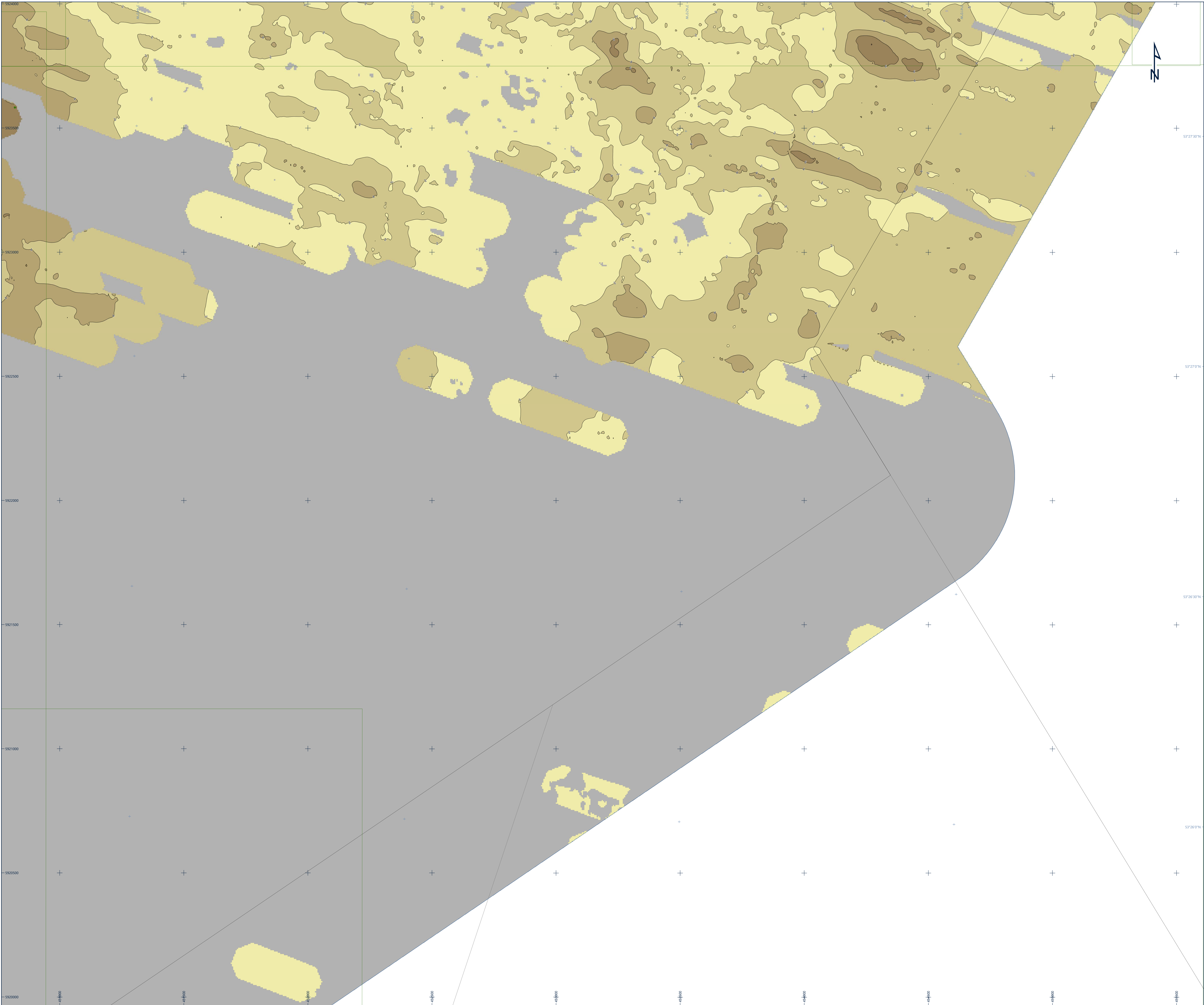


R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

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0 50 100 200 300 400 500 metres
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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_09	09 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

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- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

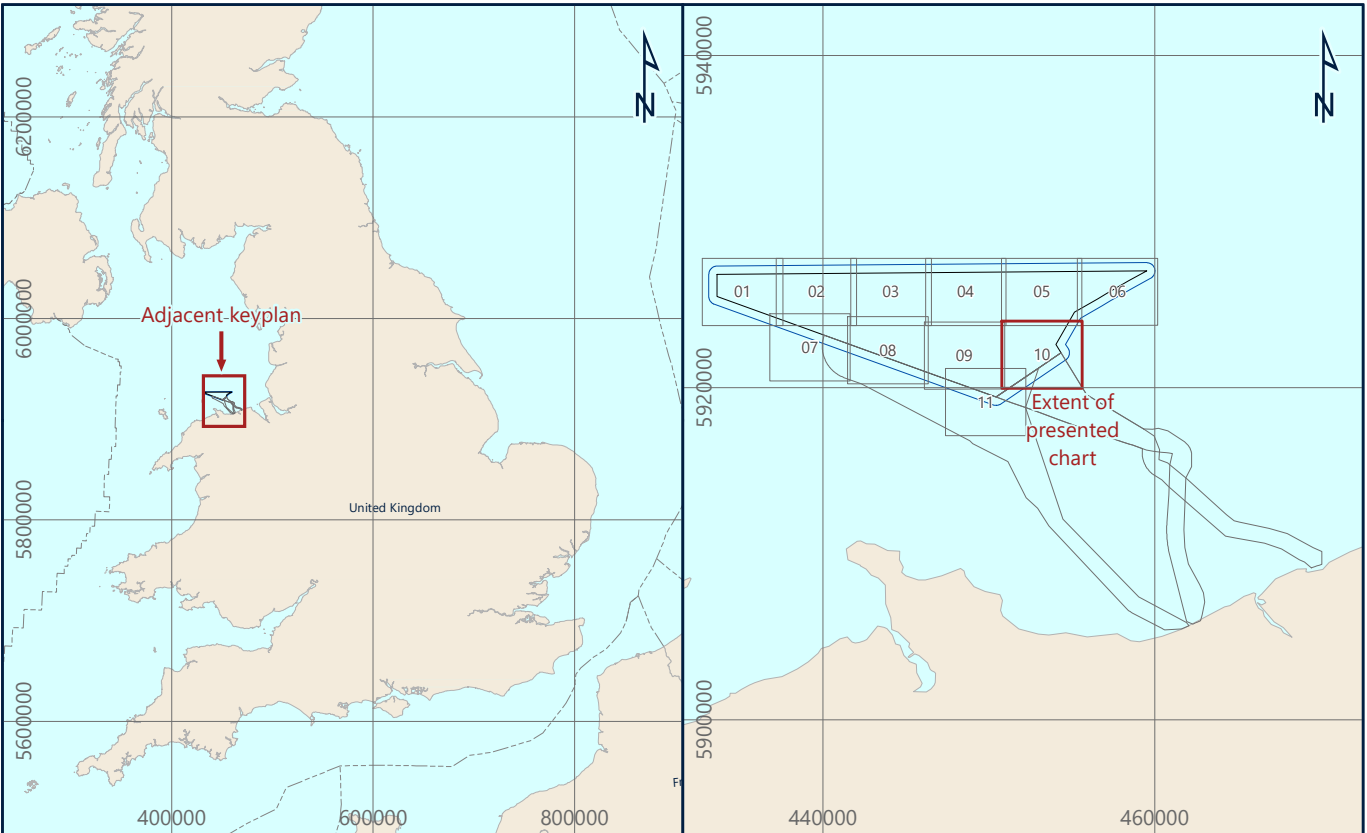
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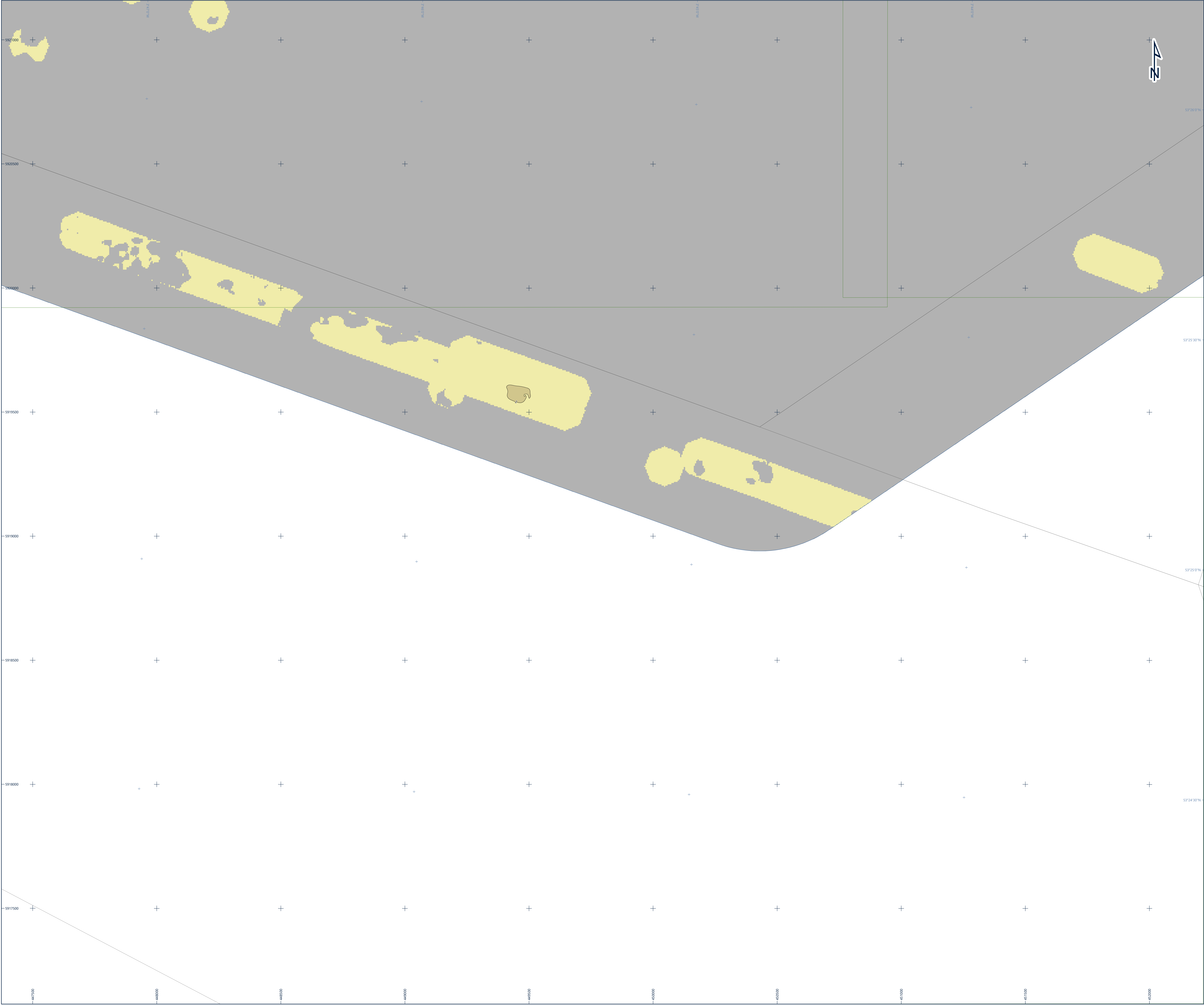
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R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP
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200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_10	10 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- 2.0
- 2.1 - 4.0
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- 6.1 - 8.0
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- Sediment Isochore at 2 m Interval
- Area of No Interpretation

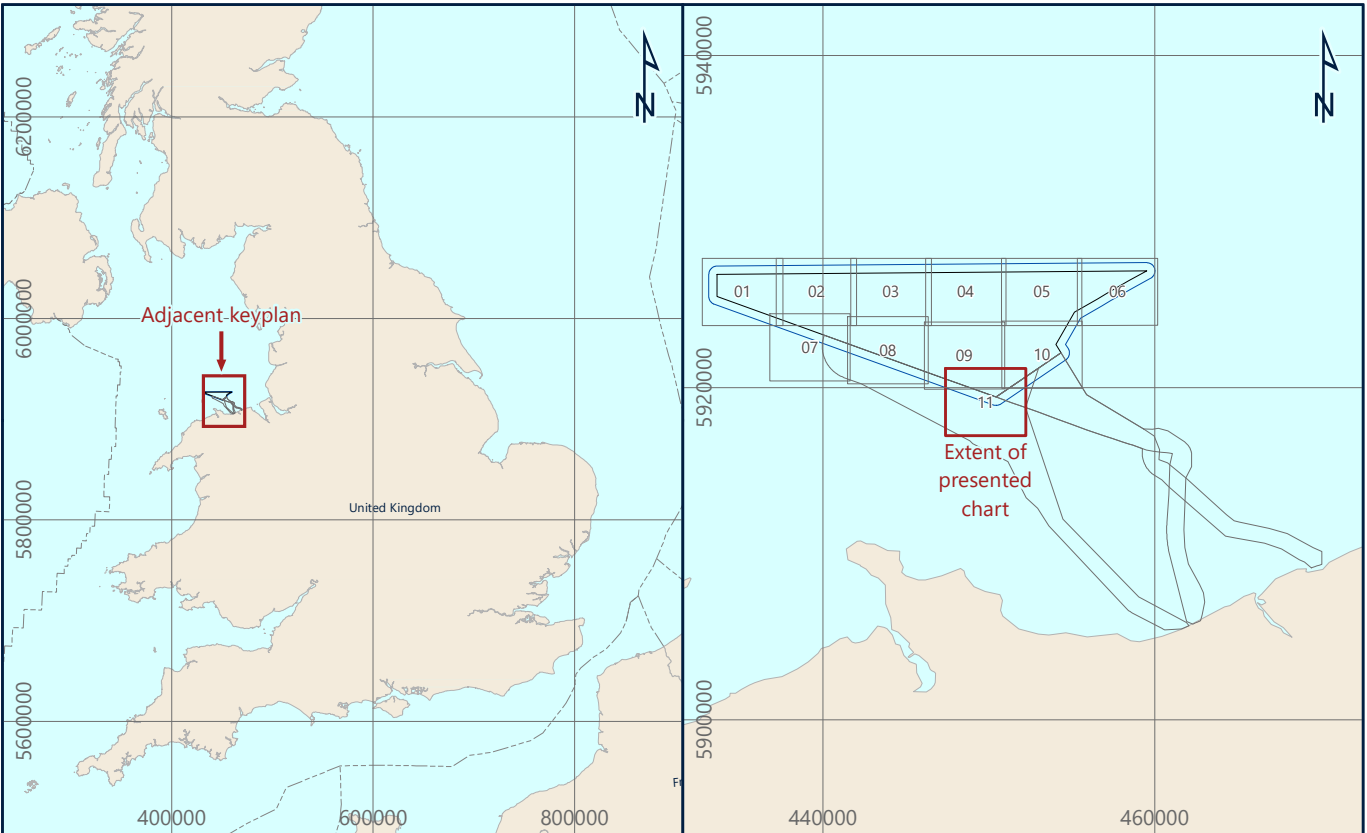
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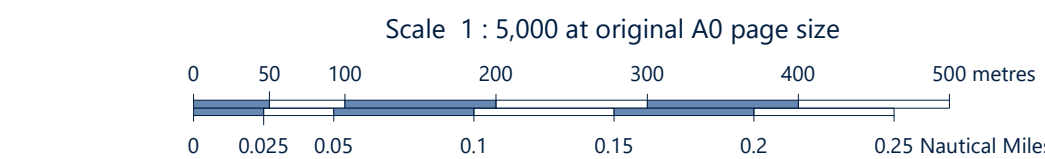
AWEL Y MÔR

Fugro

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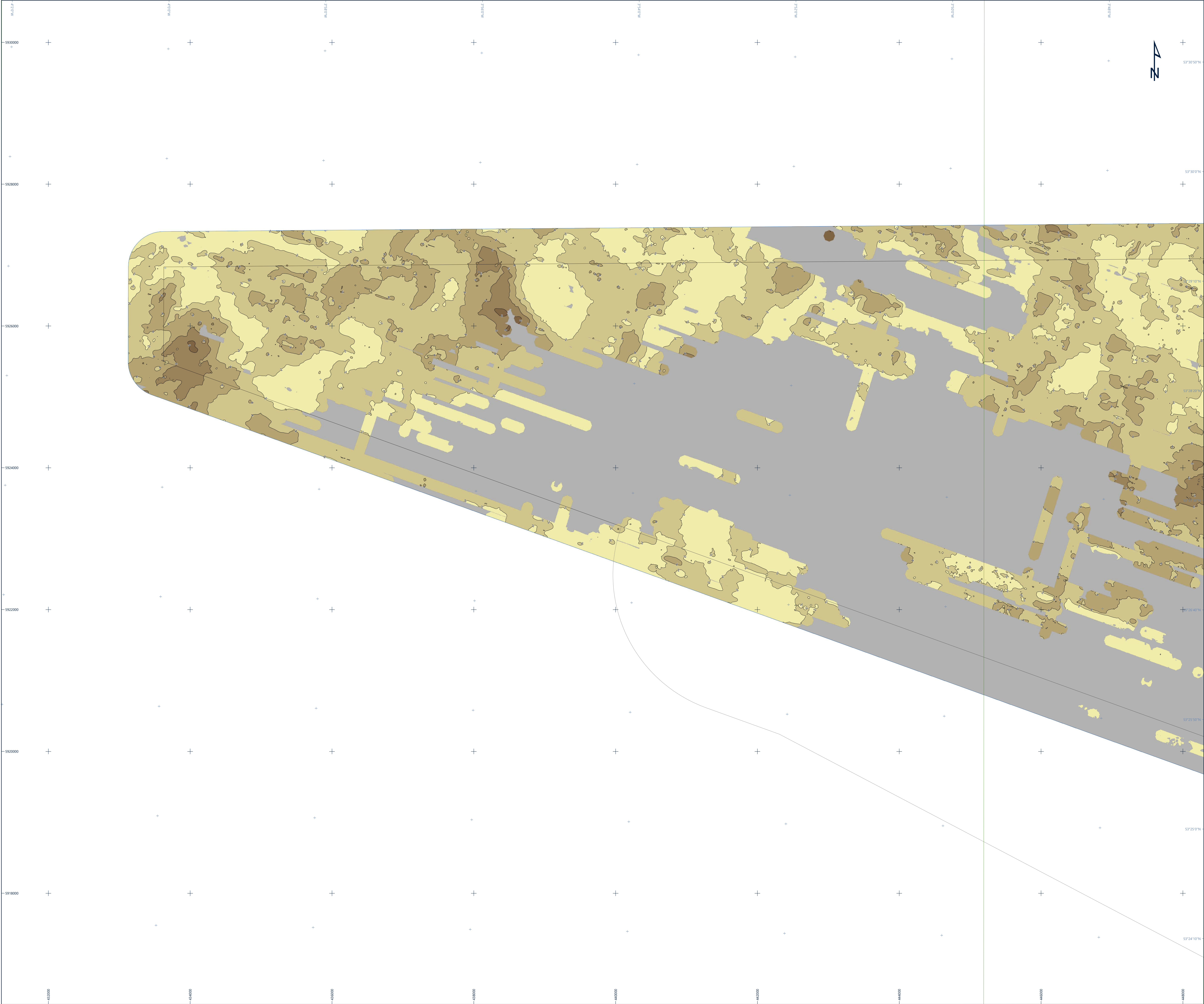
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R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA



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Legend

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- Geographical Grid
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- Windfarm Extent
- Array Survey Extent
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R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

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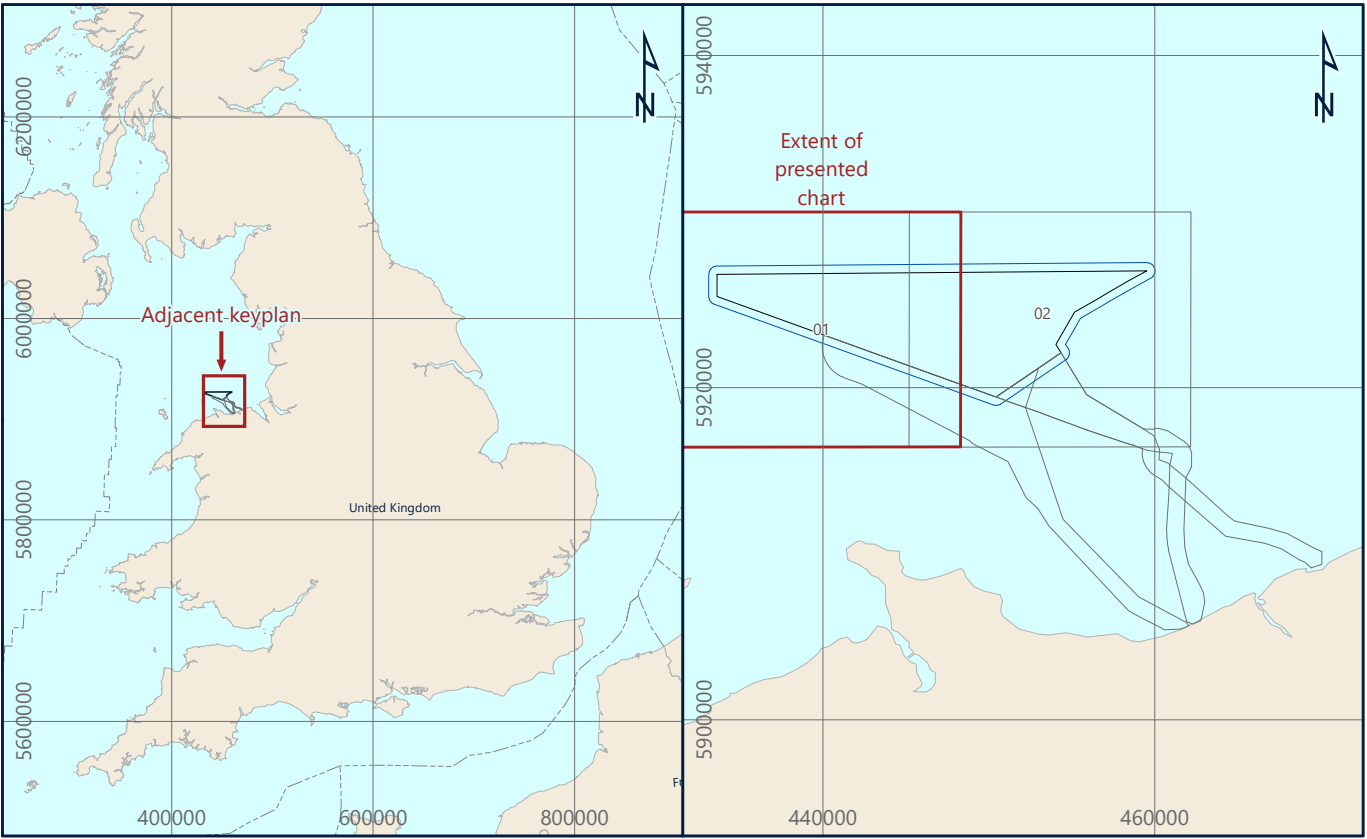
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Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Way, Wernand Hill Business Park, Wernand Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

FUGRO

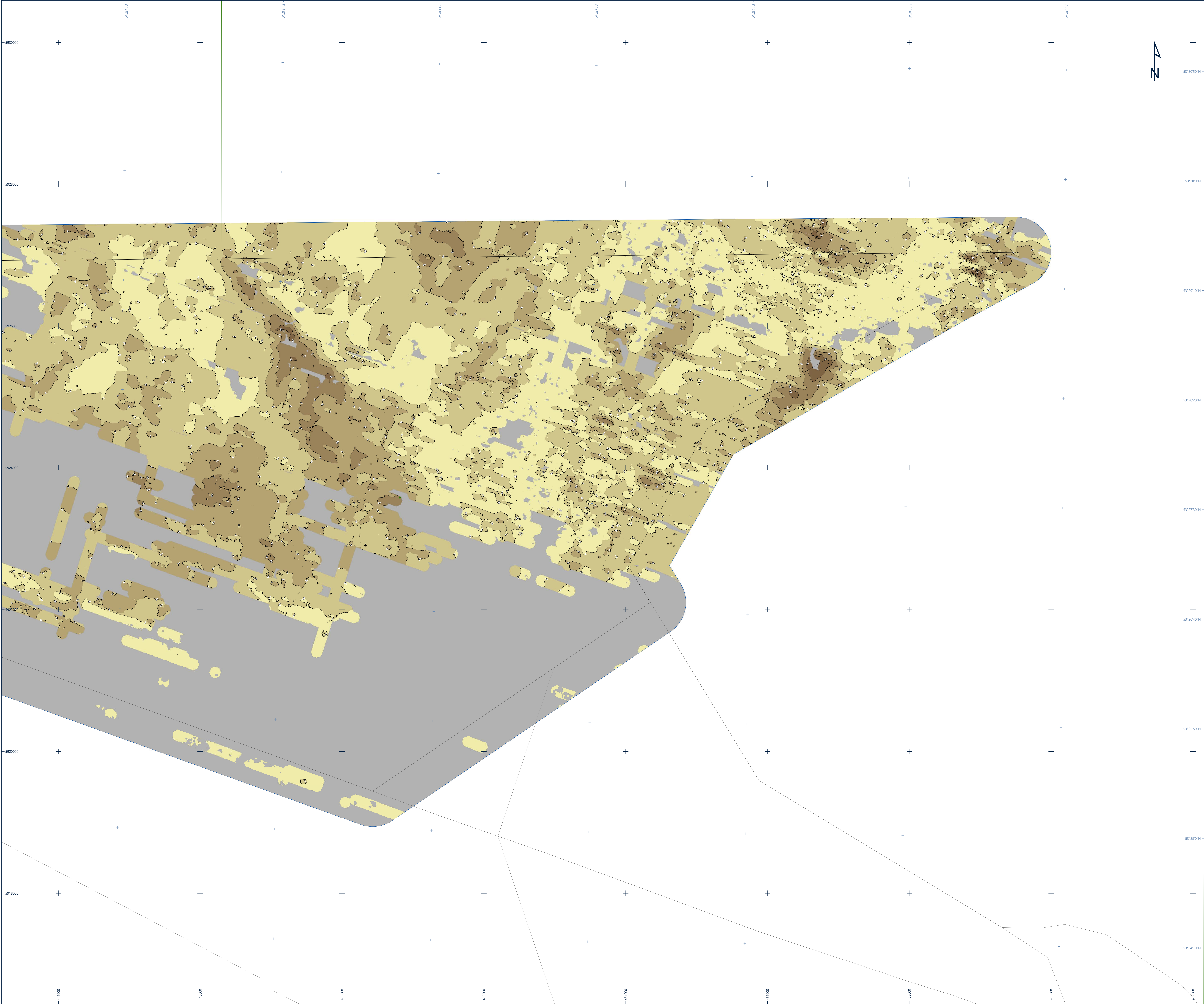
R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE SBP OVERVIEW AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

Scale 1 : 17,500 at original A0 page size



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Relissue - Revision 2	OOT	DS	SB	BPT
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655.Array_R04_WIS_Lower_SedimentIsochore_SBP_Overview_01	01 of 02	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- > 10.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

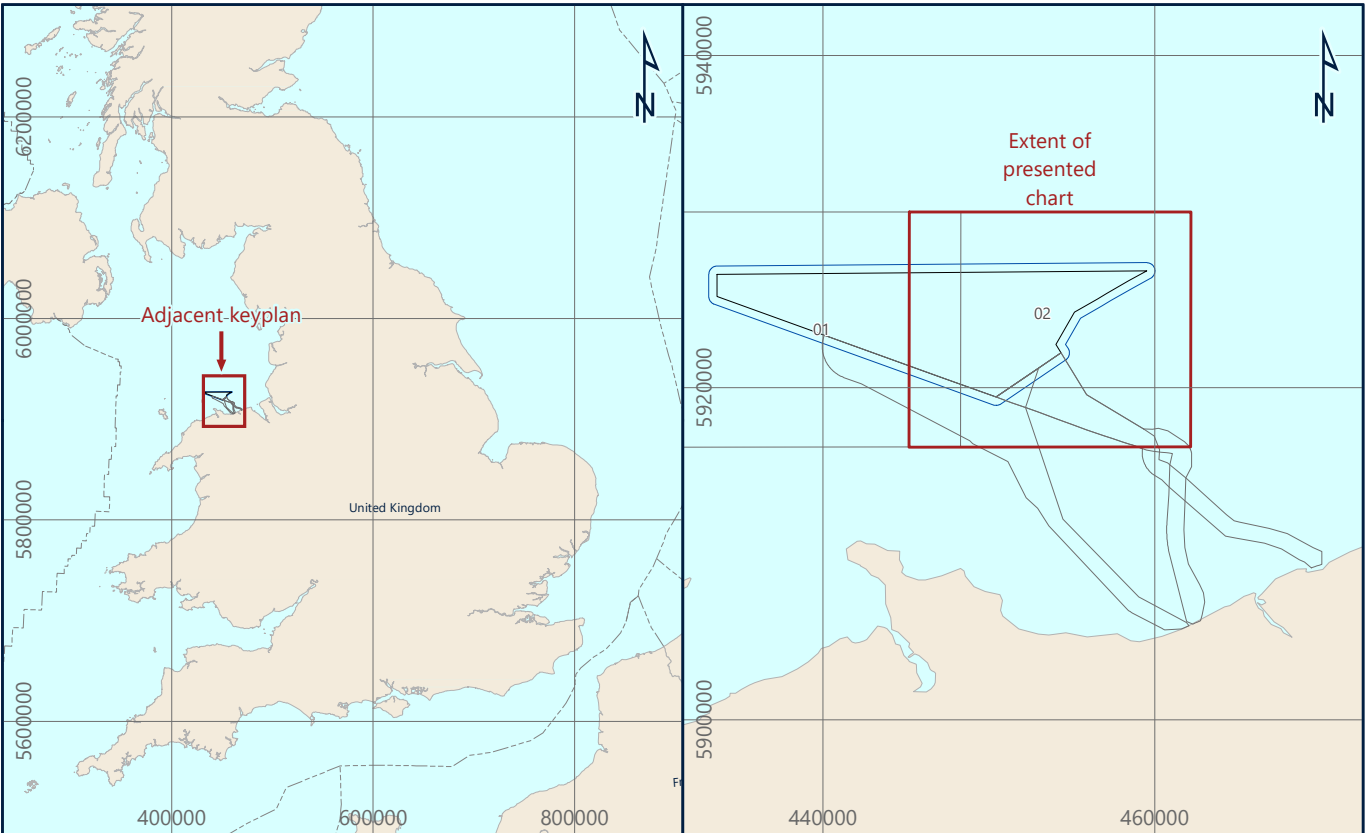
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



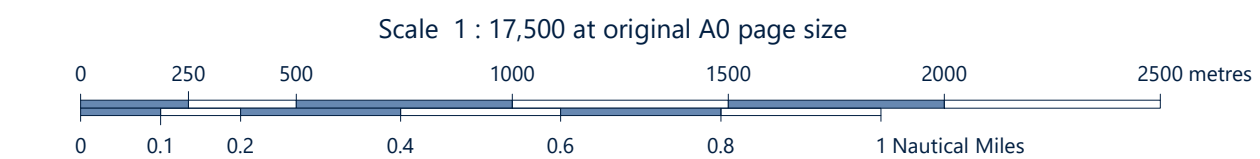
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Way, Wernand Hill Business Park, Wernand Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregaron Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

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**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE SBP OVERVIEW**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Release - Revision 2	OOT	DS	SB	BPT
-	-	-	-	-	-	-
-	-	-	-	-	-	-

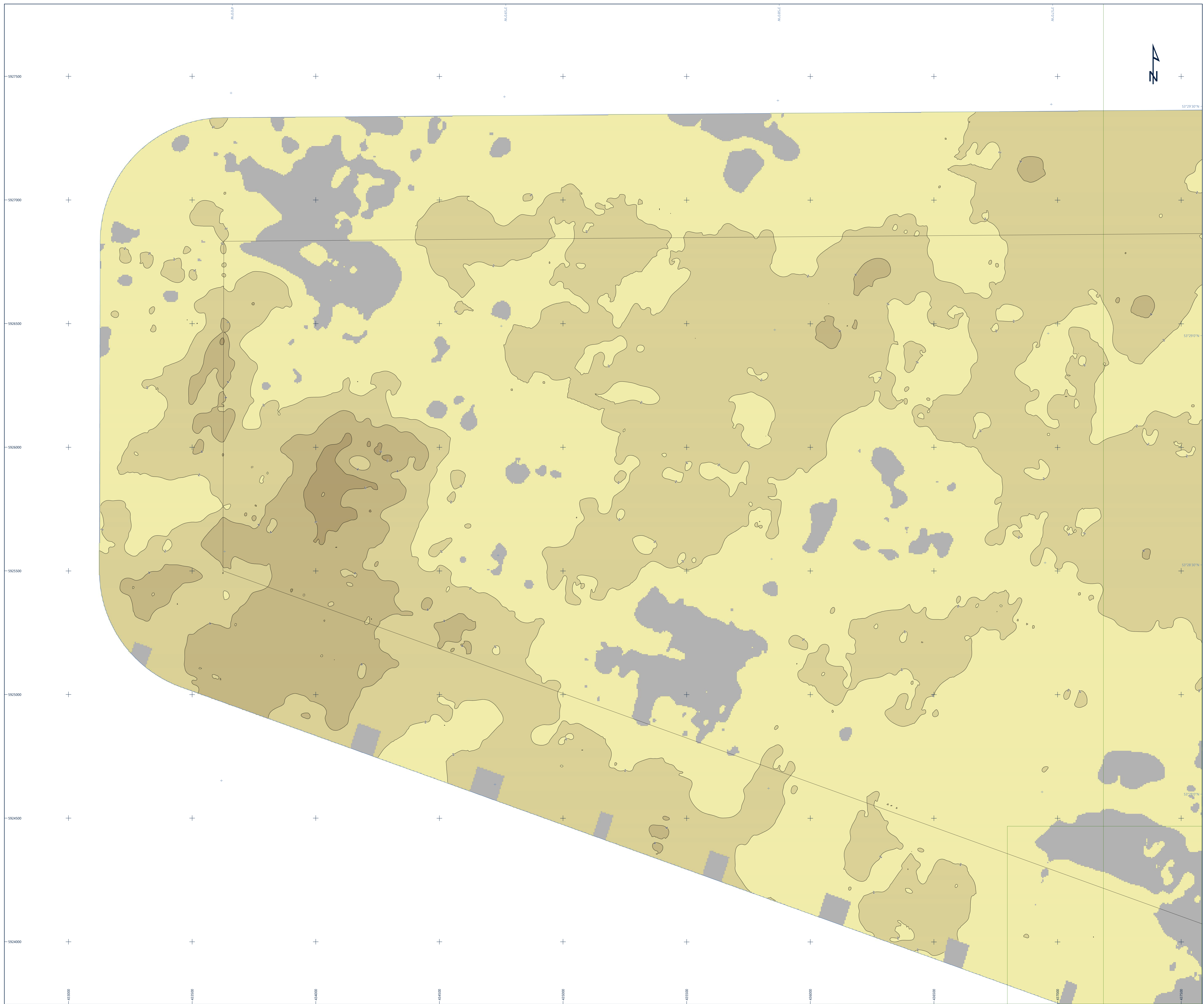
Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_SBP_Overview_02		02 of 02

Appendix J

Charts - R04 Western Irish Sea

Lower Sediment Isochore

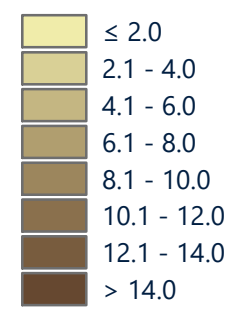
(UHRS)



Legend

-  UTM Grid
-  Geographical Grid
-  Chart Extent
-  Windfarm Extent
-  Array Survey Extent
-  Export Cable Route Survey Extent
-  MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness [m]



— Sediment Isochore at 2 m Interval
 ■ Area of No Interpretation

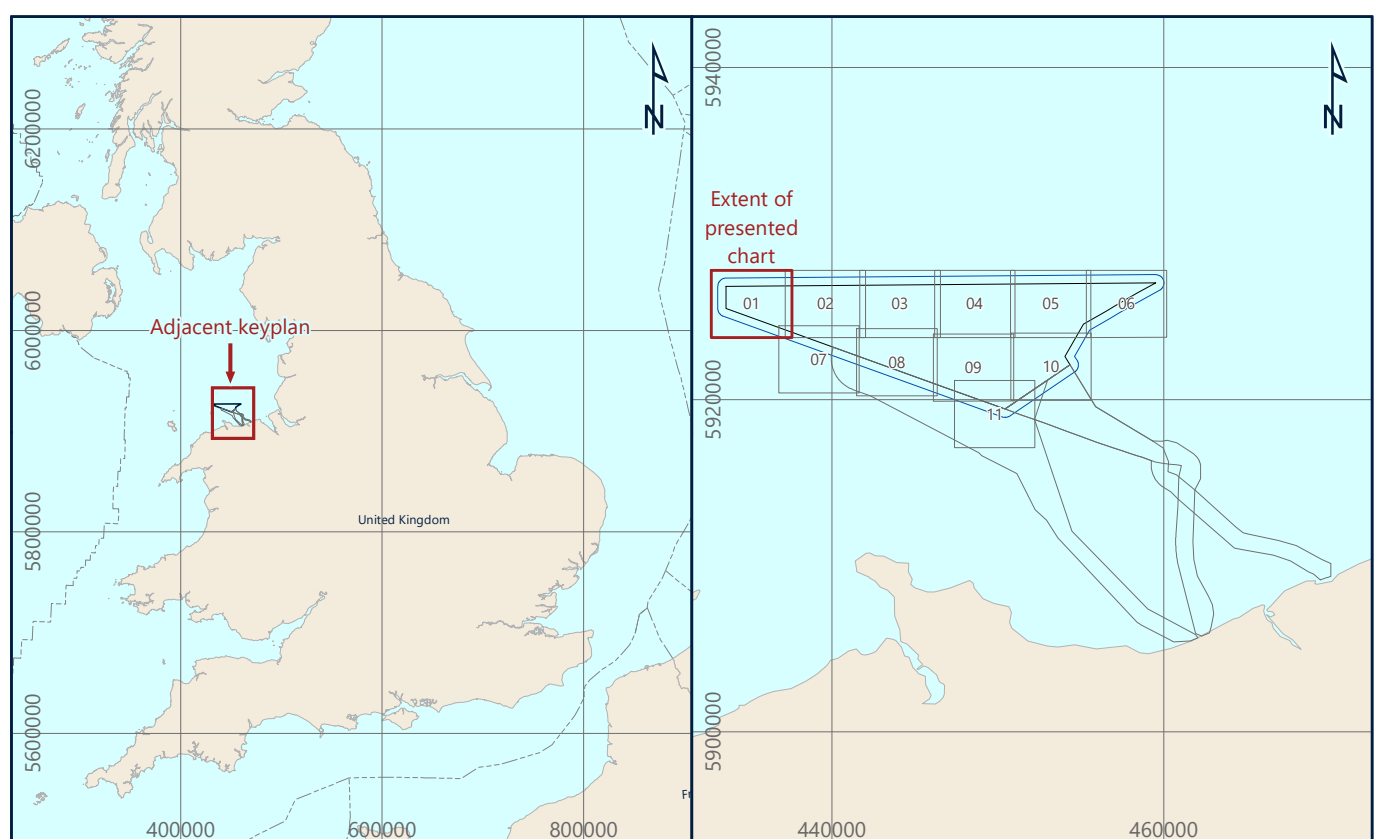
Notes

- 1) Interpretation is from UHRS data only.
- 2) Grids have been derived from UHRS data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Trigonos Bldg, Windmill Hill Business Park, Whitehill Way, Swindon, SN5 6PB, United Kingdom

AWEL Y MÔR

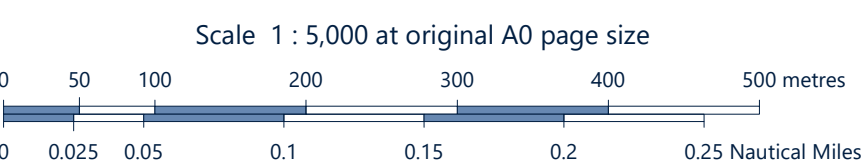
Fugro

Victory House, Trafalgar Wharf (Unit 16), Hamilton Road, Portchester PO6 4PX
Tel: +44 23 9220 5500



**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

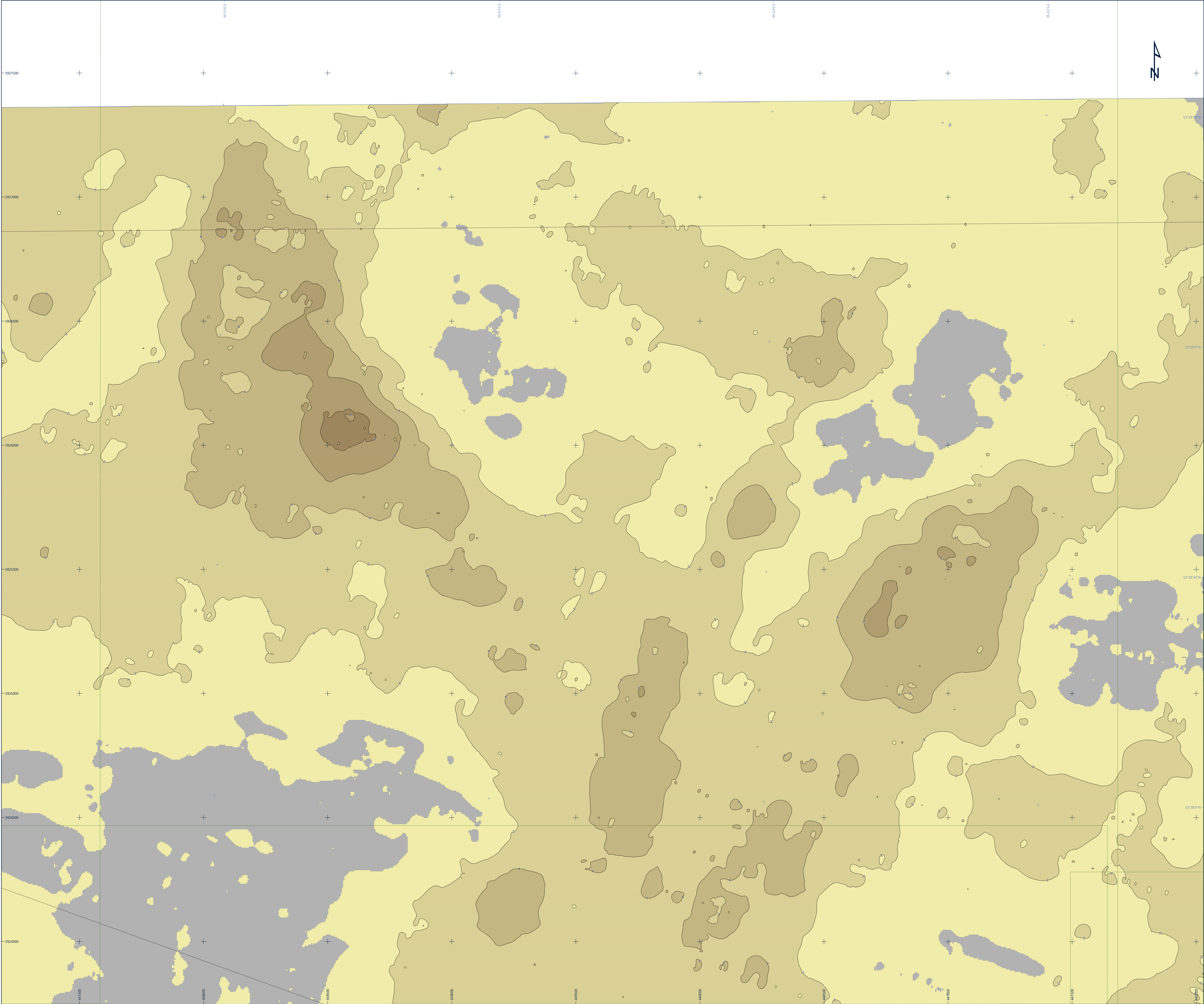
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Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	ODT	DS	S8	BPT
02	01 December 2020	Final Issue - Revision 2	ODT	DS	S8	BPT
03	04 February 2021	Final Relssue - Revision 3	ODT	DS	S8	BPT

Fugro Project No.	Vessel(s)	Survey Date
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200655	Fugro Mercator	10 June to
File Name		Chart No
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_01		01 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

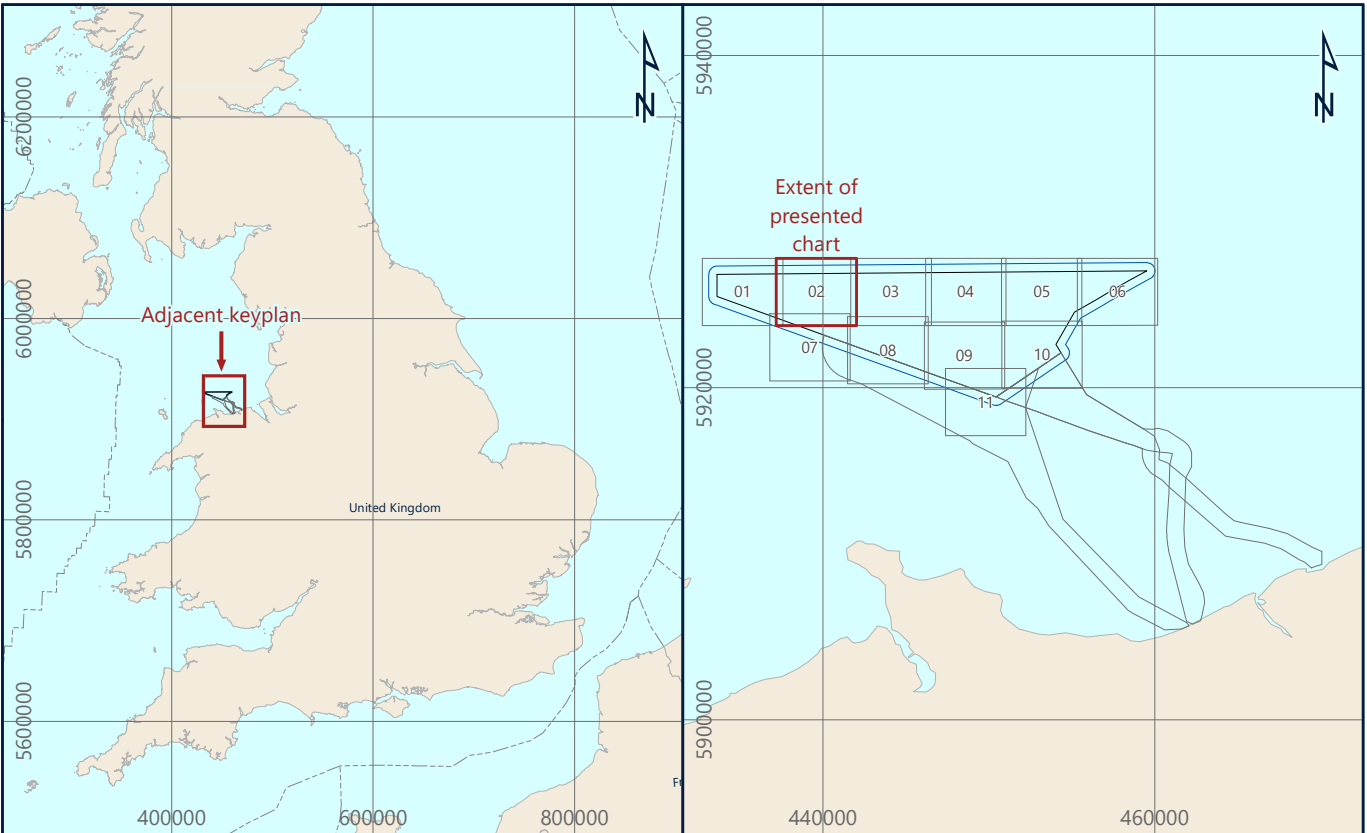
Notes

- Interpretation is from UHRS data only.
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Geodetic Parameters

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Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" N
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Way, Wrexham Hill Business Park, Wrexham, Shropshire, CH1 2PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 3500

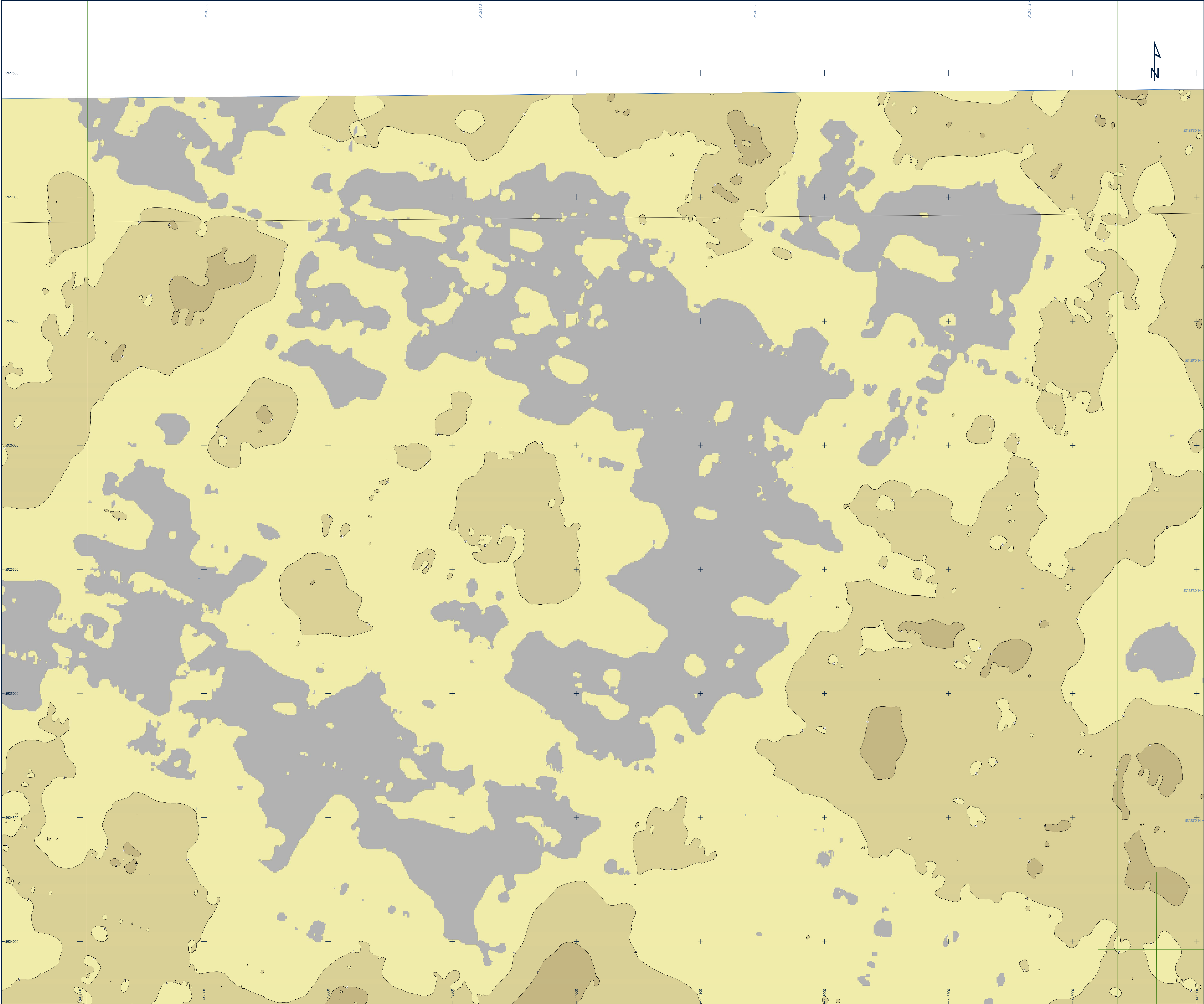


**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA**

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_02		02 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

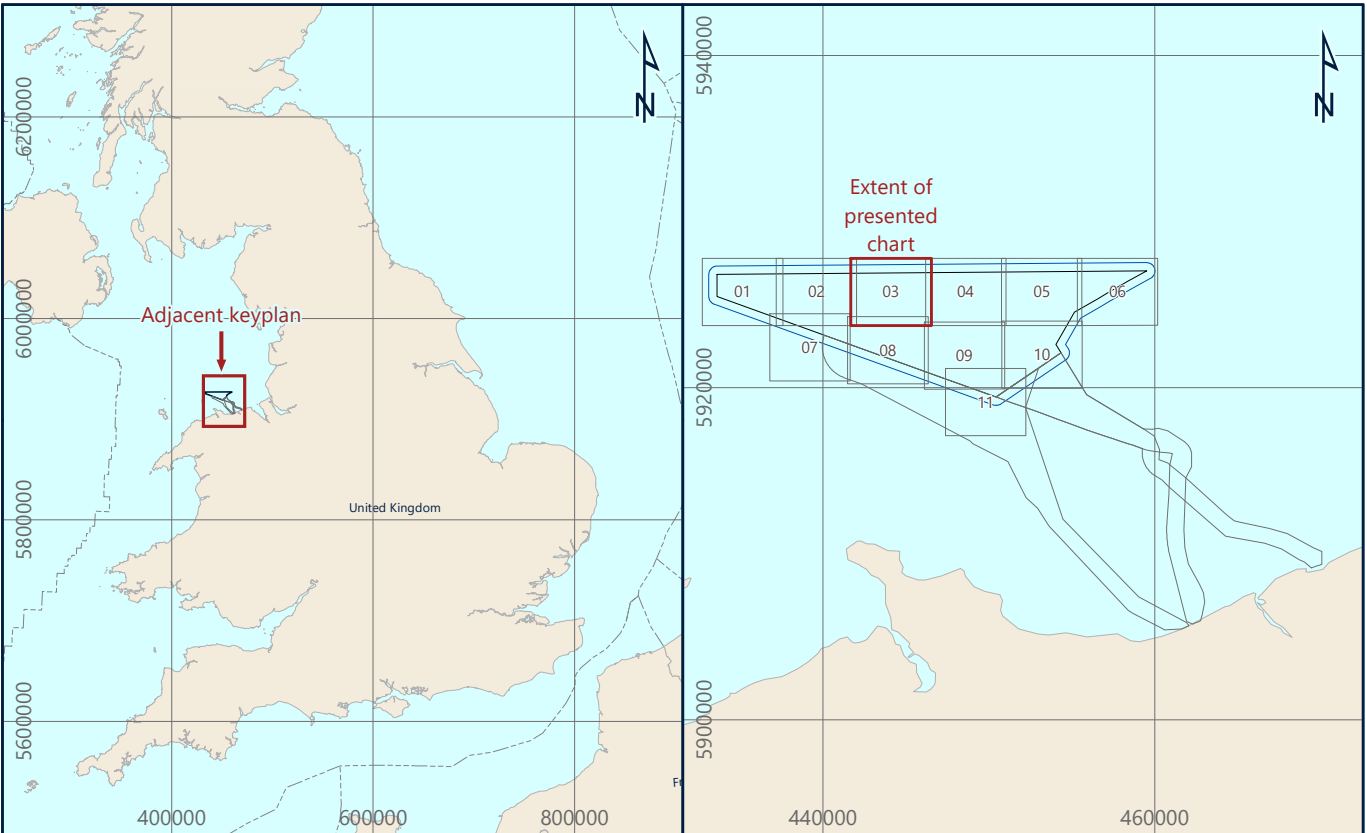
Notes

- Interpretation is from UHRS data only.
- Grids have been derived from UHRS data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
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Geodetic Parameters

Geodetic datum: World Geodetic System 1984
Ellipsoid: WGS84
Semi-Major Axis: 6,378,137.000 m
Inverse Flattening: 298.257223563
Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 07°00'00" W
Latitude of Origin: 07°00'00" N
False Easting: 500,000 mE
False Northing: 0 mN
Scale Factor at CM: 0.9996
Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Way, Wrenford Hill Business Park, Wrenford Way, Swanton, SWS 0PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 161, Hamilton Road, Porchester PO8 4PX
Tel: +44 23 9220 3500

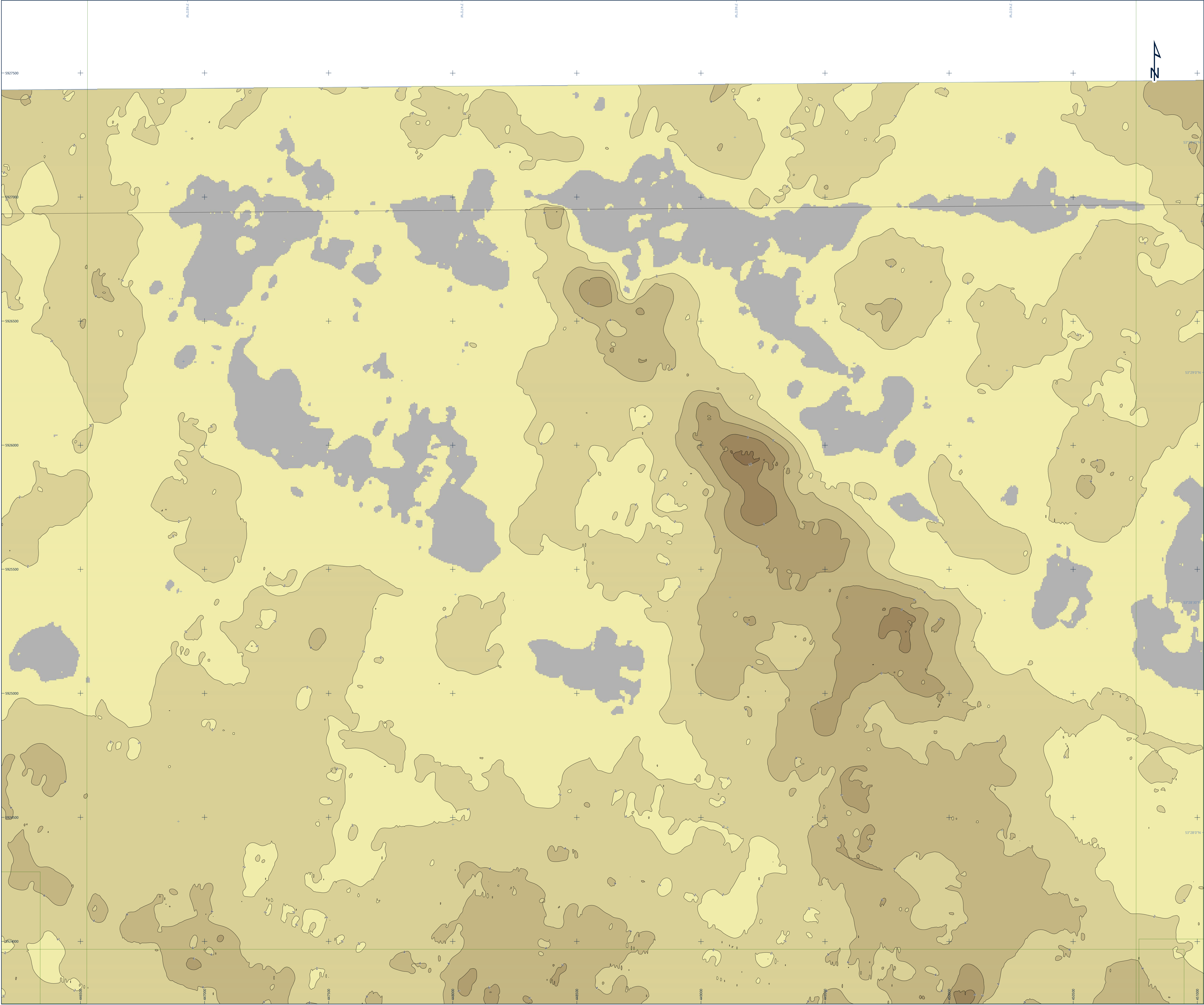
FUGRO

**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_03		03 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

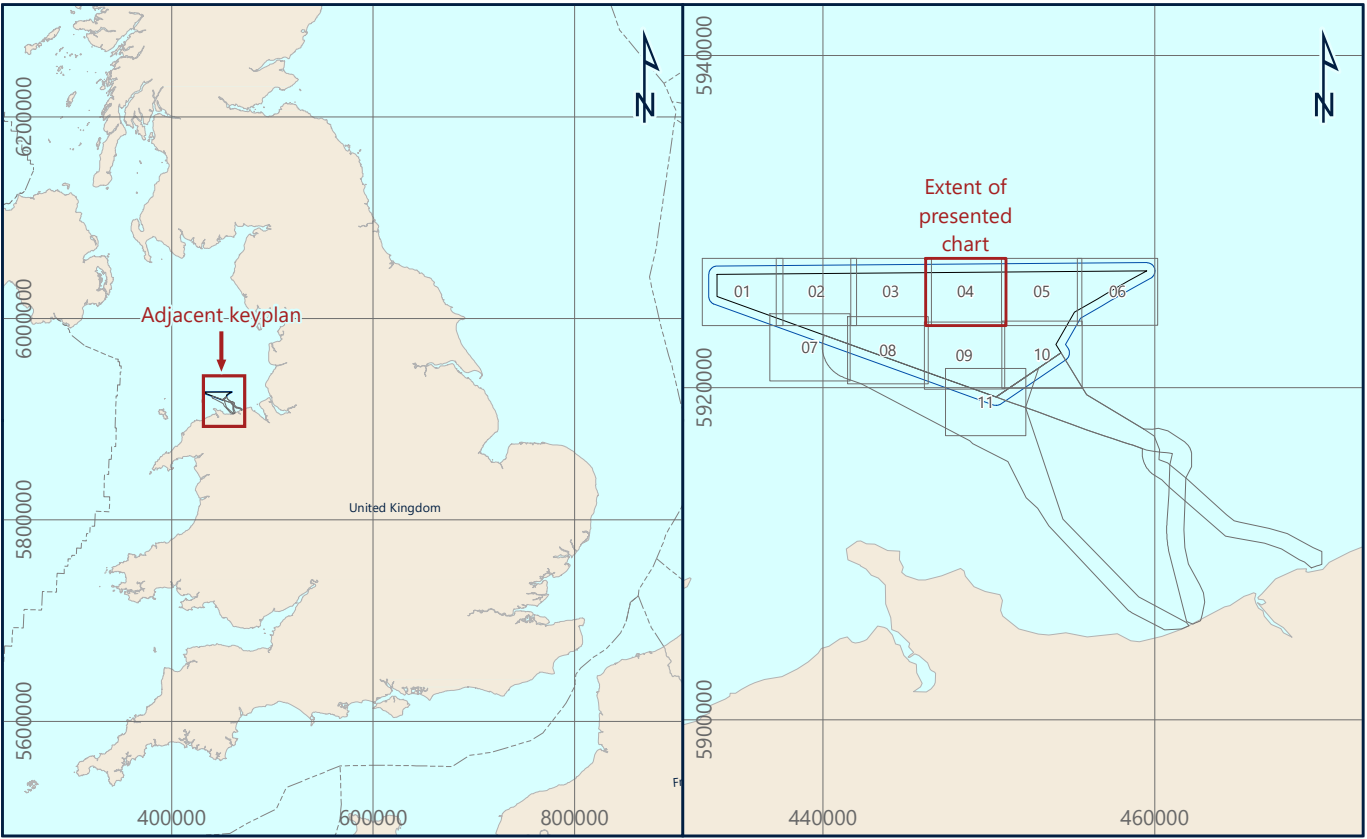
Notes

- Interpretation is from UHRS data only.
- Grids have been derived from UHRS data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernidol Hill Business Park, Wernidol Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellehar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3300

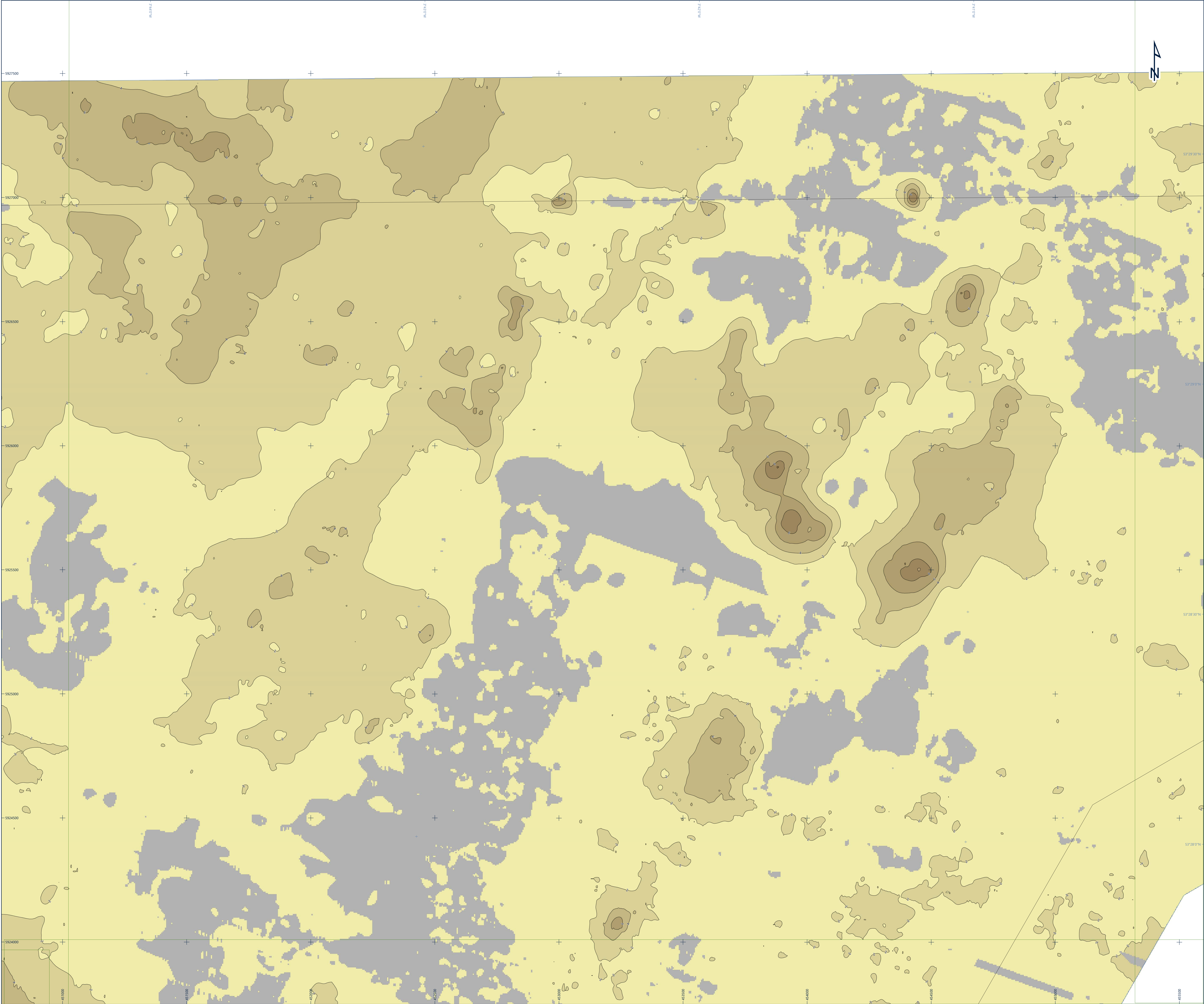


**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA**

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_04		04 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

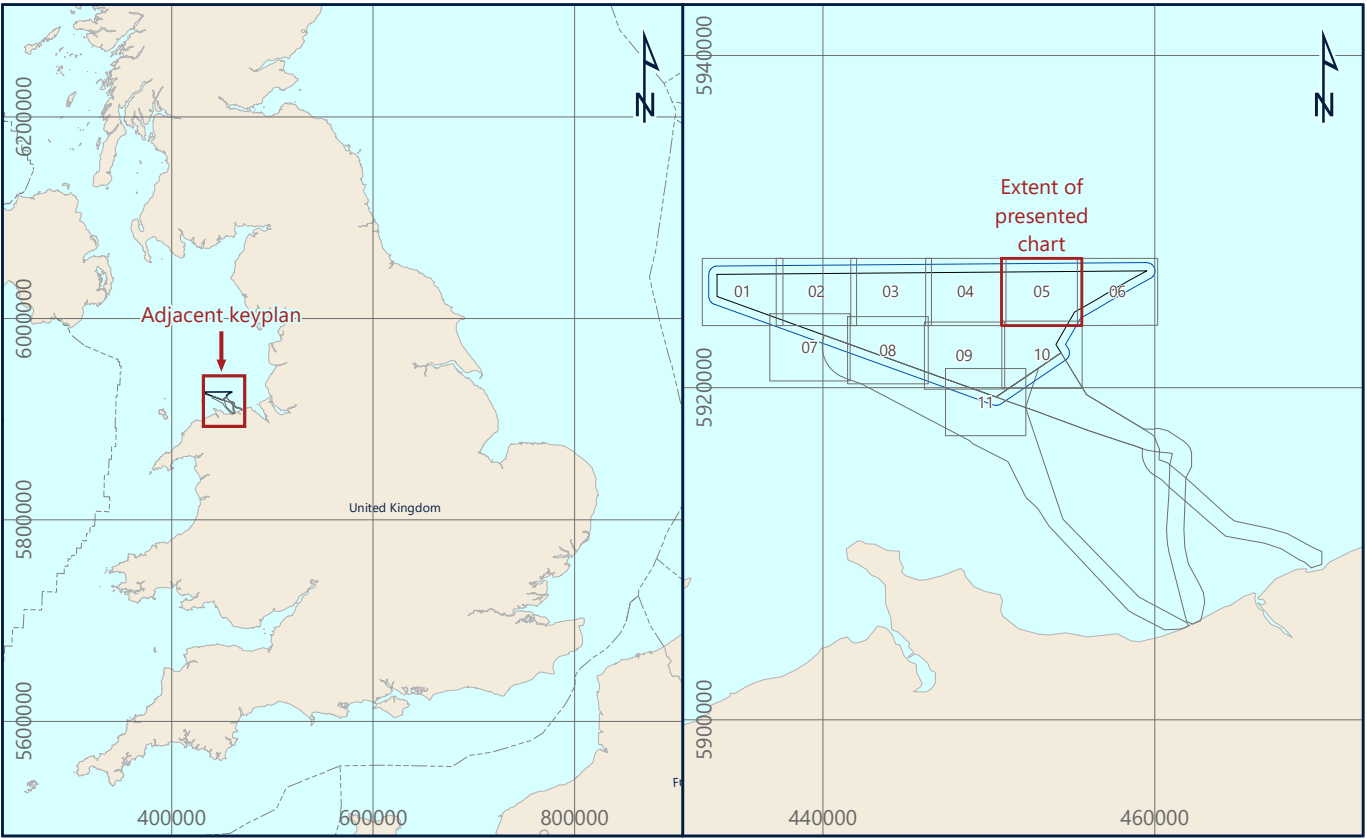
Notes

- Interpretation is from UHRS data only.
- Grids have been derived from UHRS data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Bldg, Warrand Hill Business Park, Warrand Hill, Swansea, SW5 6PE, United Kingdom

AWEL Y MÔR

Fugro

Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 3500

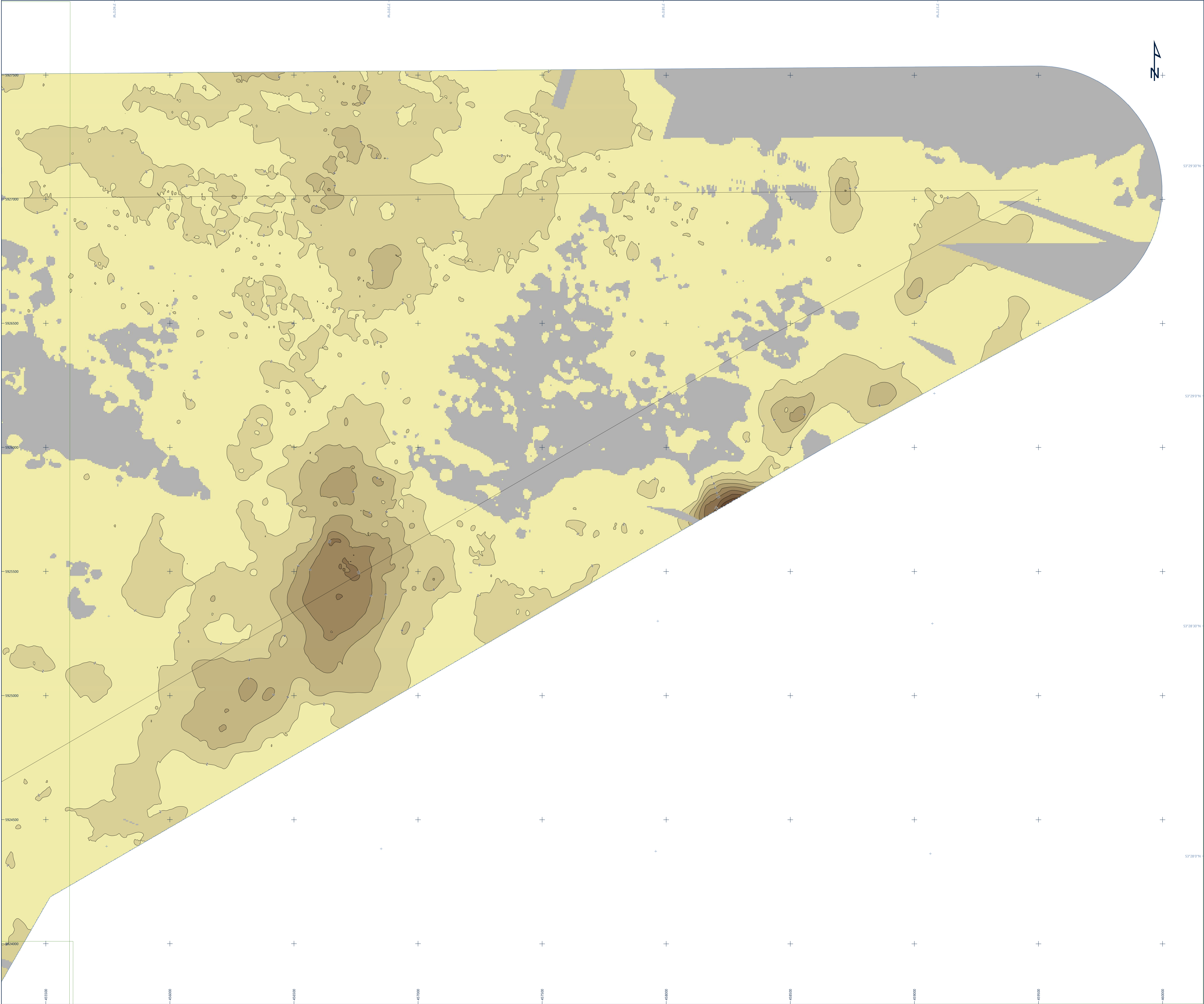


**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655.Array_R04_WIS_Lower_SedimentIsochore_UHRS_05		05 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

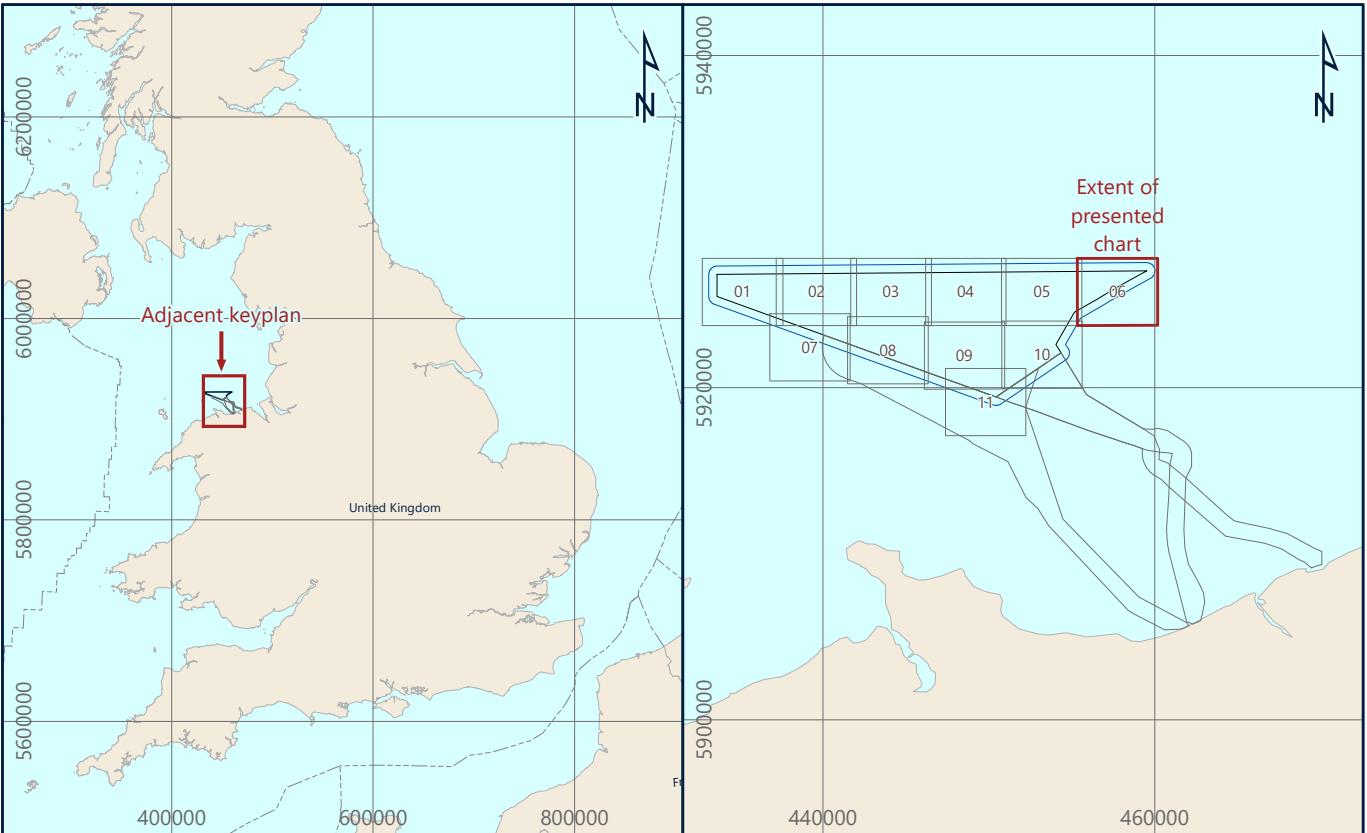
Notes

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Inverse Flattening	298.257222563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnau Blyg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trefleigar Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

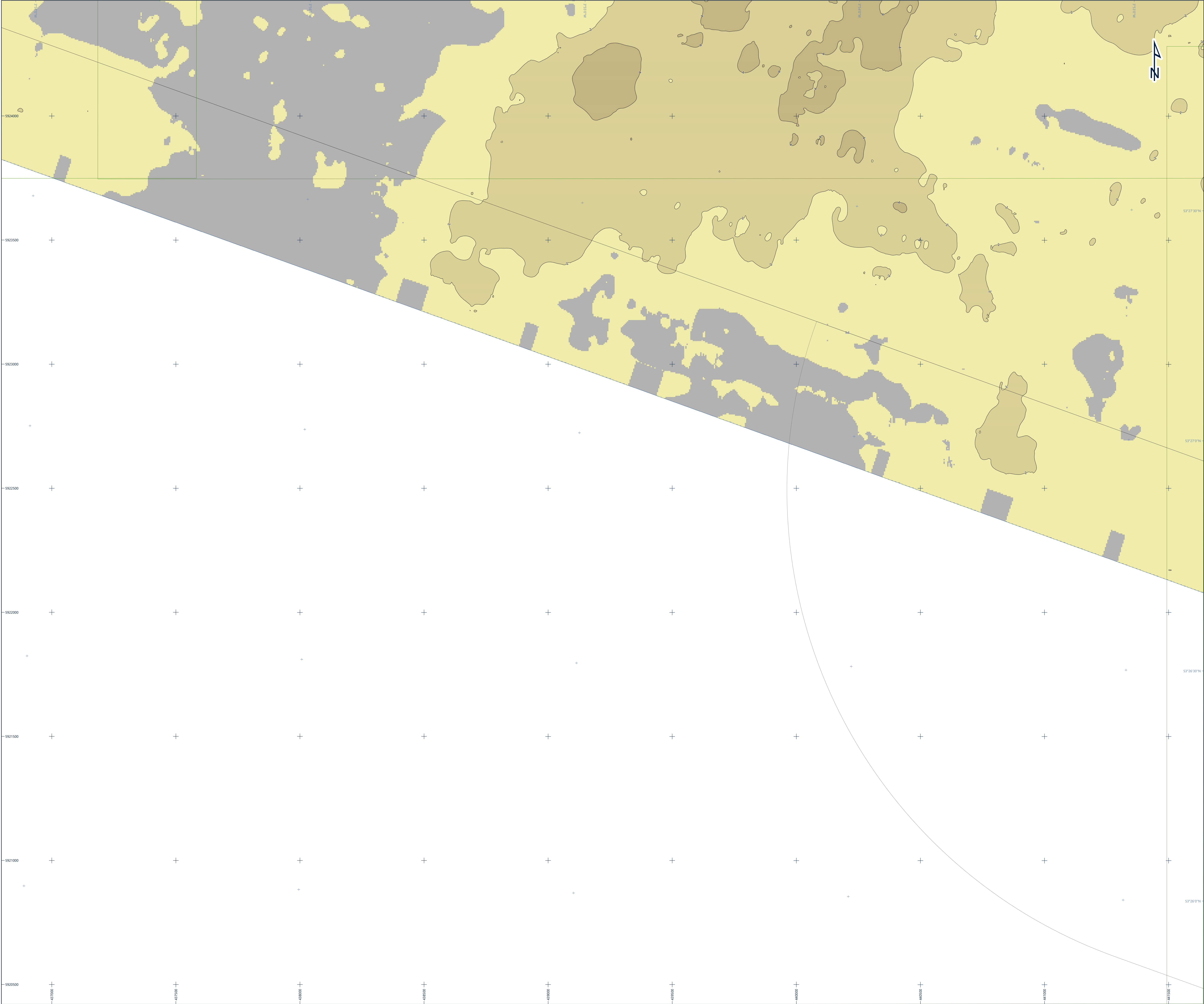


**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
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0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_06	06 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Exent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

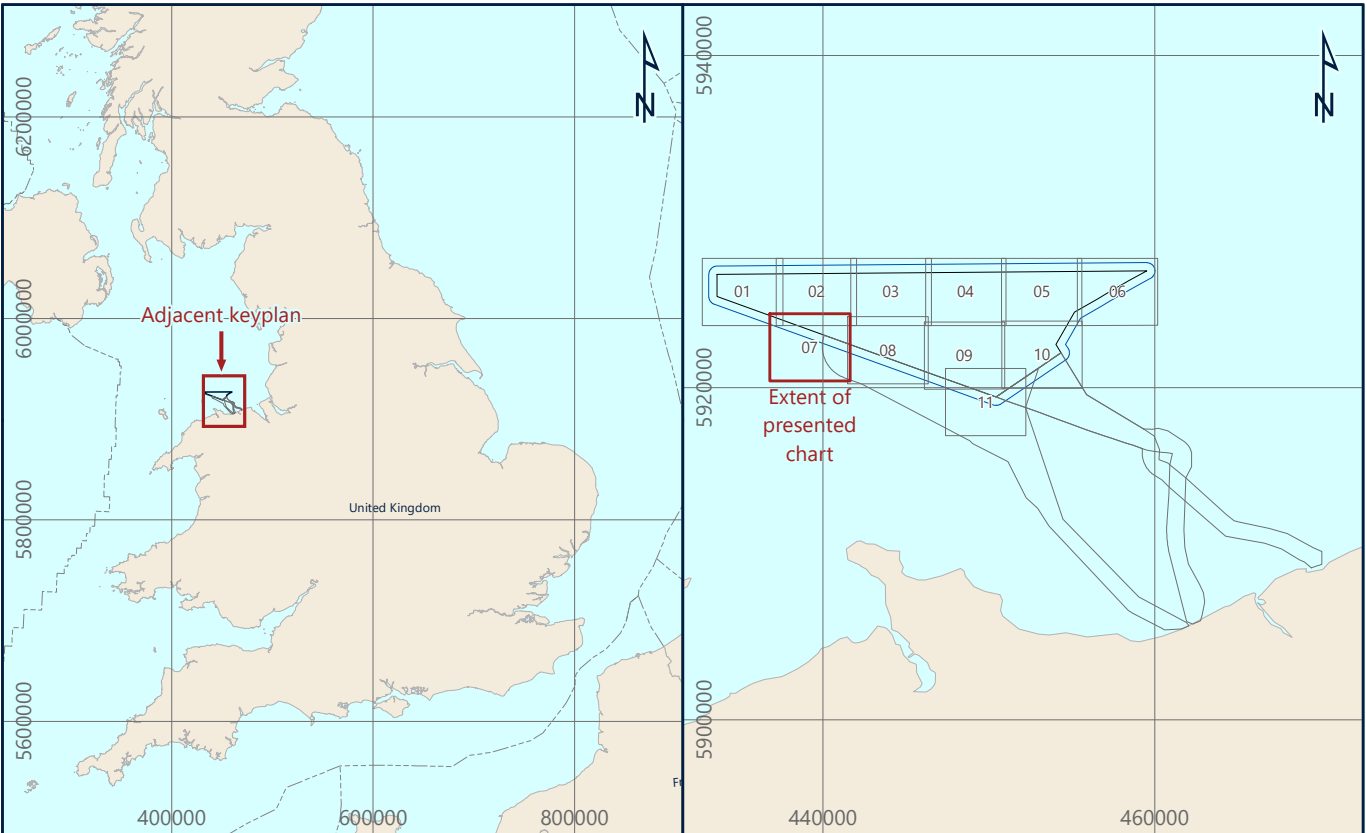
Notes

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257222563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 161, Hamilton Road, Portchester PO6 4PX
Tel: +44 23 9220 5500

FUGRO

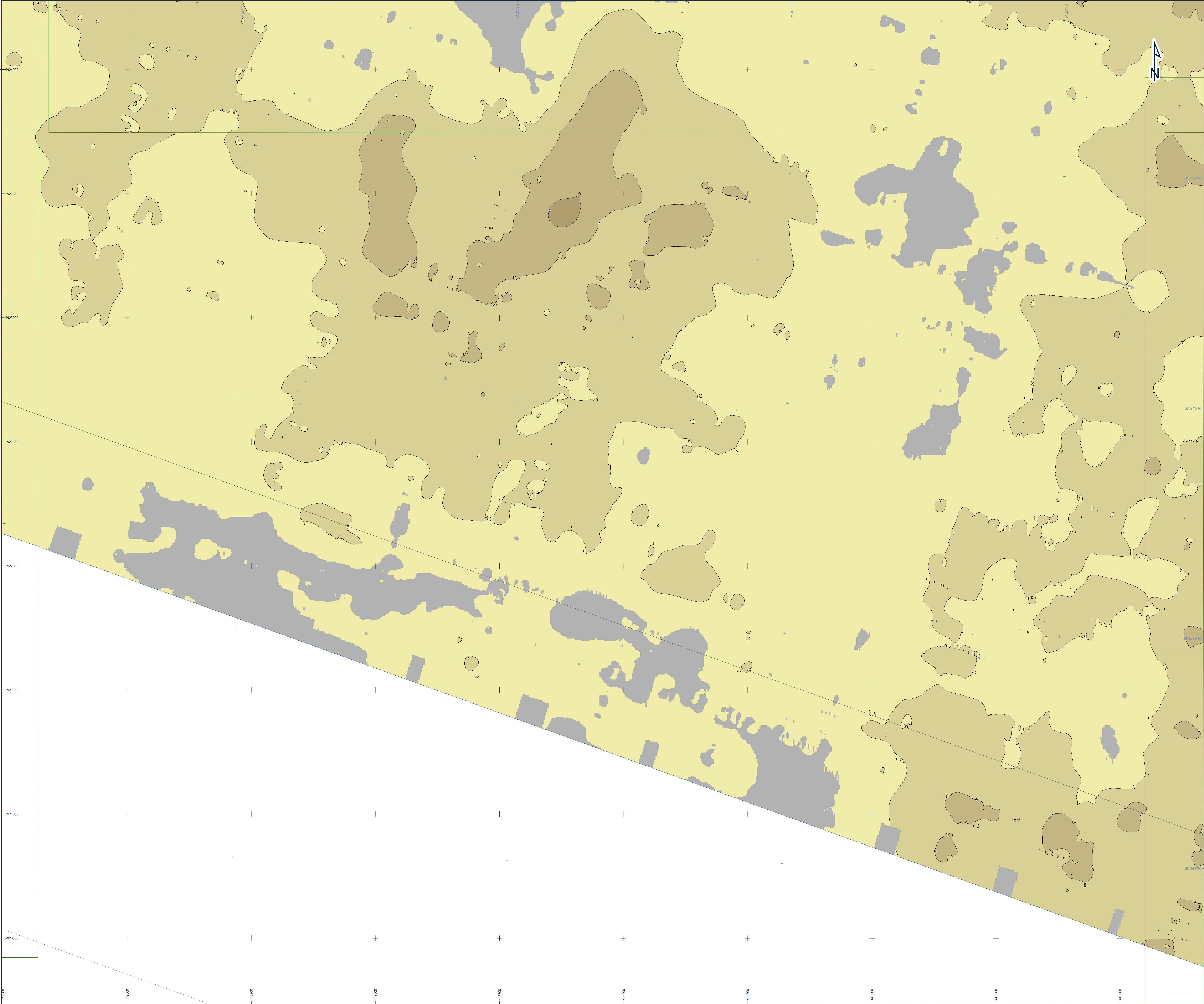
**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA**

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
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Fugro Project No. 200655 Vessel(s) Fugro Mercator Survey Date 10 June to 11 August 2020

File Name 200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_07 Chart No. 07 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

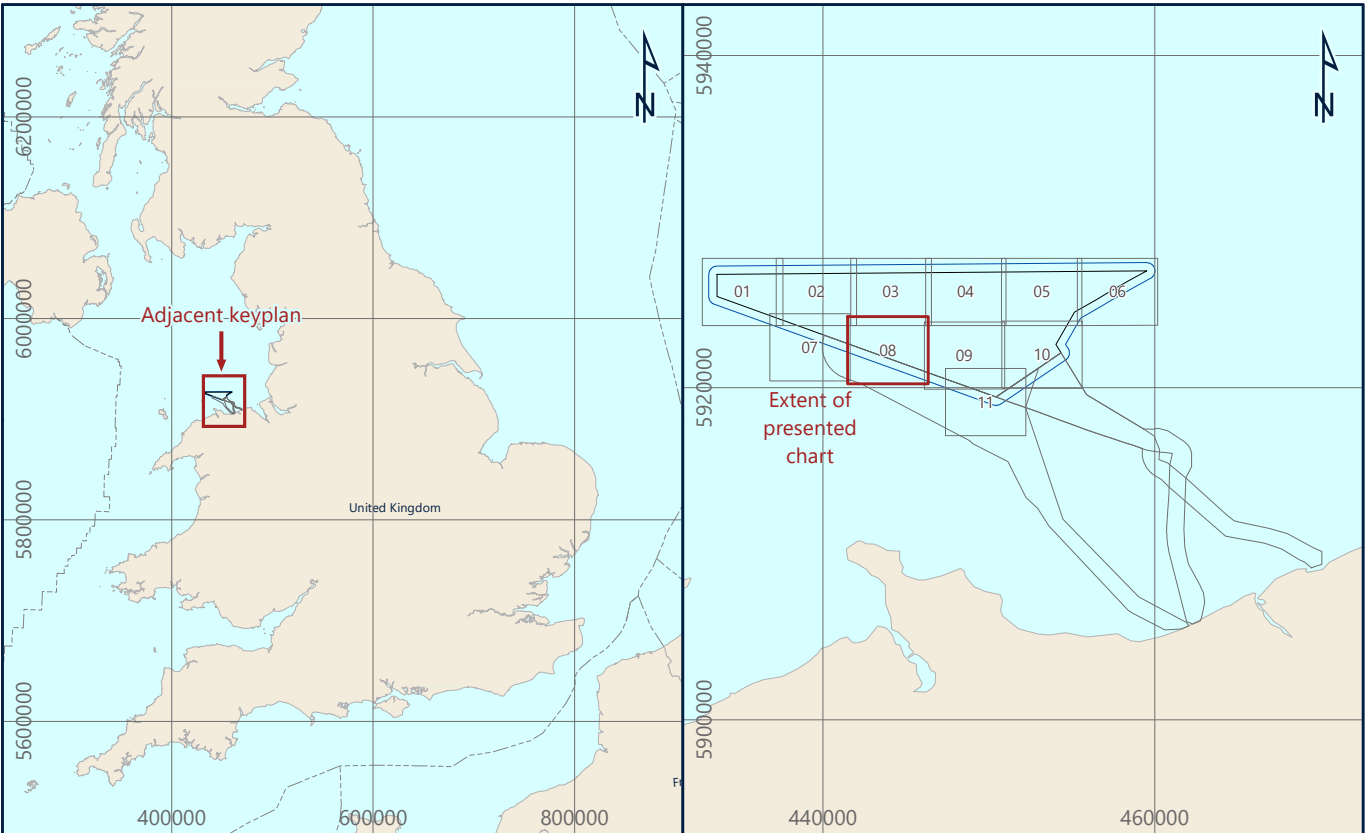
Notes

- Interpretation is from UHRS data only.
- Grids have been derived from UHRS data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
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Geodetic Parameters

Geodetic datum: World Geodetic System 1984
Ellipsoid: WGS84
Semi-Major Axis: 6,378,137.000 m
Inverse Flattening: 298.257223563
Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 03°00'00" W
Latitude of Origin: 07°00'00" N
False Easting: 500,000 mE
False Northing: 0 mN
Scale factor at CM: 0.9996
Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Bldg, Wernall Hill Business Park, Wernall Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

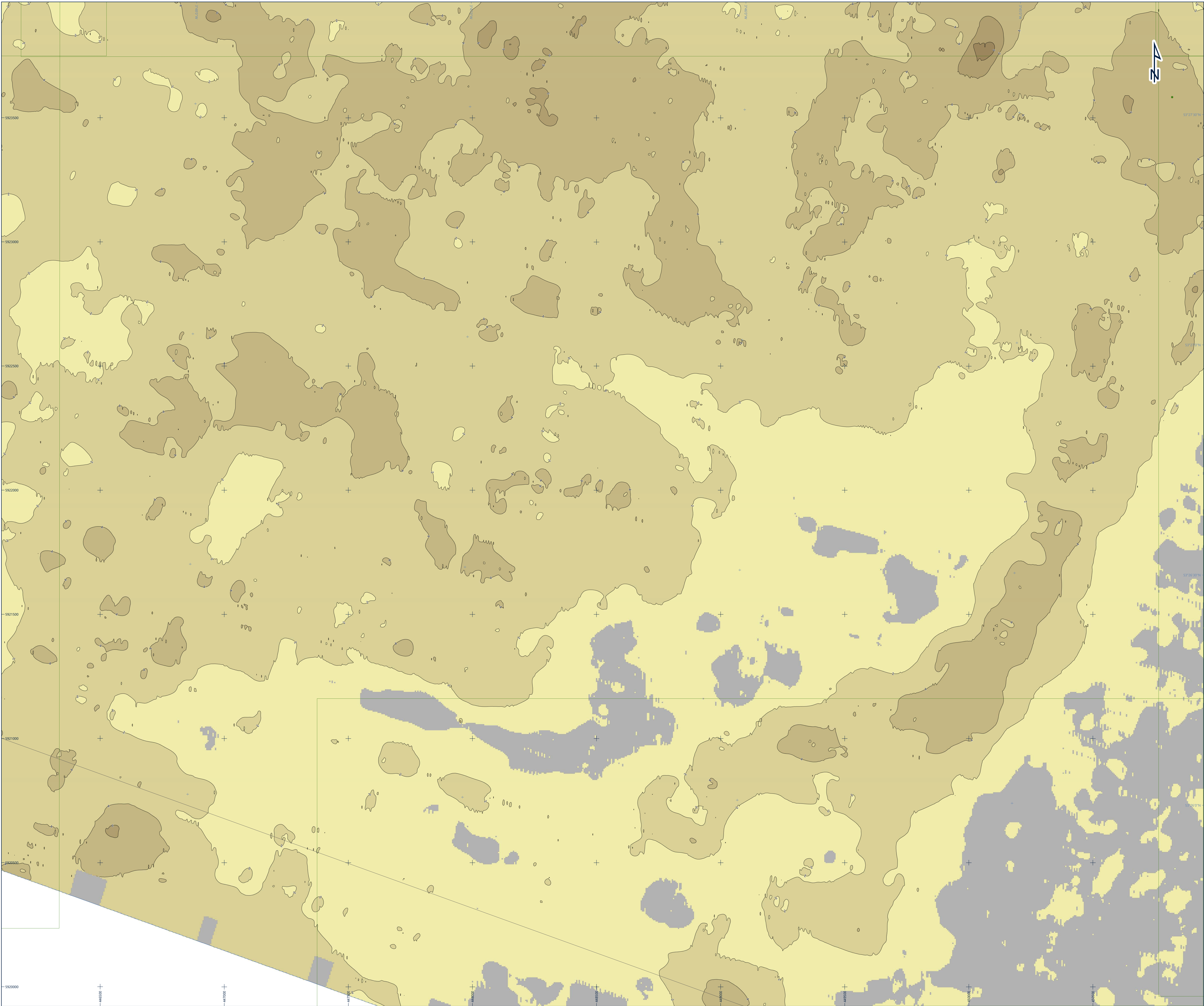
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**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_08		08 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Exent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

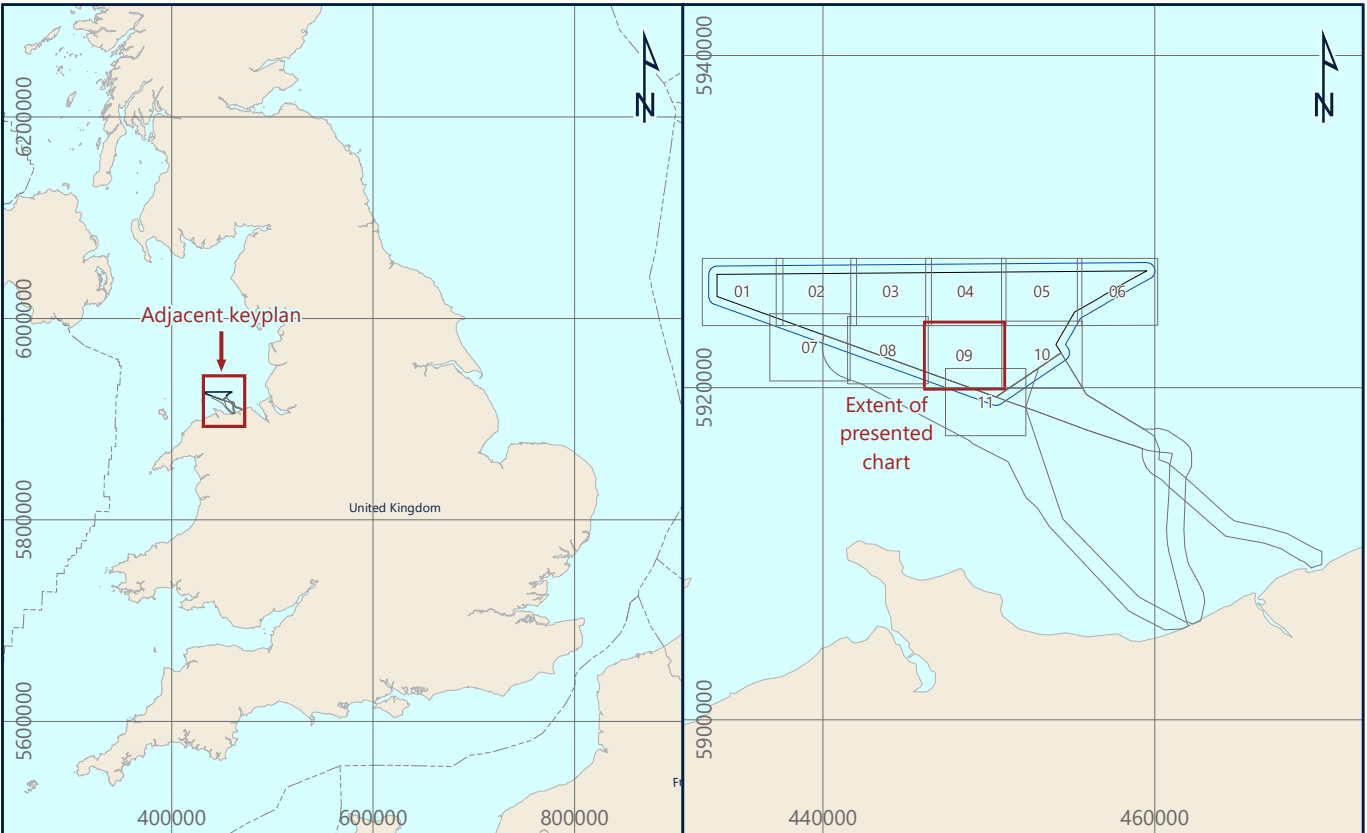
Notes

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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



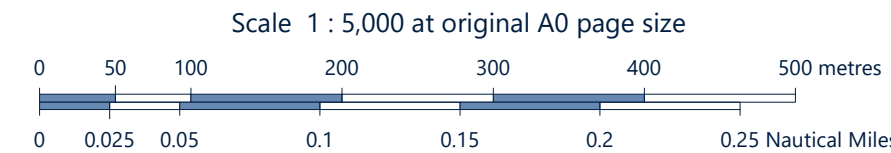
Awel Y Môr Offshore Wind Farm Ltd
Tighefnis Blyg, Wernall Hill Business Park, Wernall Way, Salway, SWS 4PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellehar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 5500



**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_09		09 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Exent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

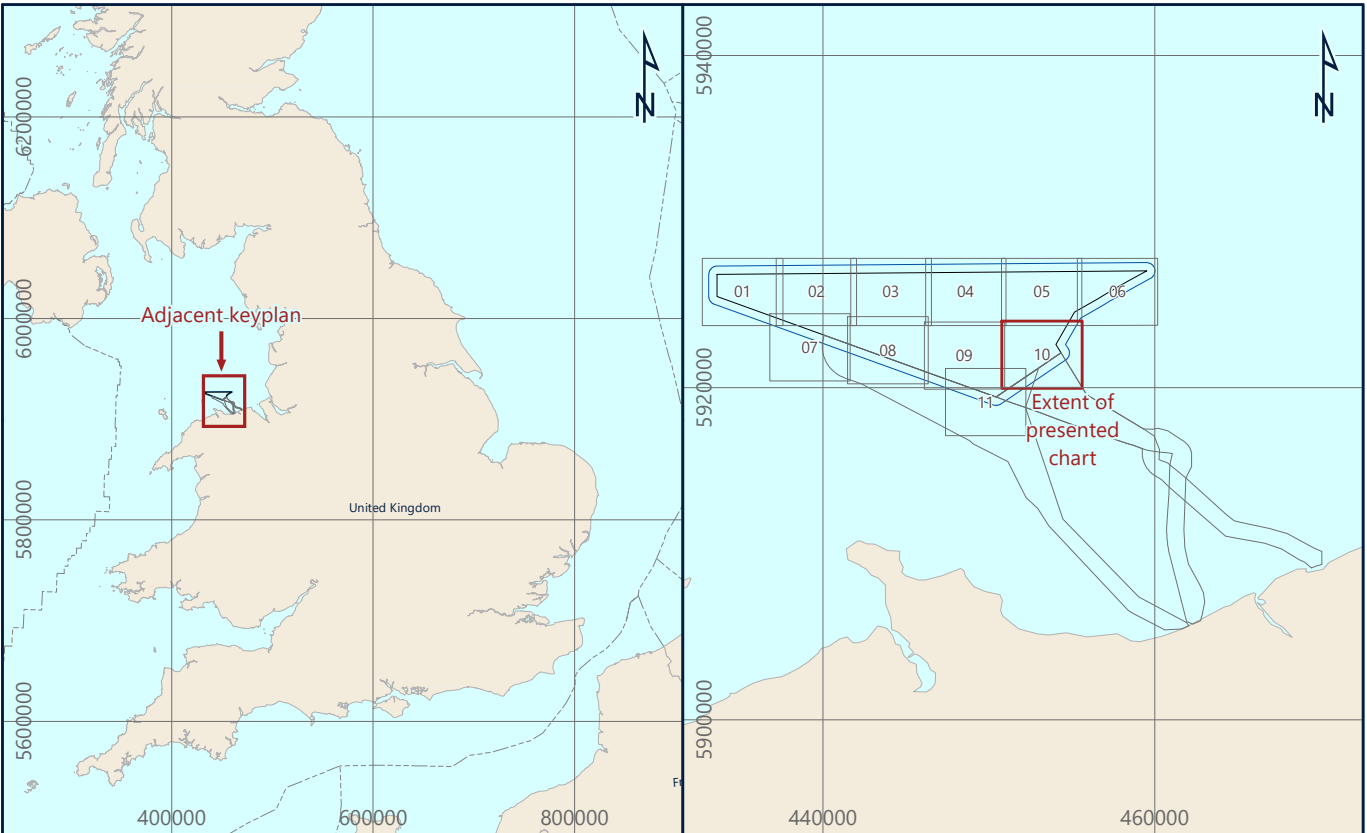
Notes

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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnau Blyg, Wernall Hill Business Park, Wernall Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellehar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 5500

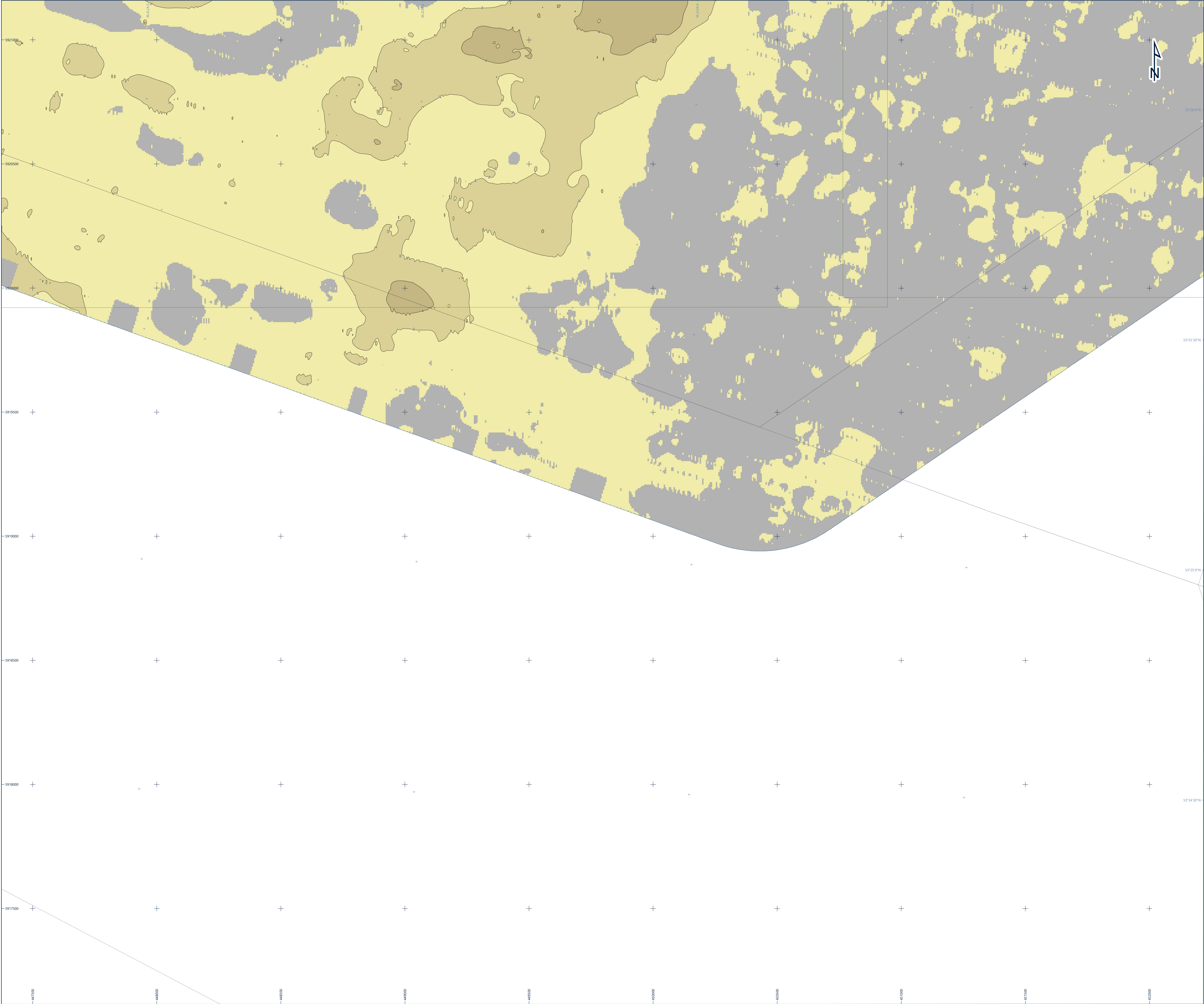
FUGRO

**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_10		10 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

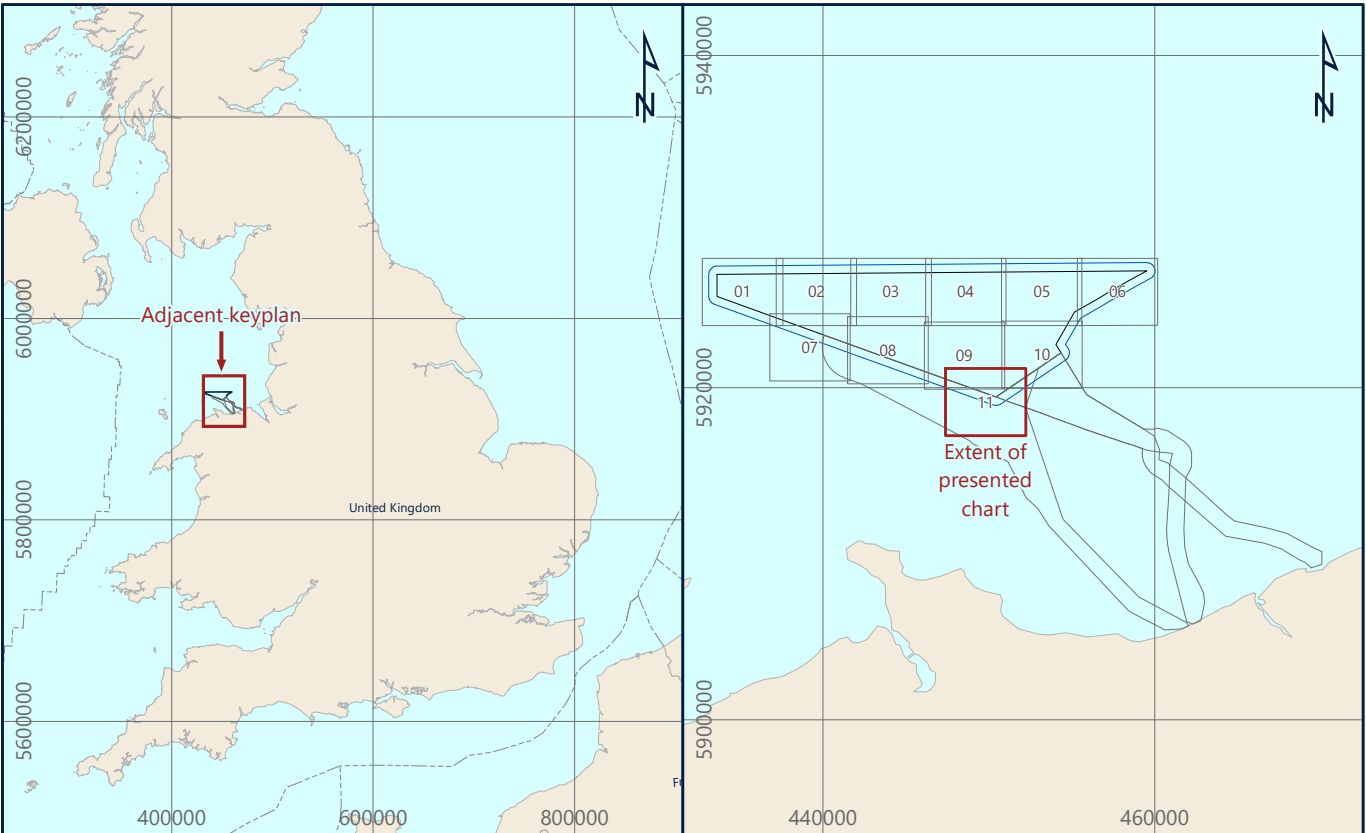
Notes

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Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



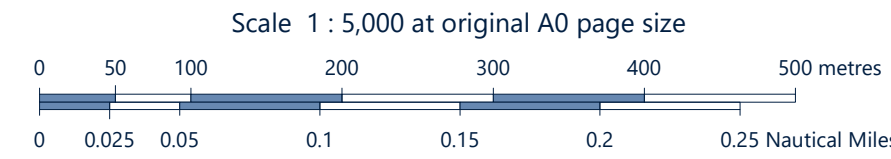
Awel Y Môr Offshore Wind Farm Ltd
Tighefnis Blyg, Wernand Hill Business Park, Wernand Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellicker Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

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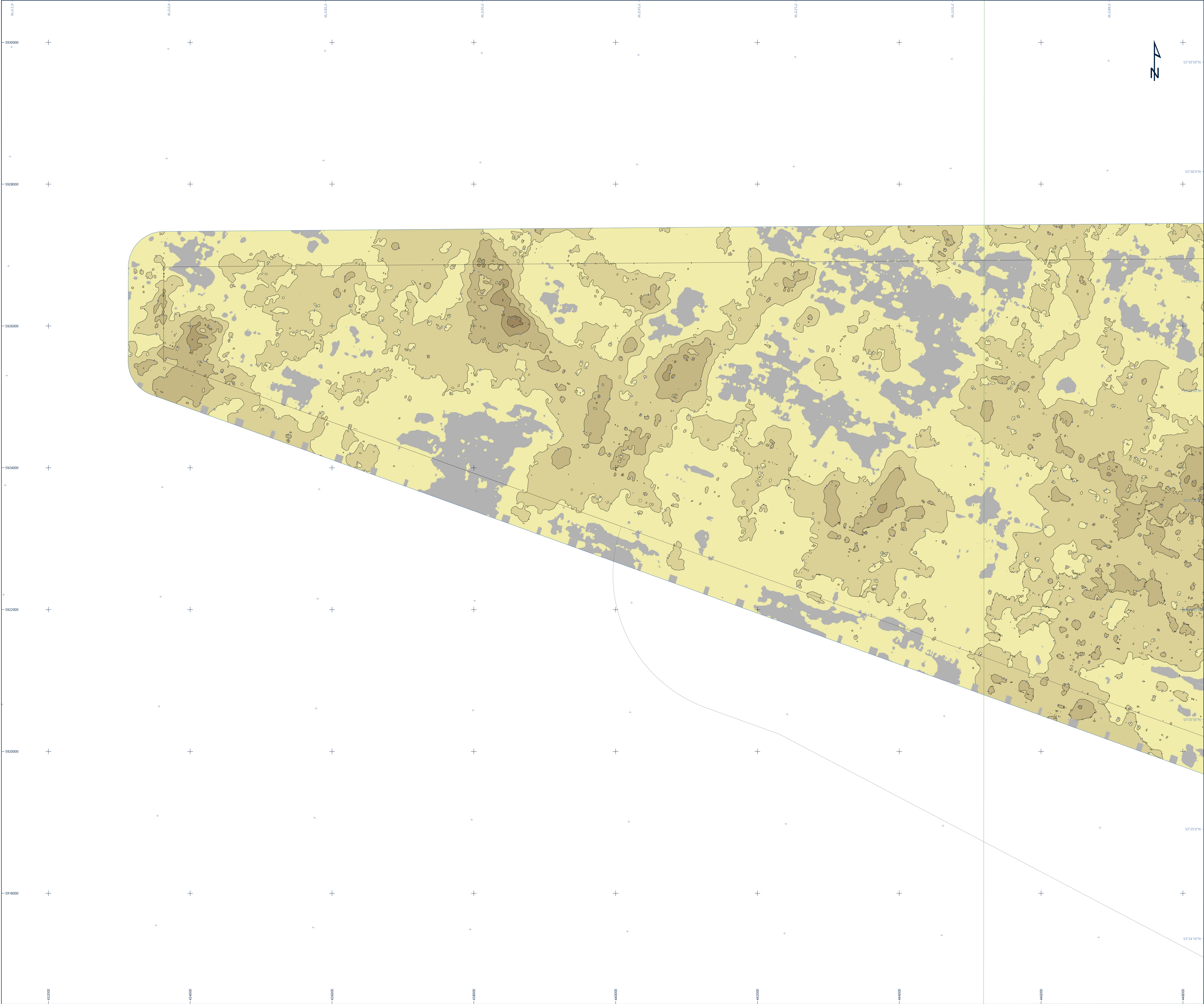
**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No. 200655 Vessel(s) Fugro Mercator Survey Date 10 June to 11 August 2020

File Name 200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_11 Chart No. 11 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

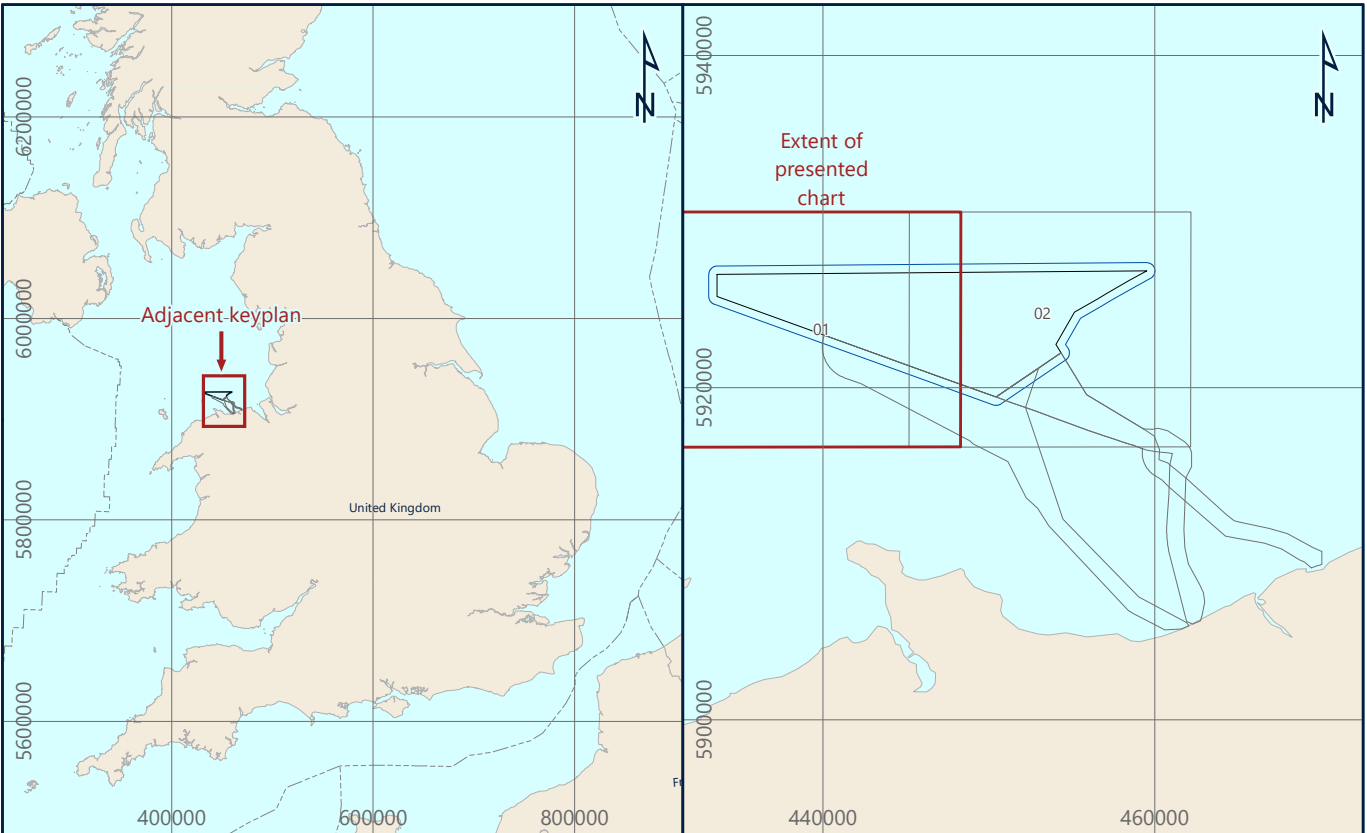
Notes

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- Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
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Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257222563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

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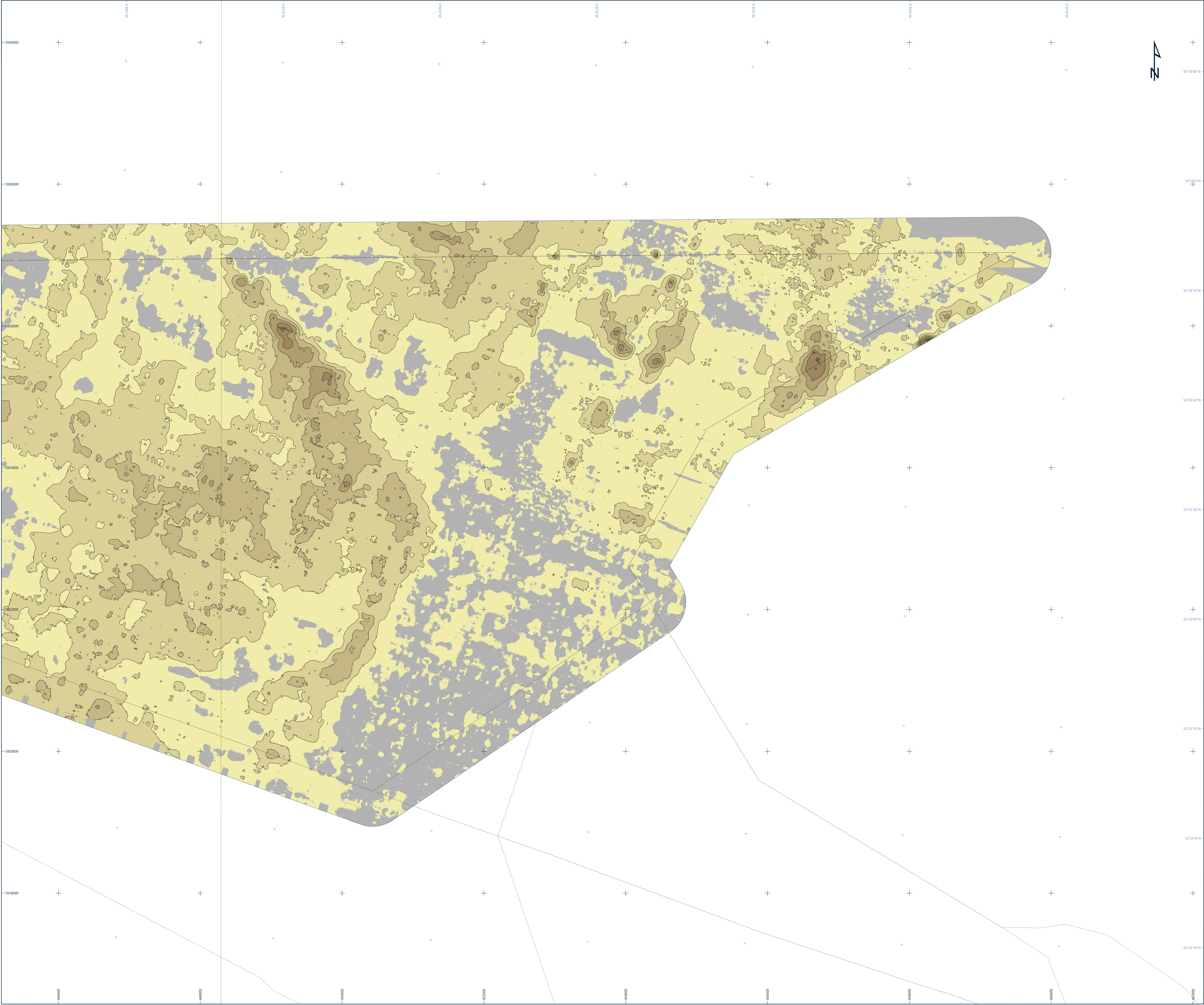
R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE UHRS OVERVIEW AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

Scale 1 : 17,500 at original A0 page size



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
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Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_Overview_01	01 of 02	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

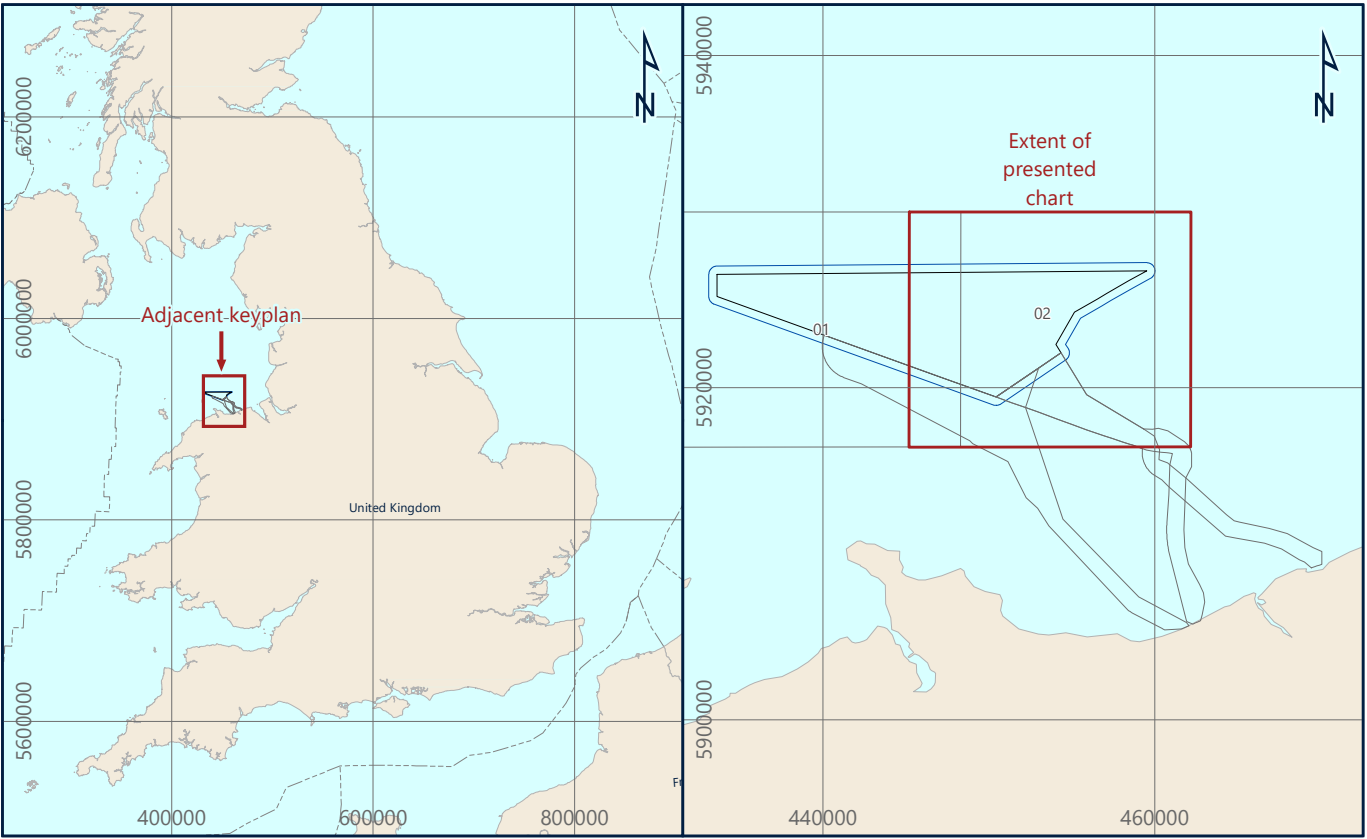
Notes

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Geodetic Parameters

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Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



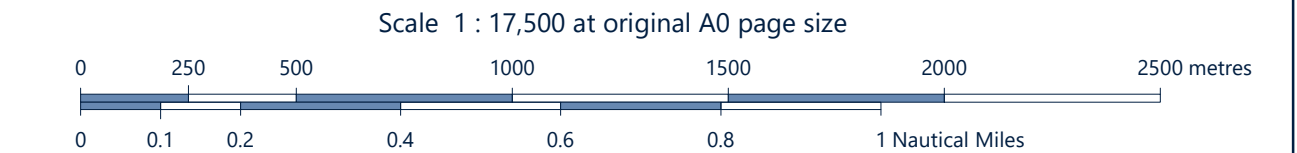
Awel Y Môr Offshore Wind Farm Ltd
Tigwrys Bly, Wernall Hill Business Park, Wernall Way, Salford, S15 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trelleborg Wharf Unit 161, Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 5500

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**R04 WEST IRISH SEA LOWER
SEDIMENT ISOCHORE UHRS OVERVIEW**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Relissue - Revision 2	OOT	DS	SB	BPT
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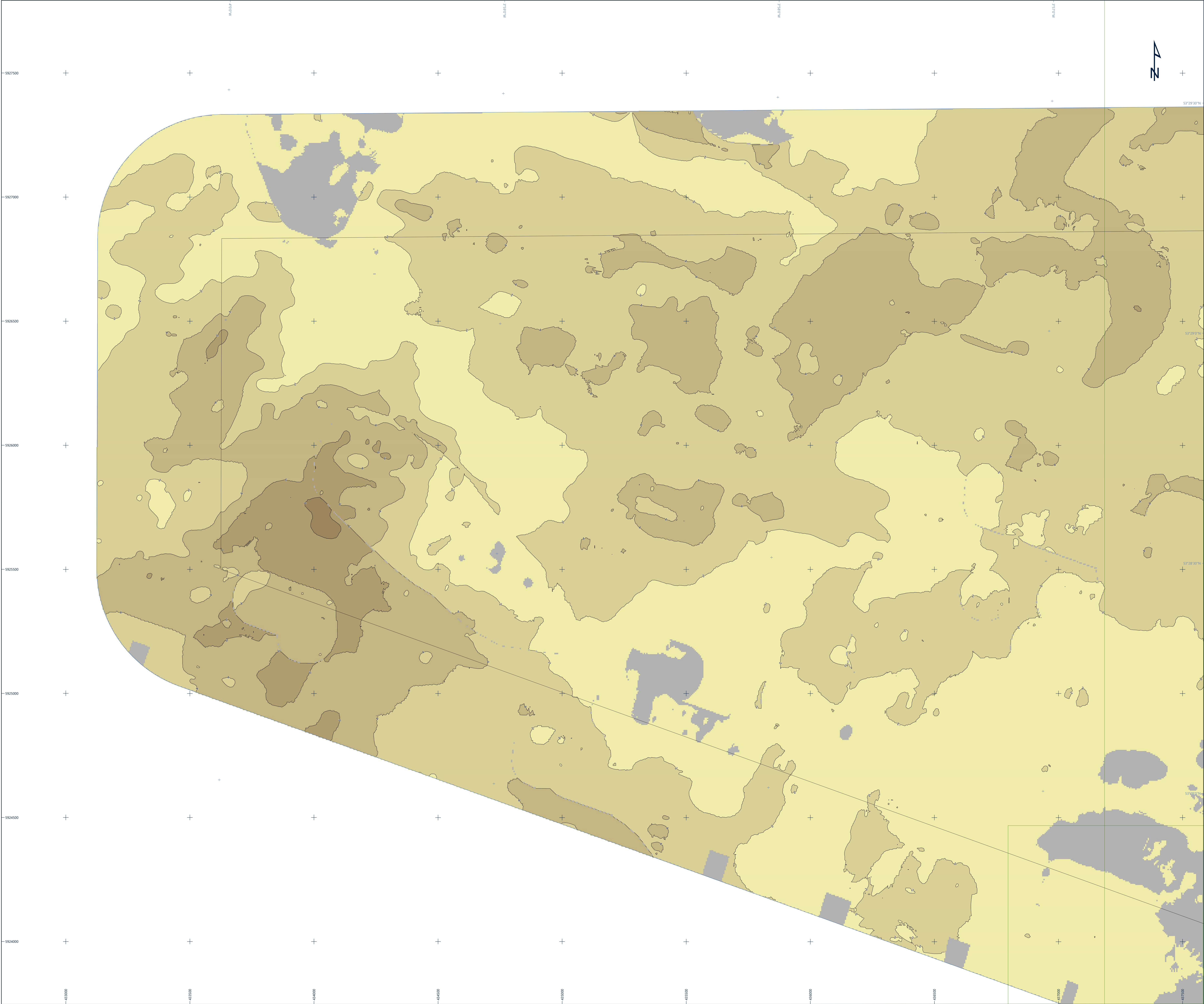
Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_UHRS_Overview_02		02 of 02

Appendix K

Charts - R04 Western Irish Sea

Lower Sediment Isochore

(Combined SBP and UHRS)



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

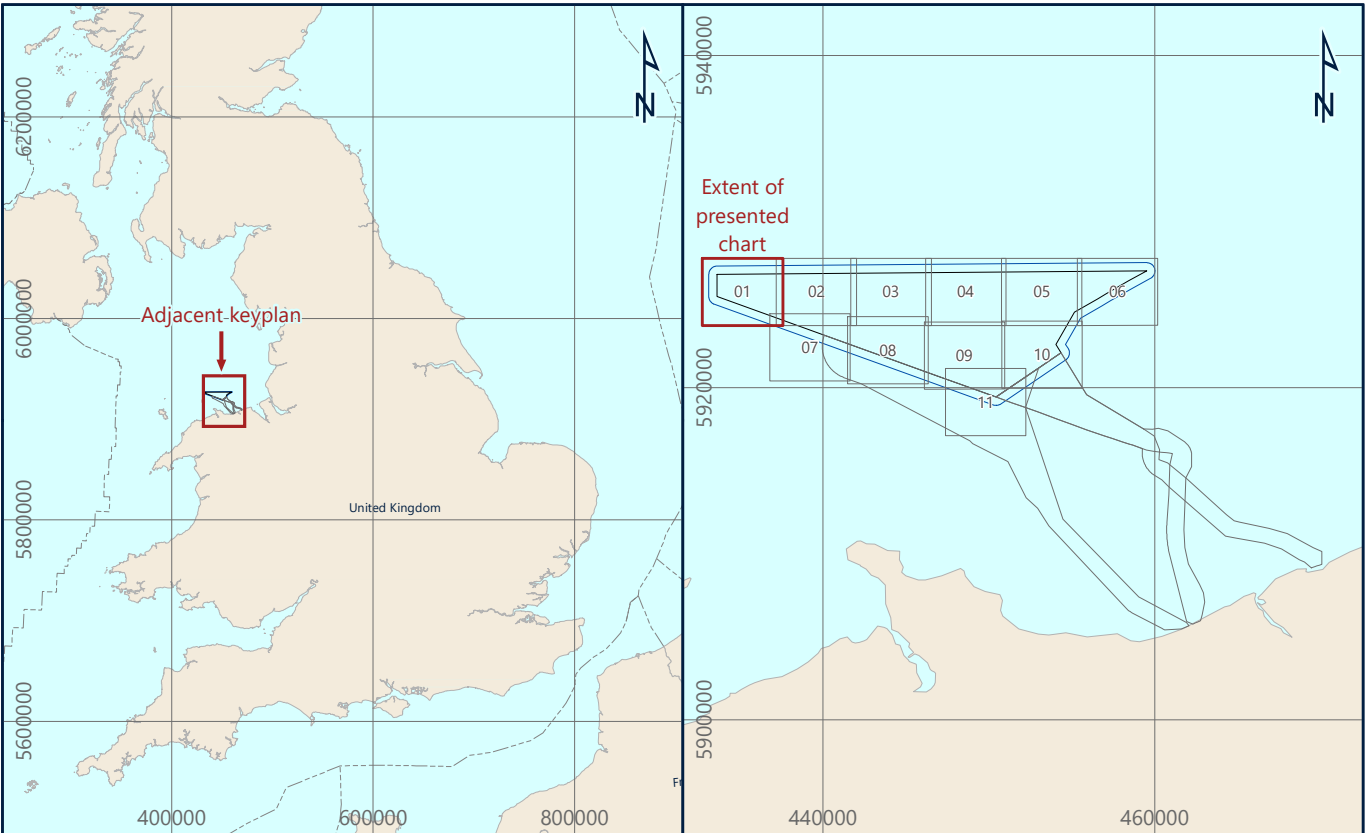
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innmar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.
- 4) Combined interpretation from SBP and UHRS data.

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Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



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AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3300

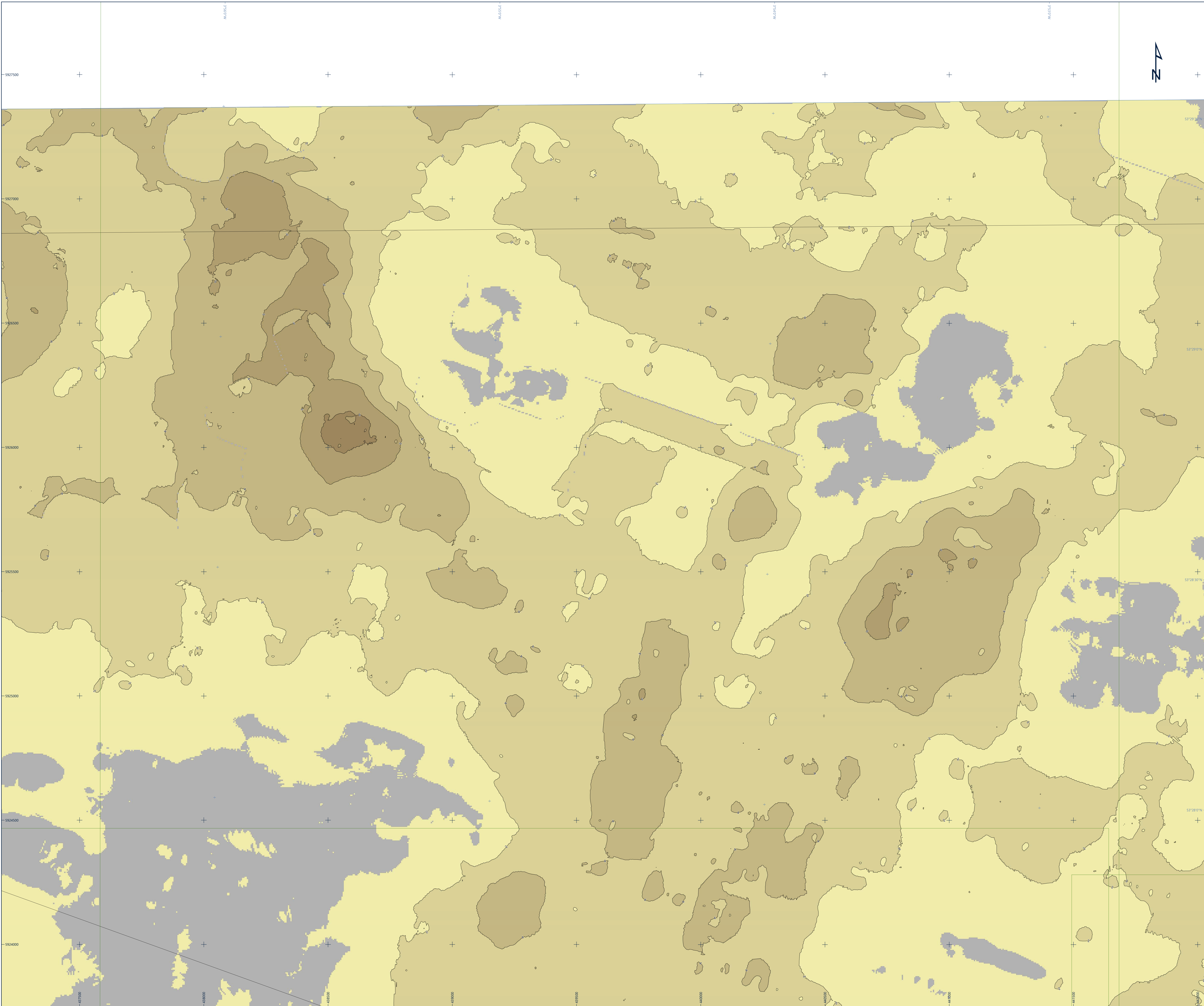
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**R04 WEST IRISH SEA LOWER SEDIMENT
ISOCHORE (SBP AND UHRS) COMBINED**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_01		01 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

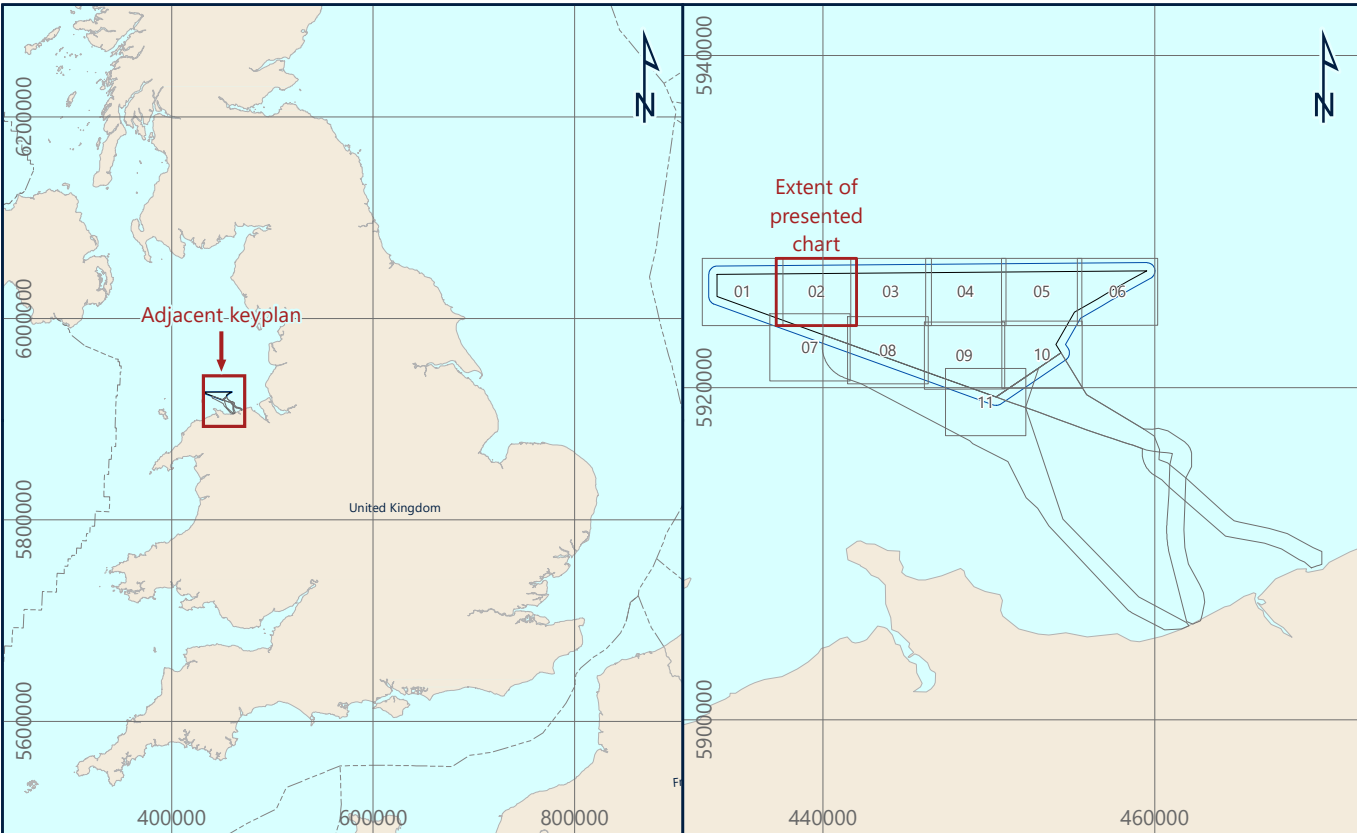
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innmar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019).
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depths converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.
- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" N
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Way, Wernidol Hill Business Park, Wernidol Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro

Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3500

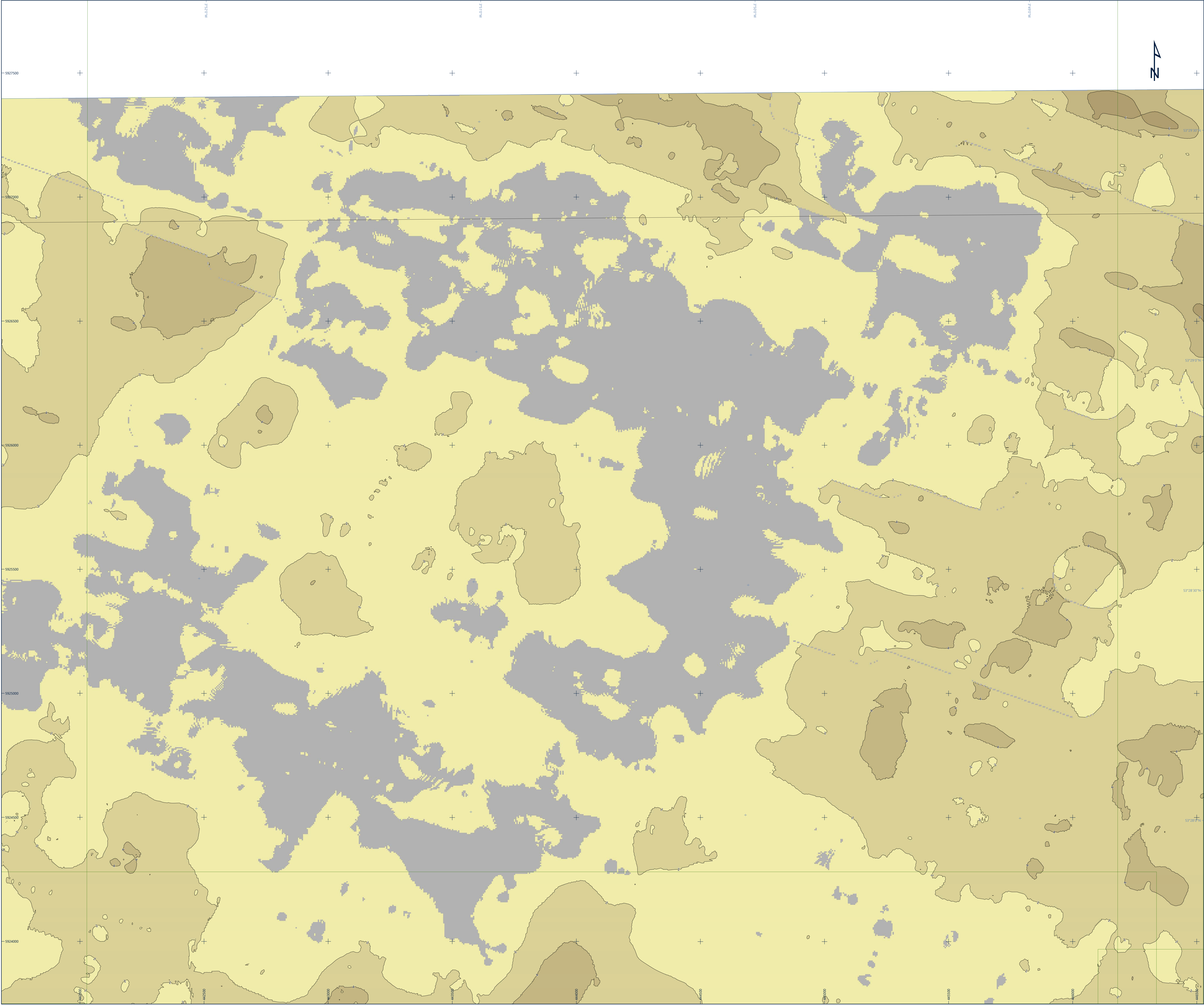
FUGRO

R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE (SBP AND UHRS) COMBINED AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_02		02 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

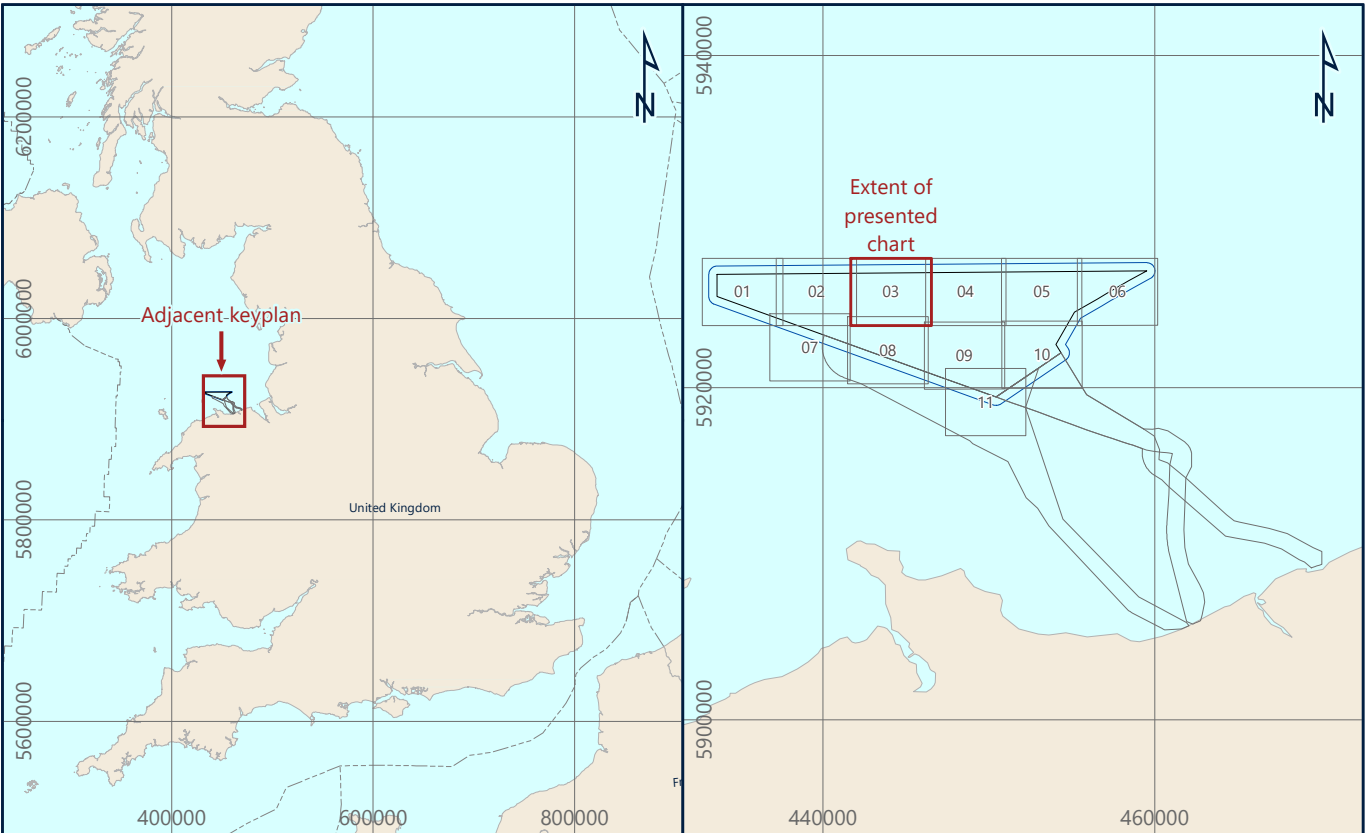
Notes

- 1) Sub-bottom profiler interpretation was conducted using Innomar Medium SES-2000 parametric sub-bottom profiler data.
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- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochore have been gridded with a 5 m cell size.
- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257222563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



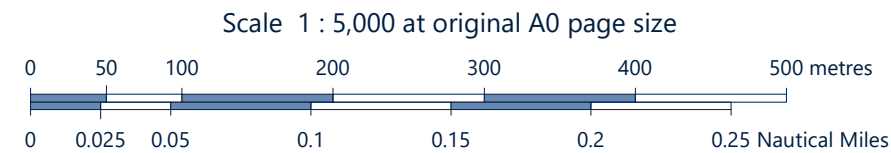
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernall Hill Business Park, Wernall Way, Swansea, SW5 9PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregilar Wharf Unit 16, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3300

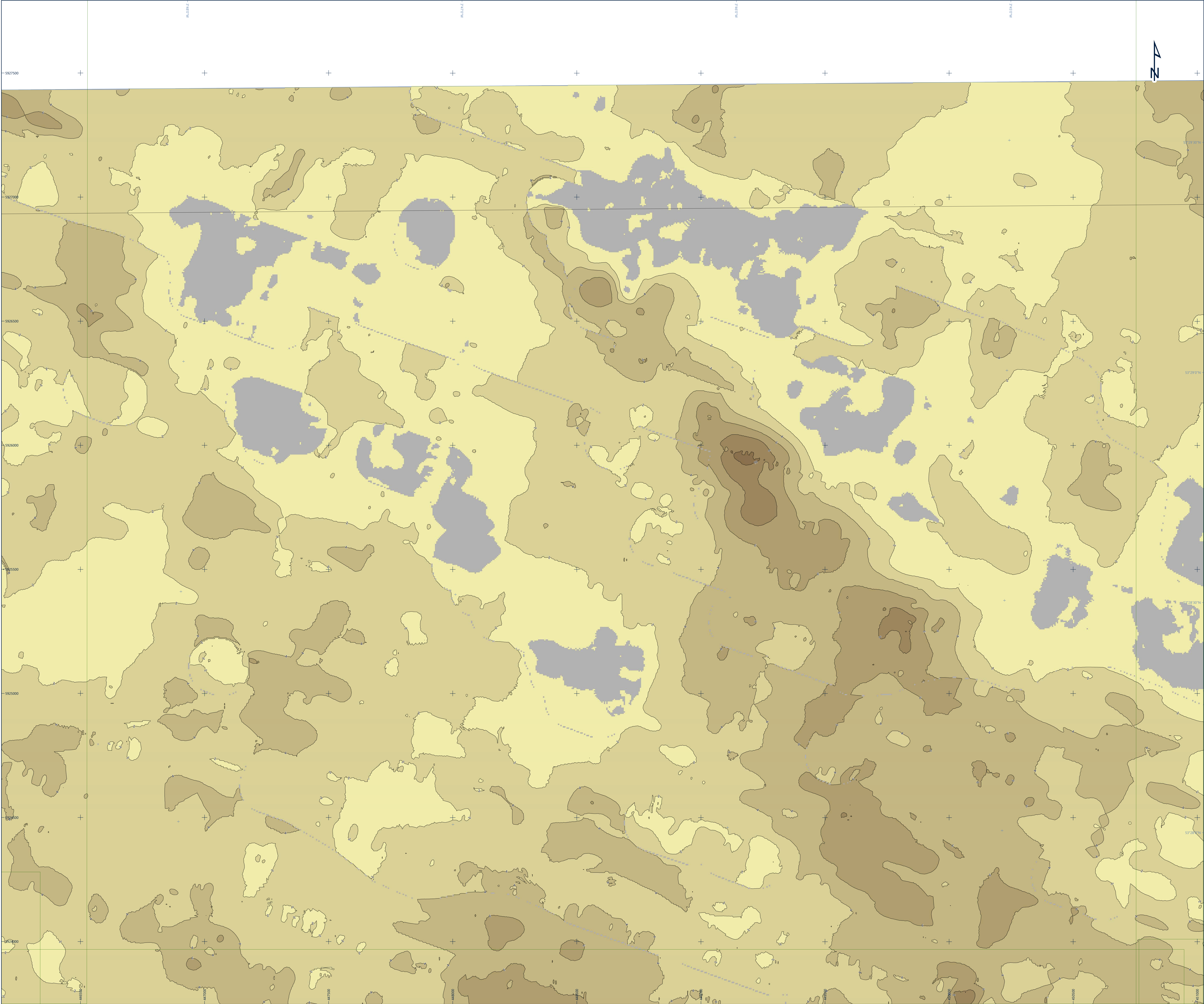


**R04 WEST IRISH SEA LOWER SEDIMENT
ISOCHORE (SBP AND UHRS) COMBINED**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_03		03 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness [m]

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

Sediment Isochore at 2 m Interval

Area of No Interpretation

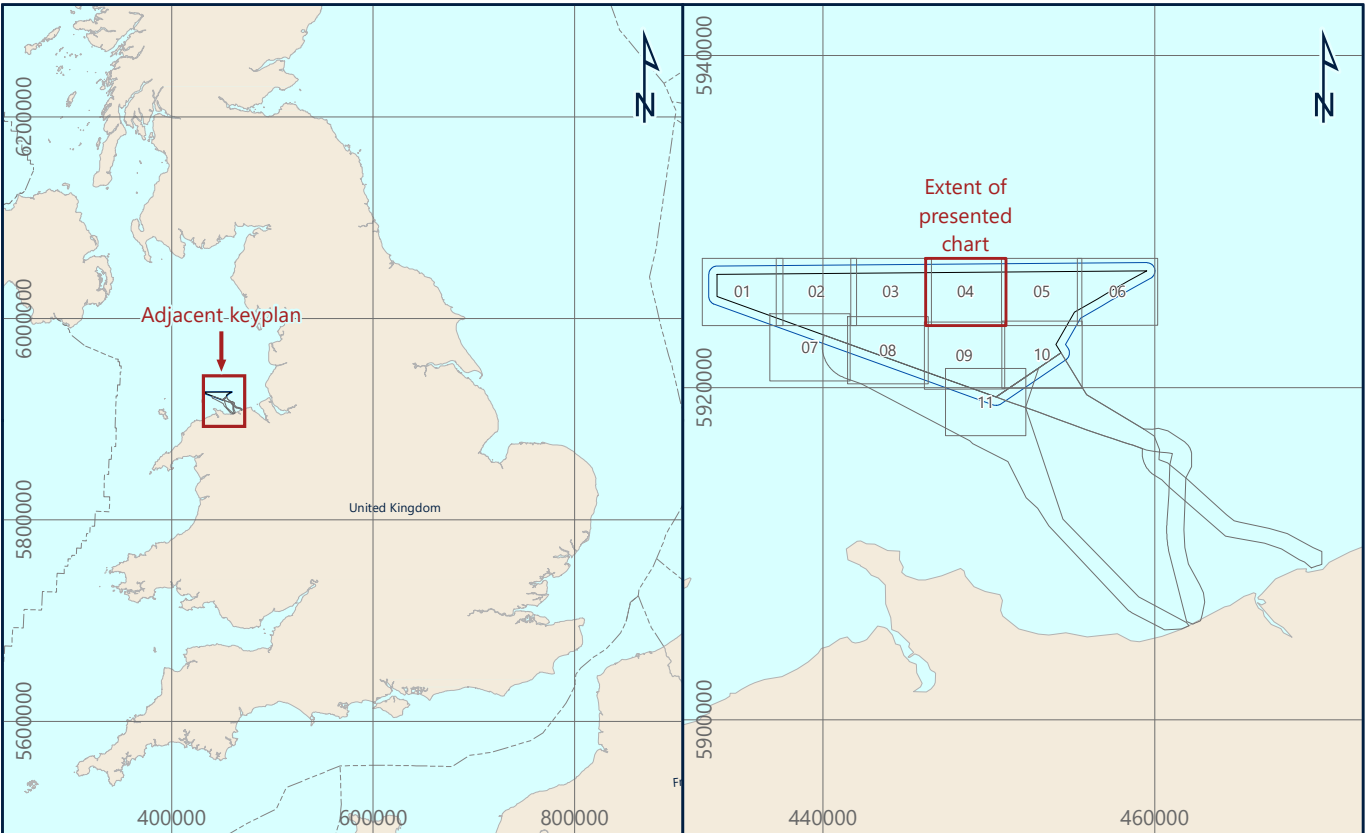
Notes

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- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
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- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984
Ellipsoid: WGS84
Semi-Major Axis: 6,378,137.000 m
Inverse Flattening: 298.257223563
Projection: WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM): 07°00'00" W
Latitude of Origin: 07°00'00" N
False Easting: 500,000 mE
False Northing: 0 mN
Scale Factor at CM: 0.9996
Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Way, Wernall Hill Business Park, Wernall Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro

Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Portchester PO14 4PX
Tel: +44 23 9220 3500

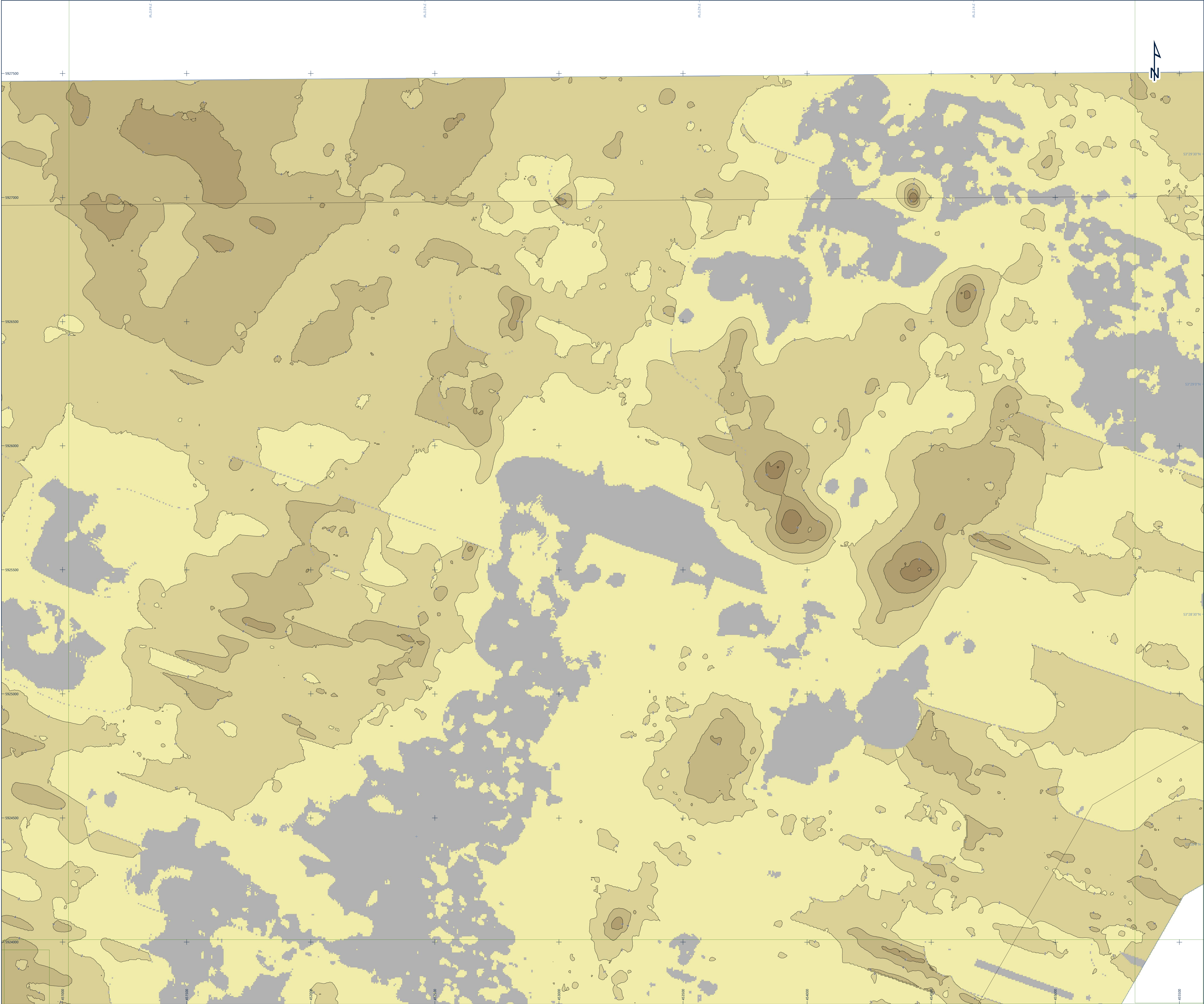


**R04 WEST IRISH SEA LOWER SEDIMENT
ISOCHORE (SBP AND UHRS) COMBINED**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No. 200655	Vessel(s) Fugro Mercator	Survey Date 10 June to 11 August 2020
File Name 200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_04	Chart No. 04 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

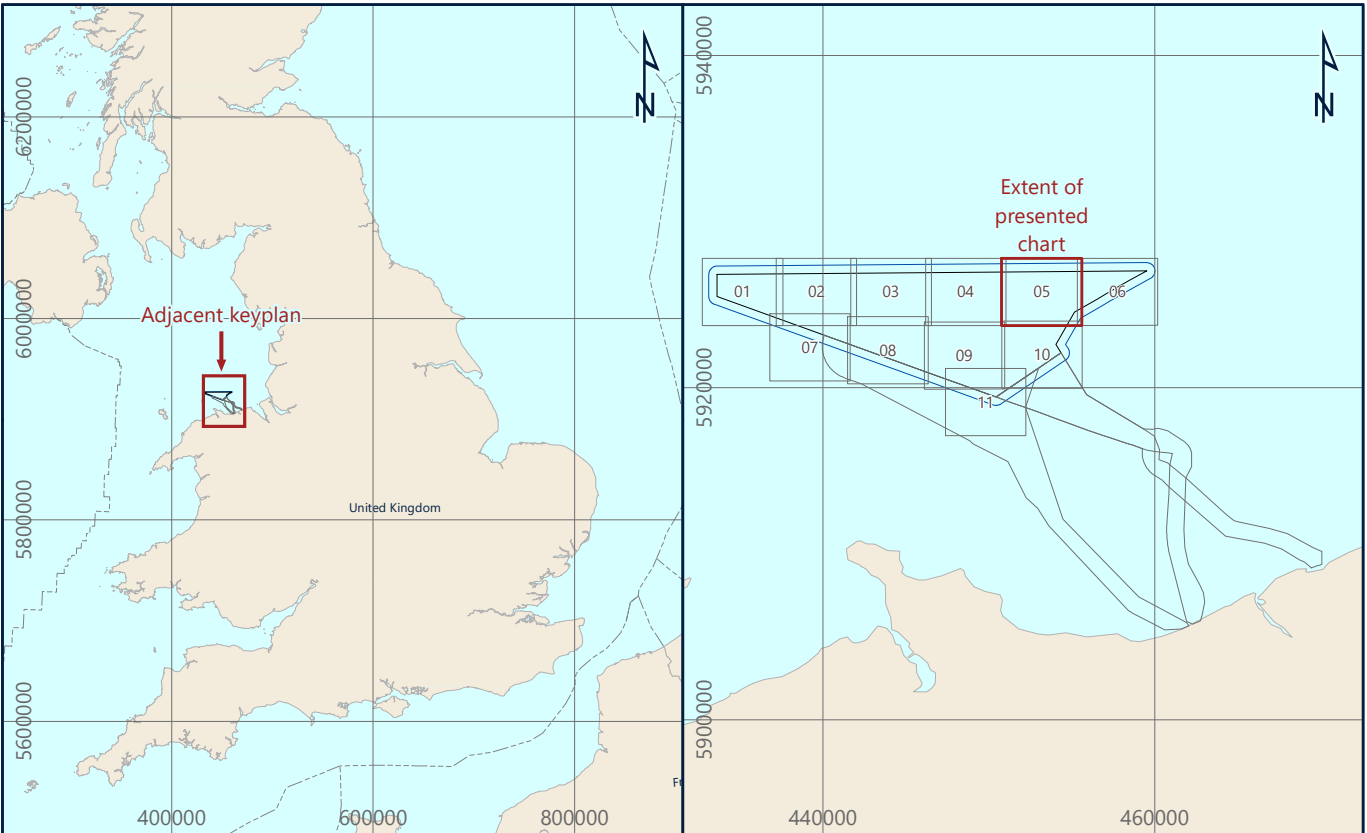
Notes

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- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.
- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257222563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregorwg Way, Wernand Hill Business Park, Wernand Way, Swansea, SW5 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregorwg Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3500

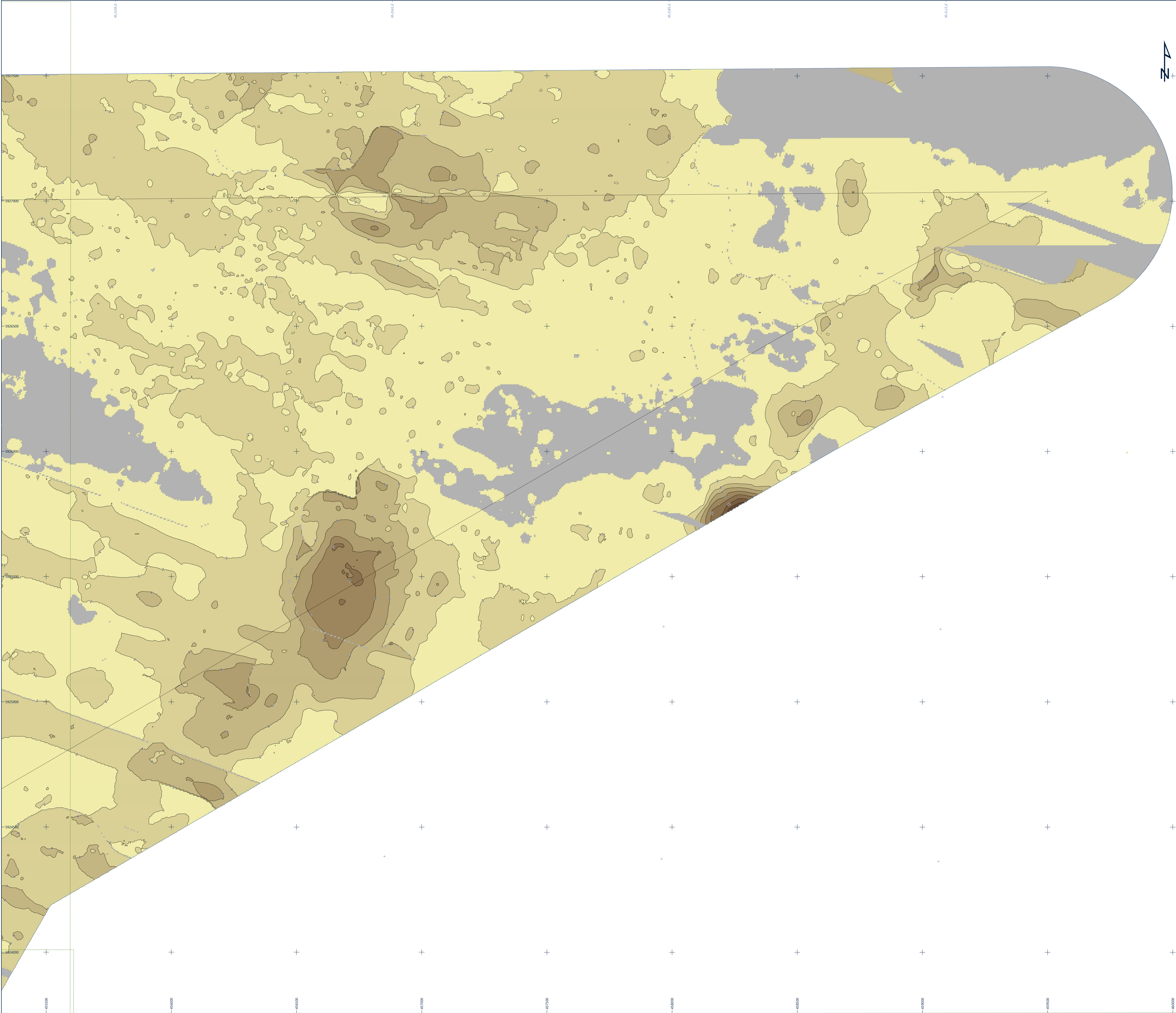


R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE (SBP AND UHRS) COMBINED
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_05		05 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness [m]

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

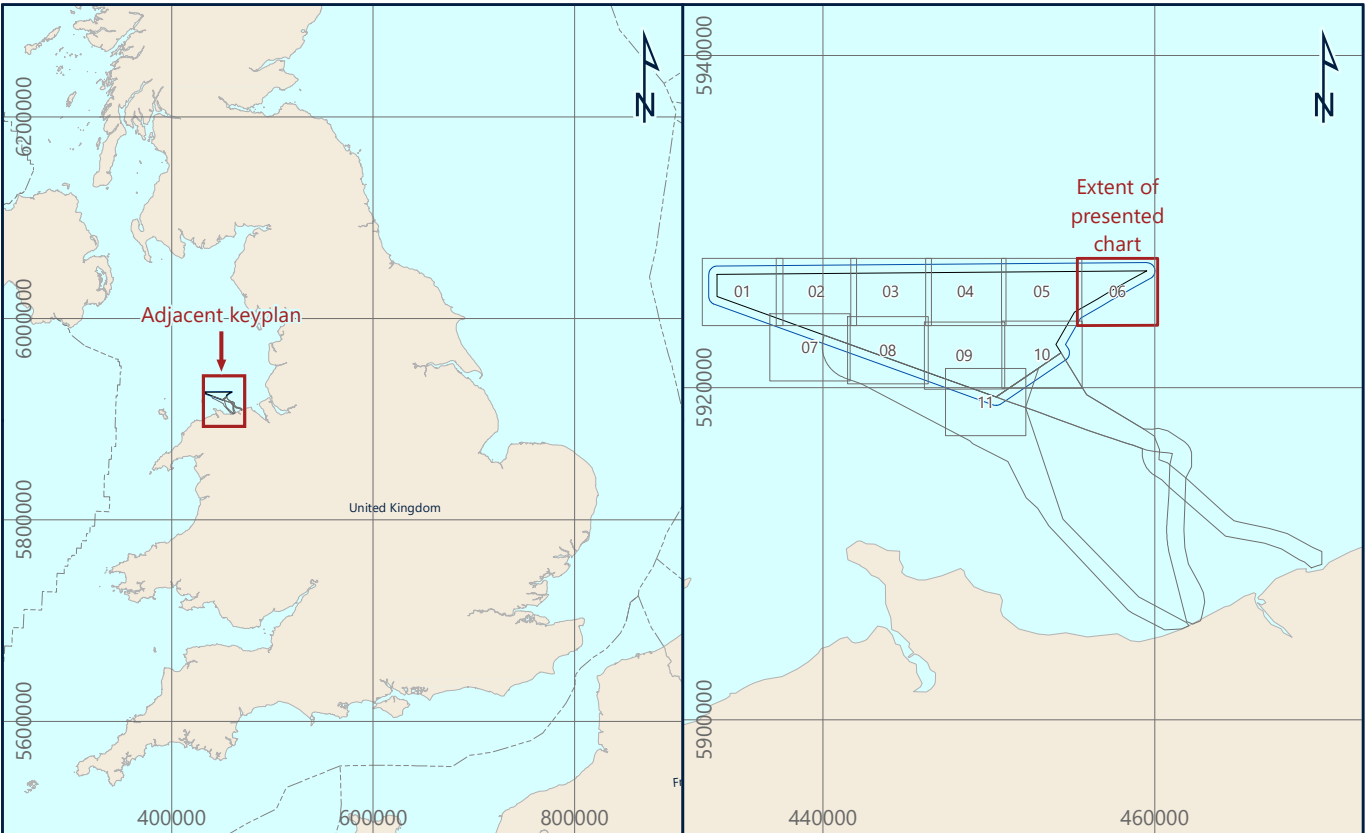
Notes

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- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



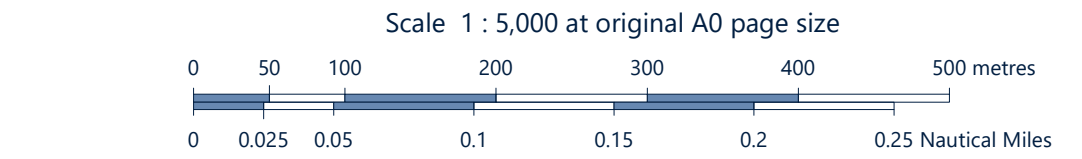
Awel Y Môr Offshore Wind Farm Ltd
Tighefnau Blyg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellehar Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

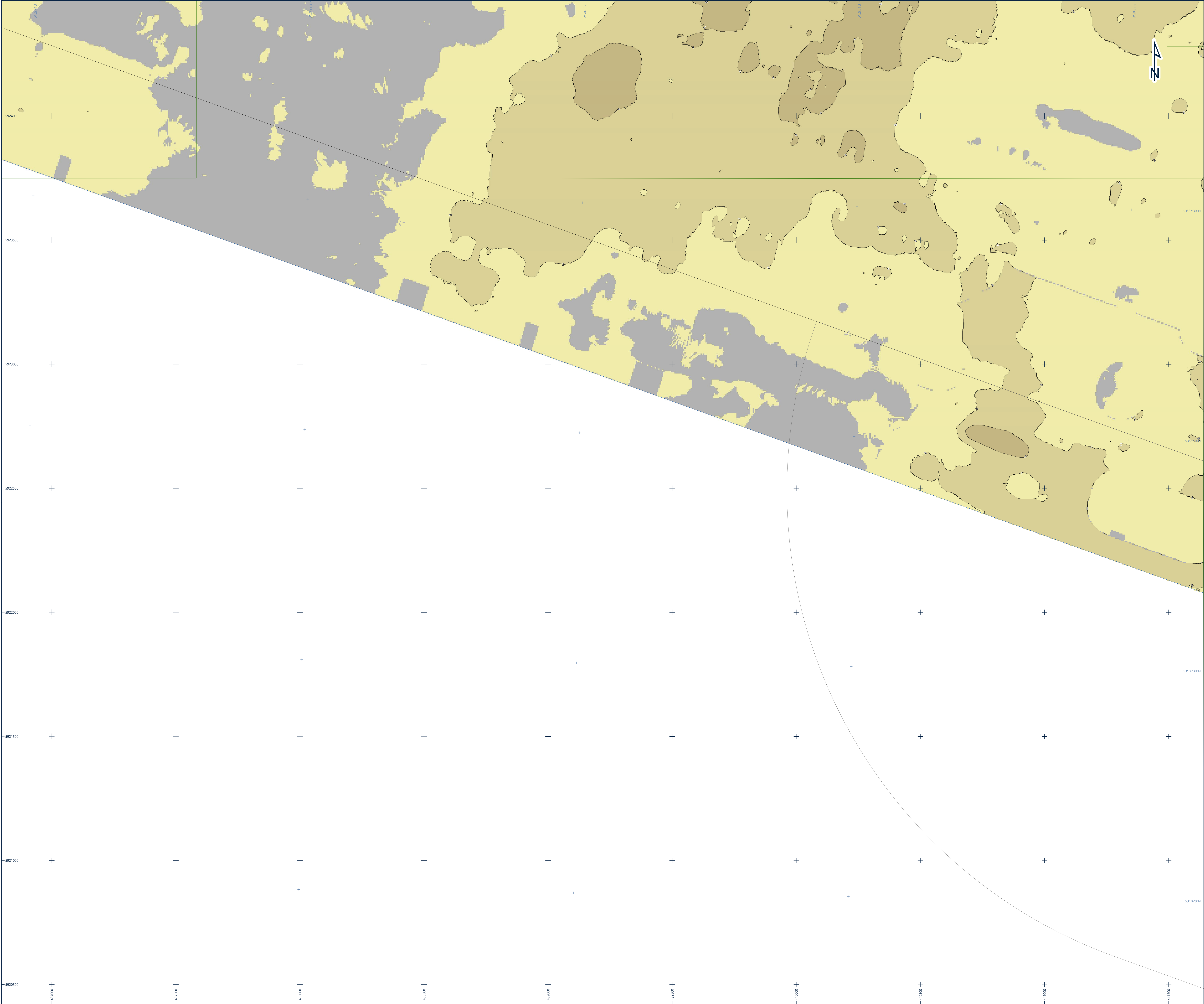
FUGRO

R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE (SBP AND UHRS) COMBINED
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_06	06 of 11	



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness [m]

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

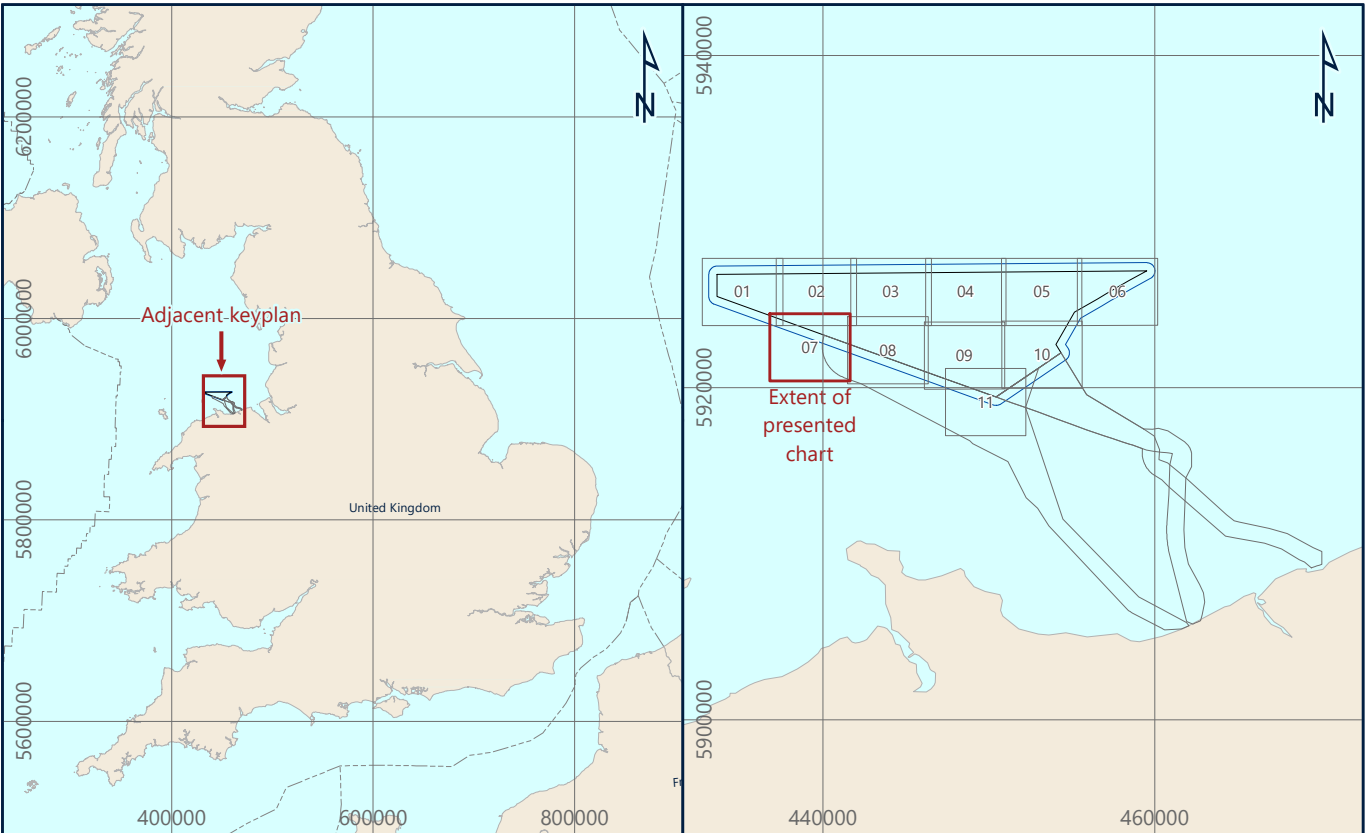
Notes

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- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

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Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257222563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnis Blyg, Windaed Hill Business Park, Windaed Way, Sarnol, SWS 9PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellehar Wharf Unit 161, Hamilton Road, Portchester PO16 4PX
Tel: +44 23 9220 5500

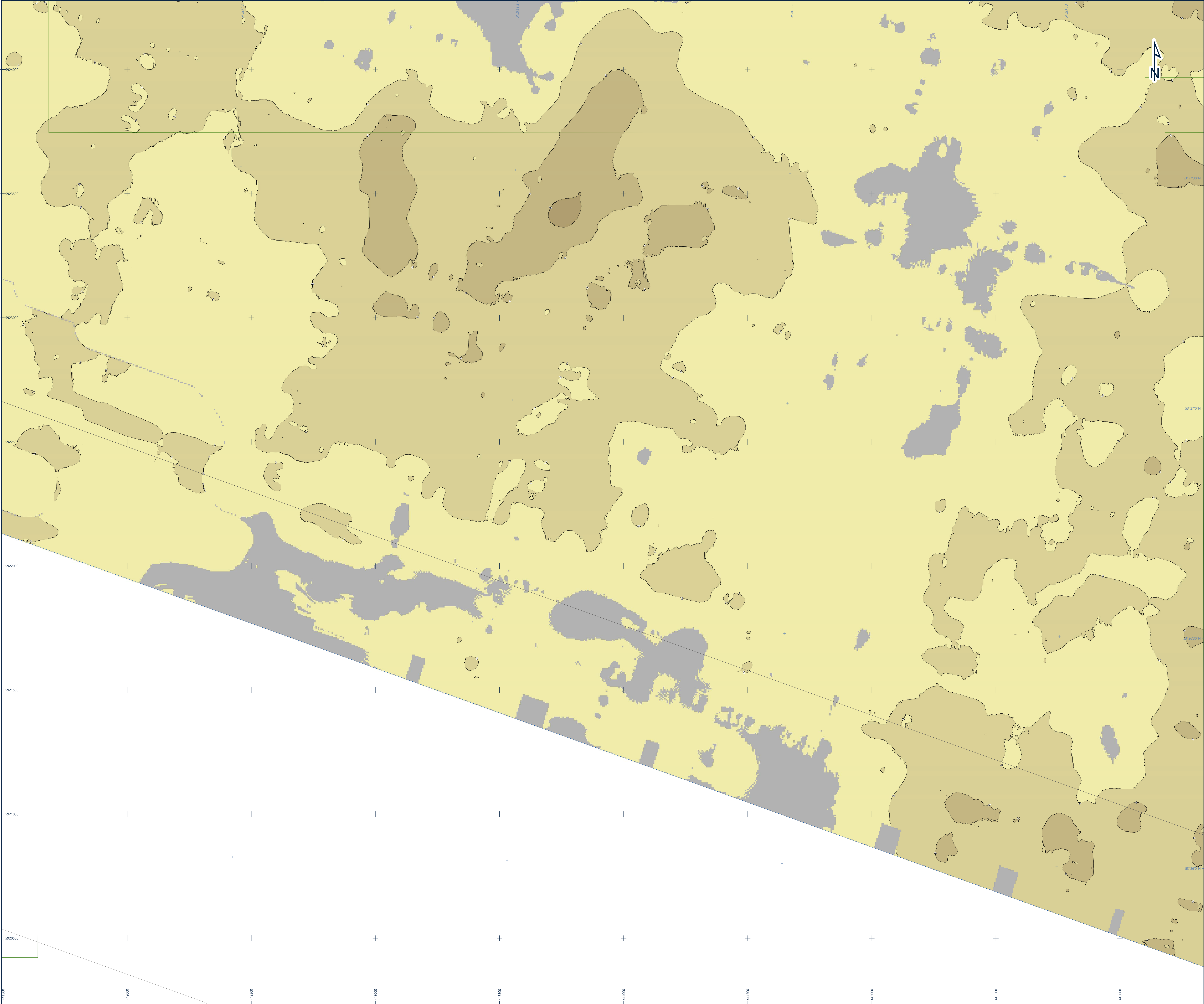
FUGRO

**R04 WEST IRISH SEA LOWER SEDIMENT
ISOCHORE (SBP AND UHRS) COMBINED**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA

Scale 1 : 5,000 at original A0 page size
0 50 100 200 300 400 500 metres
0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_07		07 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness [m]

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

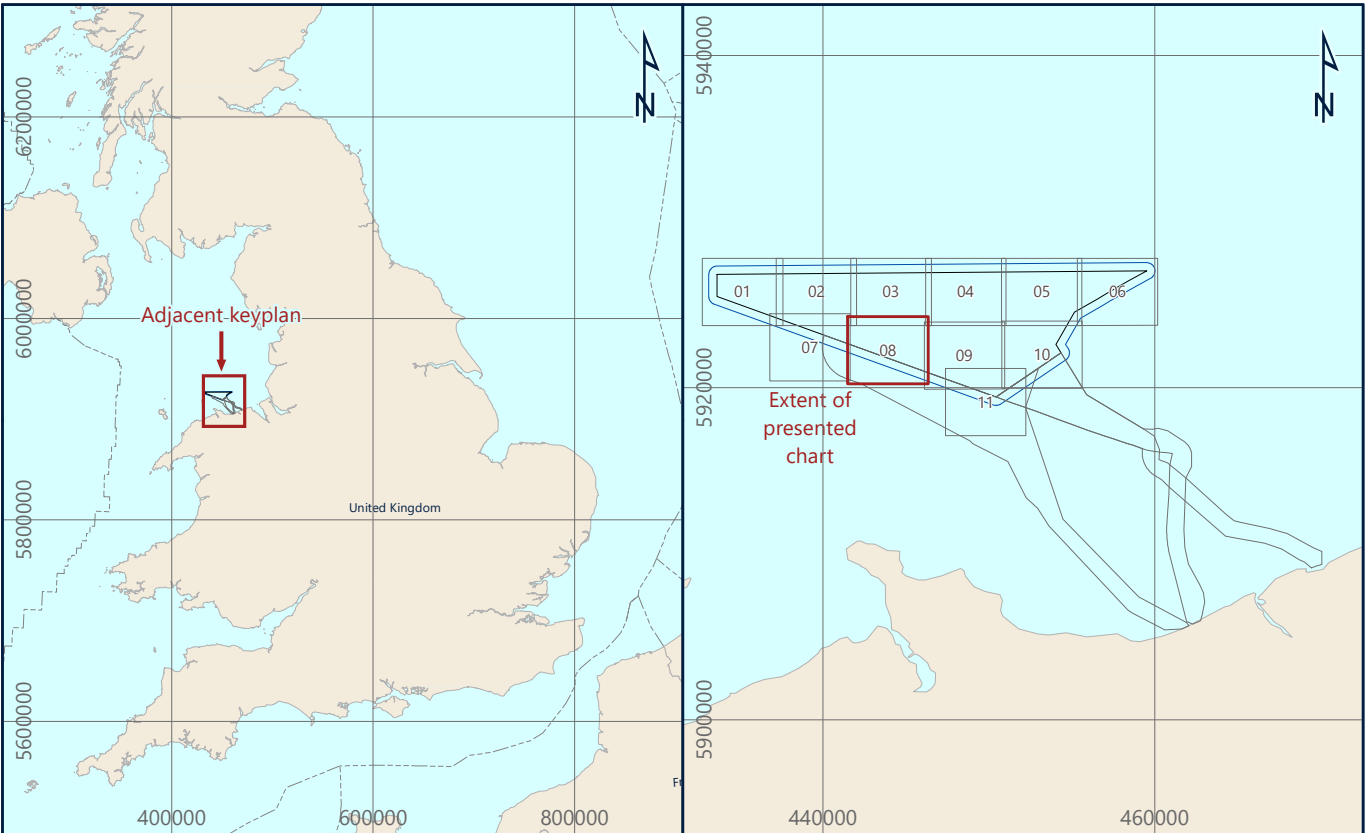
Notes

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- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257223563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	07°00'00" W
Latitude of Origin	07°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale Factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



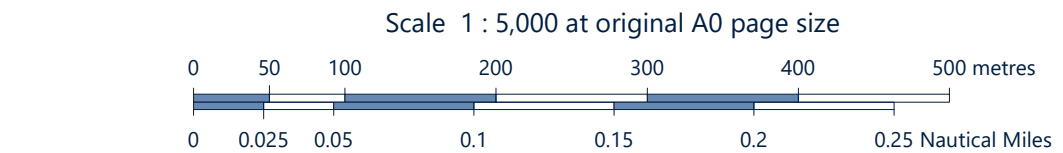
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernall Hill Business Park, Wernall Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregilar Wharf Unit 161, Hamilton Road, Portchester PO8 4PX
Tel: +44 23 9220 5500

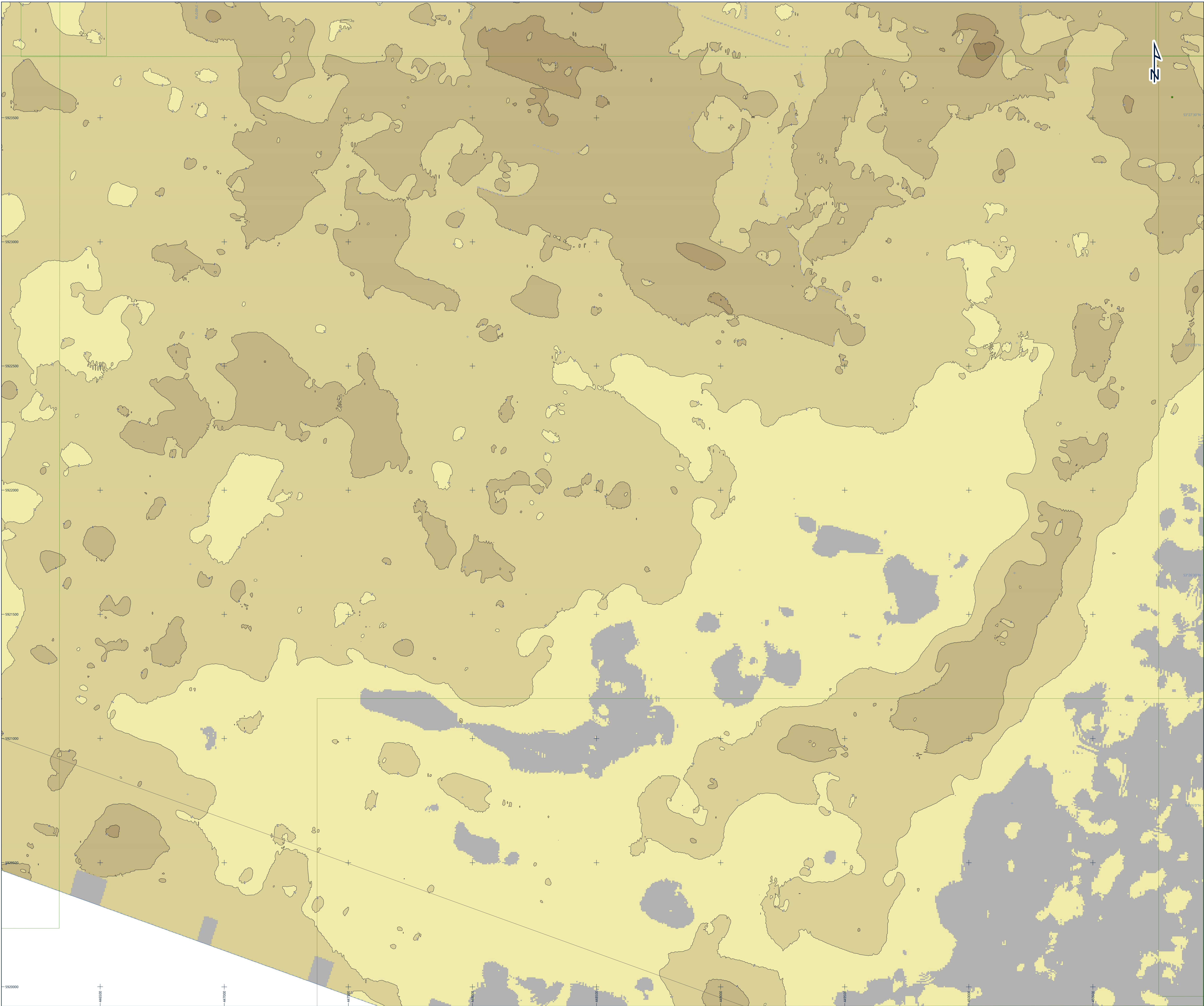
FUGRO

**R04 WEST IRISH SEA LOWER SEDIMENT
ISOCHORE (SBP AND UHRS) COMBINED**
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_08		08 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Exent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R04 Western Irish Sea Lower Sediment Isochore Thickness [m]**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - 10.1 - 12.0
 - 12.1 - 14.0
 - > 14.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Innonar Medium SES-2000 parametric sub-bottom profiler data.
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- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257223563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 07°00'00" W

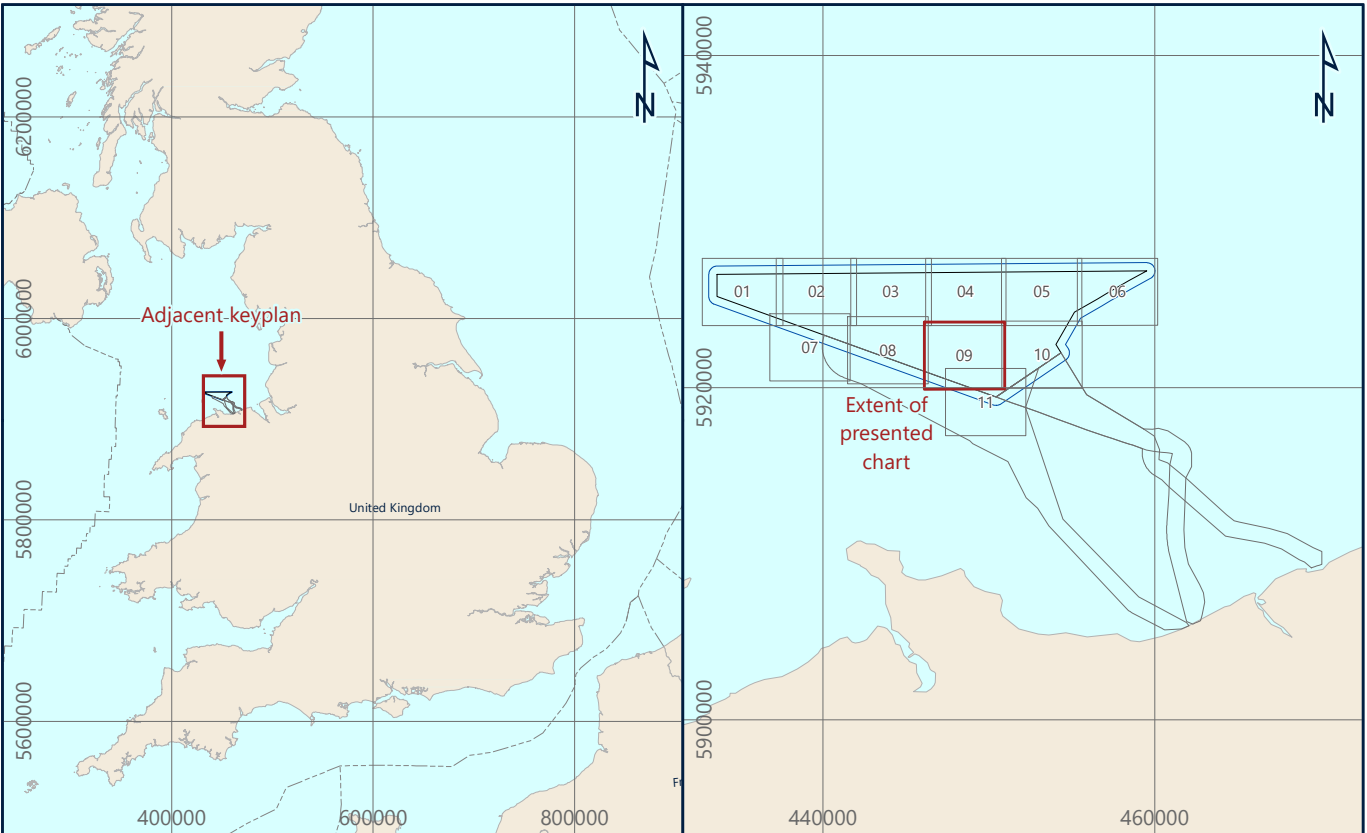
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swansea, SA5 8PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Tregear Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 3500

FUGRO

R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE (SBP AND UHRS) COMBINED AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

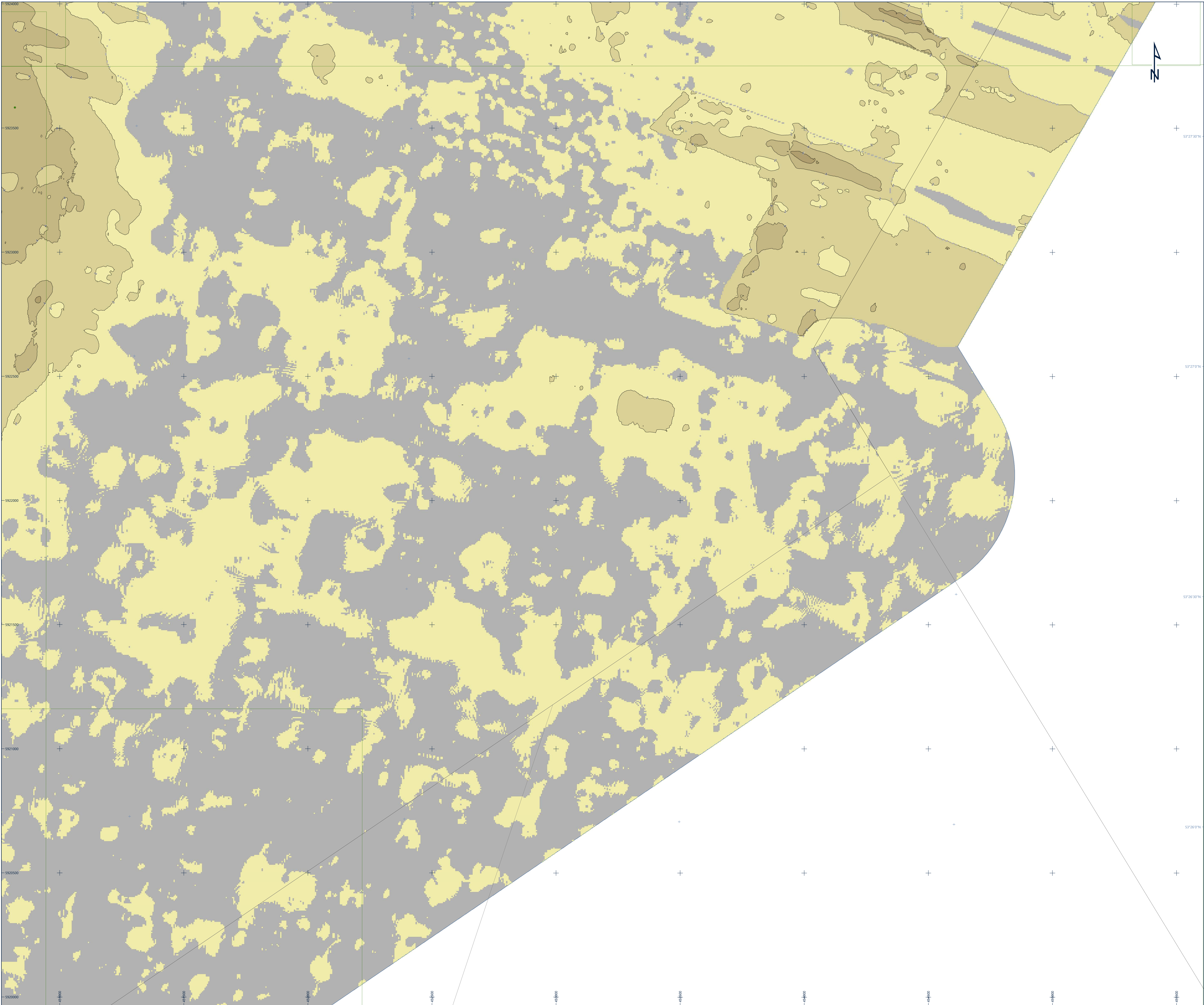
Scale 1 : 5,000 at original A0 page size

0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_09		09 of 11



Legend

- UTM Grid
 - Geographical Grid
 - Chart Extent
 - Windfarm Exent
 - Array Survey Extent
 - Export Cable Route Survey Extent
 - MetMast C Borehole
- R04 Western Irish Sea Lower Sediment Isochore Thickness (m)**
- ≤ 2.0
 - 2.1 - 4.0
 - 4.1 - 6.0
 - 6.1 - 8.0
 - 8.1 - 10.0
 - 10.1 - 12.0
 - 12.1 - 14.0
 - > 14.0
- Sediment Isochore at 2 m Interval
- Area of No Interpretation

Notes

- 1) Sub-bottom profiler interpretation was conducted using Inmar Medium SES-2000 parametric sub-bottom profiler data.
- 2) Grids have been derived from SBP data in conjunction with BGS sediment charts and client supplied geological background documentation (Innogy, 2019)
- 3) Isochores have been generated by subtracting the time to the top from the time to the base of each unit and have been depth converted using an ASV of 1600 m/s. All isochores have been gridded with a 5 m cell size.
- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum: World Geodetic System 1984

Ellipsoid: WGS84

Semi-Major Axis: 6,378,137.000 m

Inverse Flattening: 298.257222563

Projection: WGS84 / UTM Zone 30N (EPSG: 32630)

Central Meridian (CM): 03°00'00" W

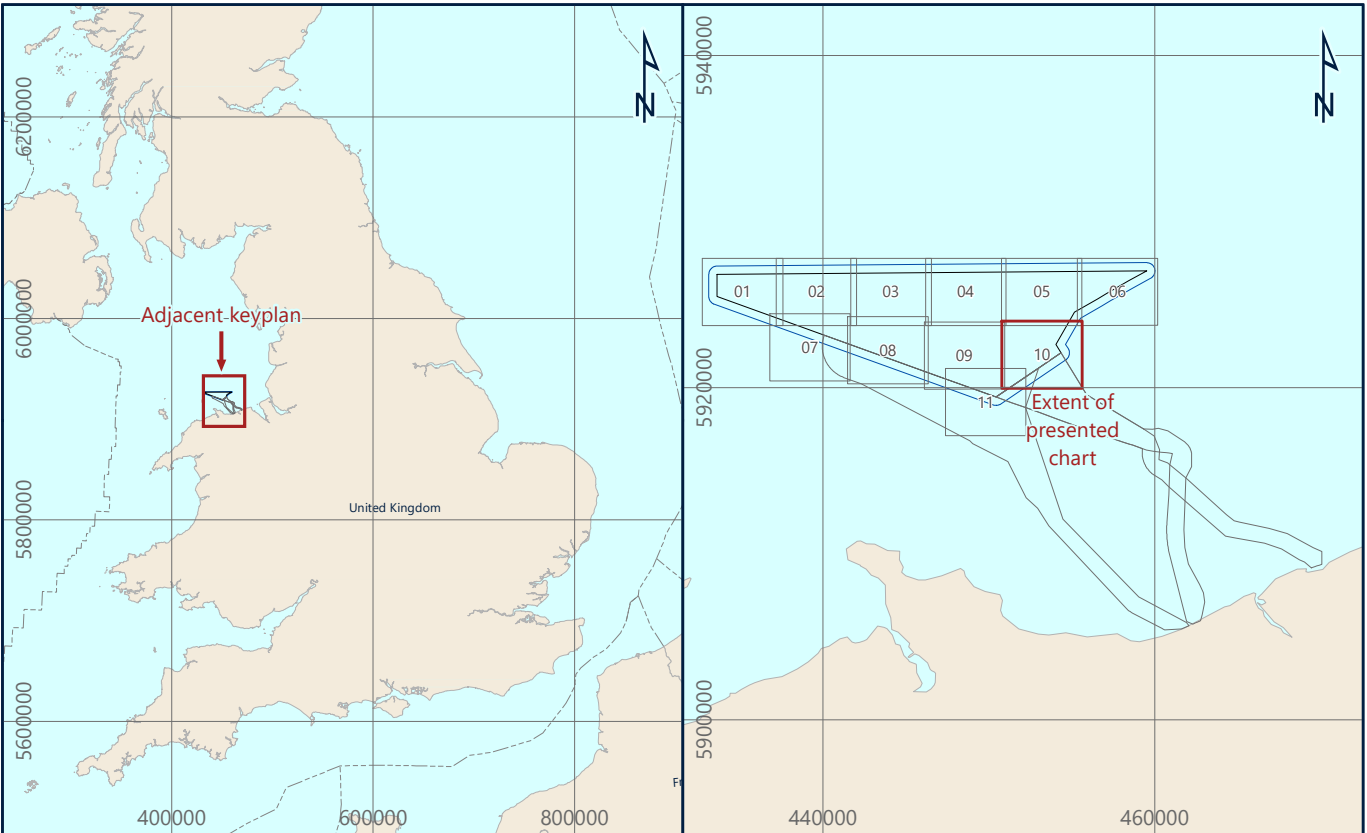
Latitude of Origin: 07°00'00" N

Fake Easting: 500,000 mE

Fake Northing: 0 mN

Scale factor at CM: 0.9996

Vertical datum: Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



Awel Y Môr Offshore Wind Farm Ltd
Tighefnis Blyg, Wernall Hill Business Park, Wernall Way, Salford, S16 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellicker Wharf Unit 161, Hamilton Road, Portsmouth PO6 4PX
Tel: +44 23 9220 5500

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R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE (SBP AND UHRS) COMBINED AWEL Y MÔR OFFSHORE WIND FARM GEOPHYSICAL SURVEY 2020 UK IRISH SEA

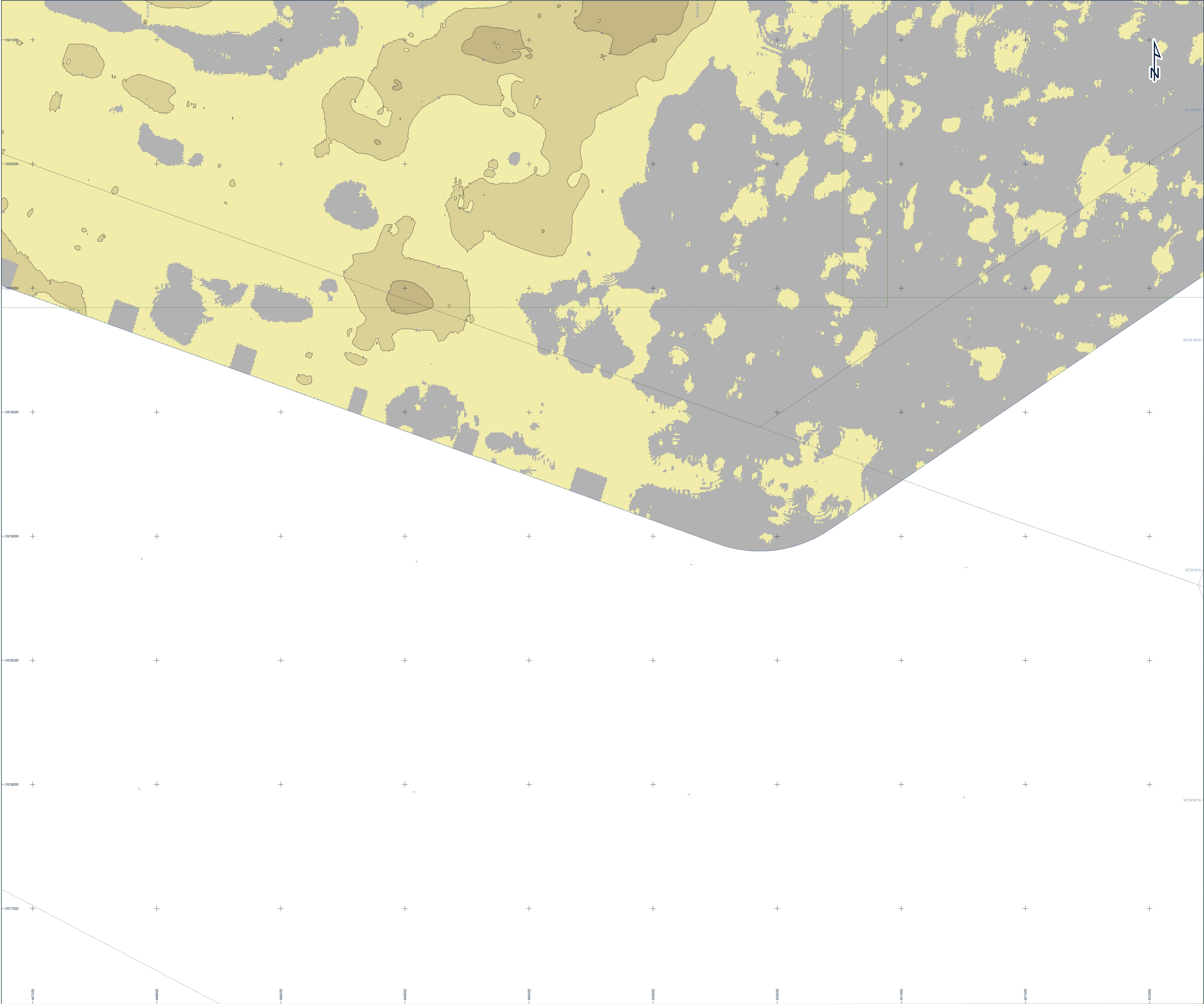
Scale 1 : 5,000 at original A0 page size

0 50 100 200 300 400 500 metres

0 0.025 0.05 0.1 0.15 0.2 0.25 Nautical Miles

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03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_10		10 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness [m]

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

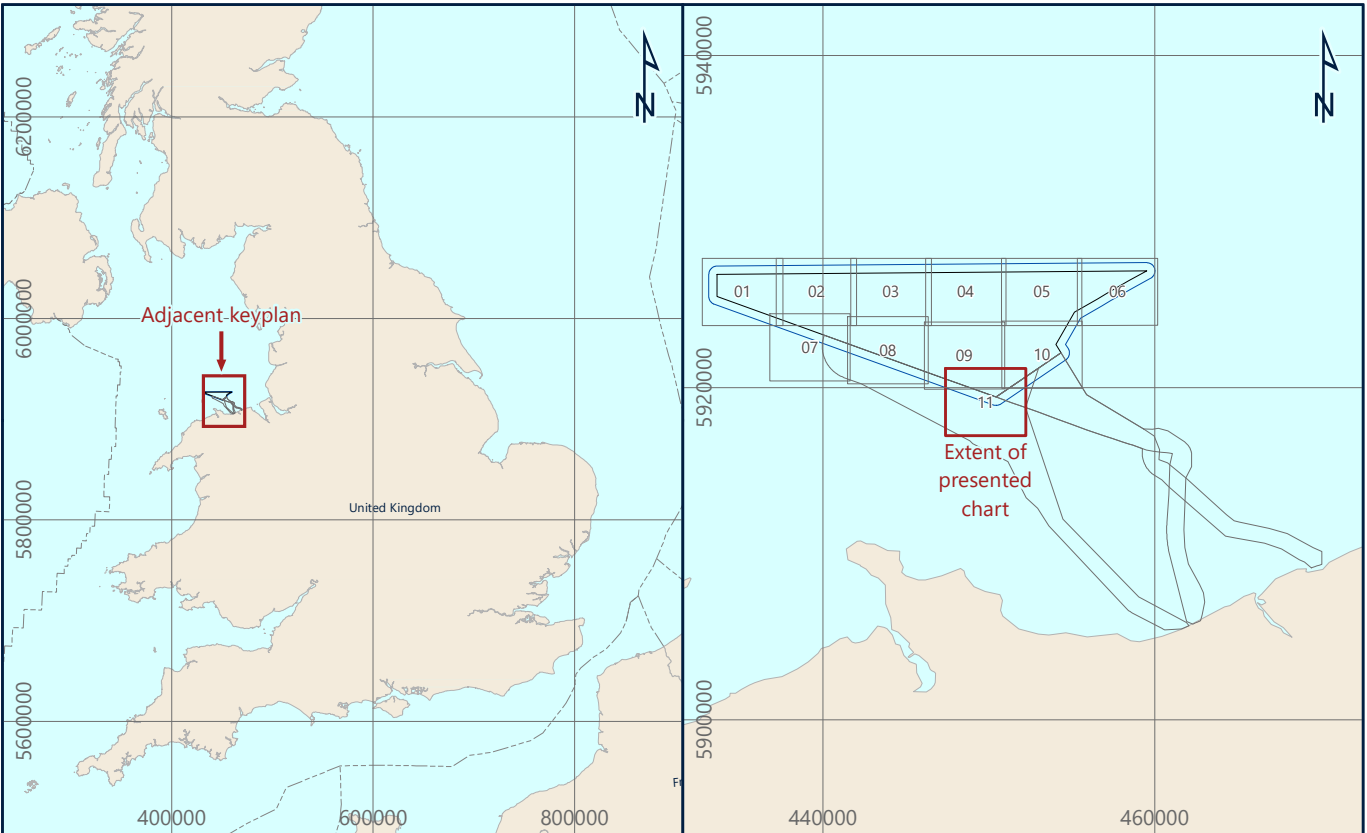
Notes

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- 4) Combined interpretation from SBP and UHRS data.

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Geodetic Parameters

Geodetic datum	World Geodetic System 1984
Ellipsoid	WGS84
Semi-Major Axis	6,378,137.000 m
Inverse Flattening	298.257222563
Projection	WGS84 / UTM Zone 30N (EPSG: 32630)
Central Meridian (CM)	03°00'00" W
Latitude of Origin	00°00'00" N
Fake Easting	500,000 mE
Fake Northing	0 mN
Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



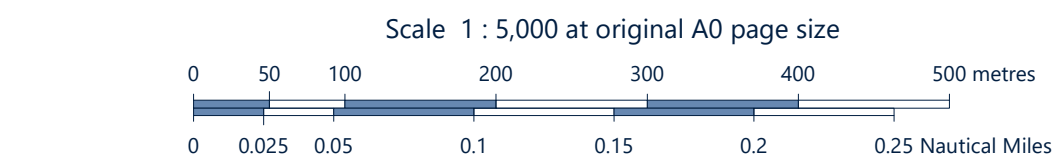
Awel Y Môr Offshore Wind Farm Ltd
Tregaron Bldg, Wernand Hill Business Park, Wernand Way, Swansea, SW5 6PE, United Kingdom

AWEL Y MŌR

Fugro
Victory House, Tregolar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 5500

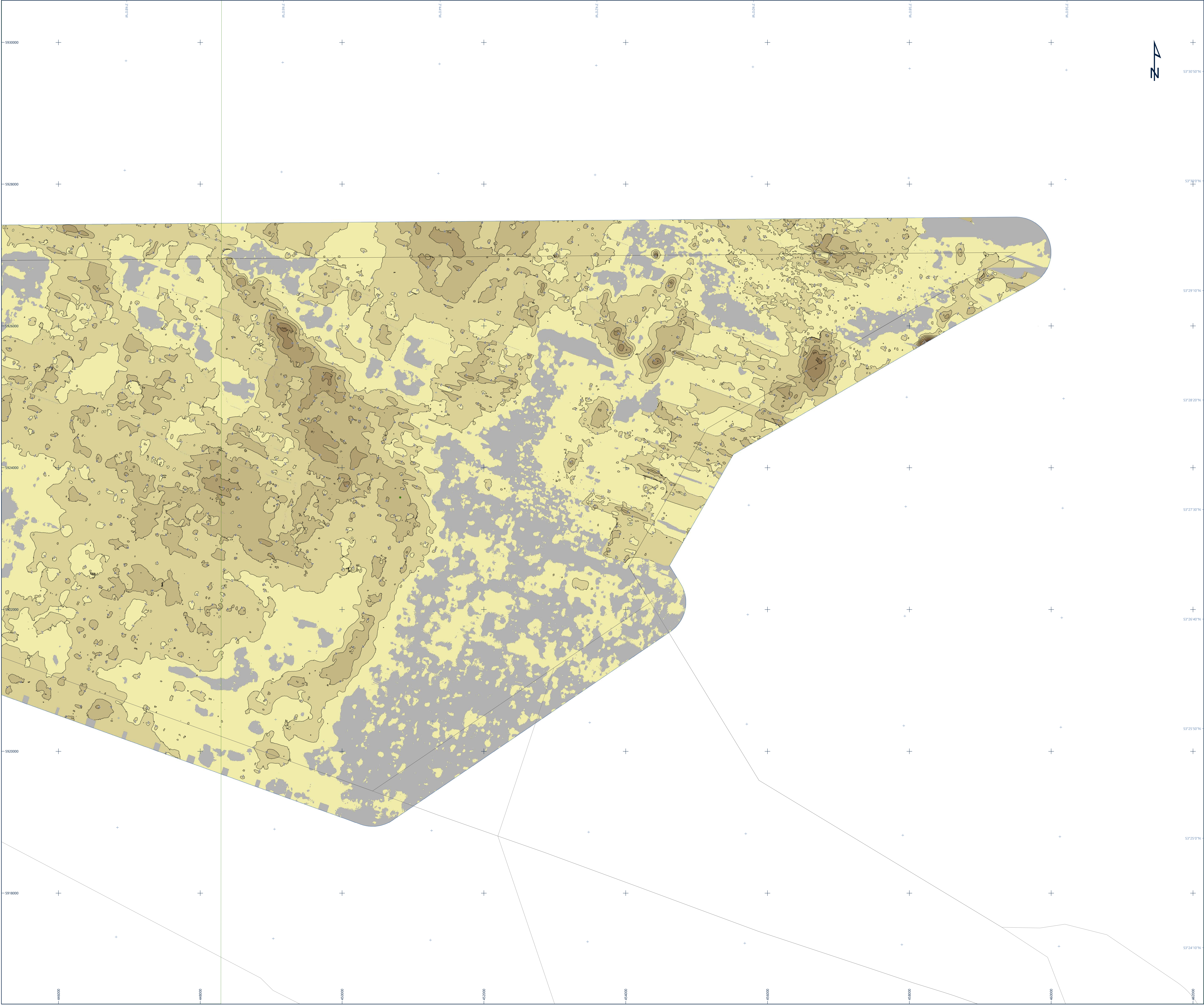
FUGRO

R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE (SBP AND UHRS) COMBINED
AWEL Y MŌR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



Issue	Date	Status	Interpreted	Prepared	Checked	Approved
01	07 October 2020	Draft Issue - Revision 1	OOT	DS	SB	BPT
02	01 December 2020	Final Issue - Revision 2	OOT	DS	SB	BPT
03	04 February 2021	Final Release - Revision 3	OOT	DS	SB	BPT
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name		Chart No.
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_11		11 of 11



Legend

- UTM Grid
- Geographical Grid
- Chart Extent
- Windfarm Extent
- Array Survey Extent
- Export Cable Route Survey Extent
- MetMast C Borehole

R04 Western Irish Sea Lower Sediment Isochore Thickness (m)

- ≤ 2.0
- 2.1 - 4.0
- 4.1 - 6.0
- 6.1 - 8.0
- 8.1 - 10.0
- 10.1 - 12.0
- 12.1 - 14.0
- > 14.0

- Sediment Isochore at 2 m Interval
- Area of No Interpretation

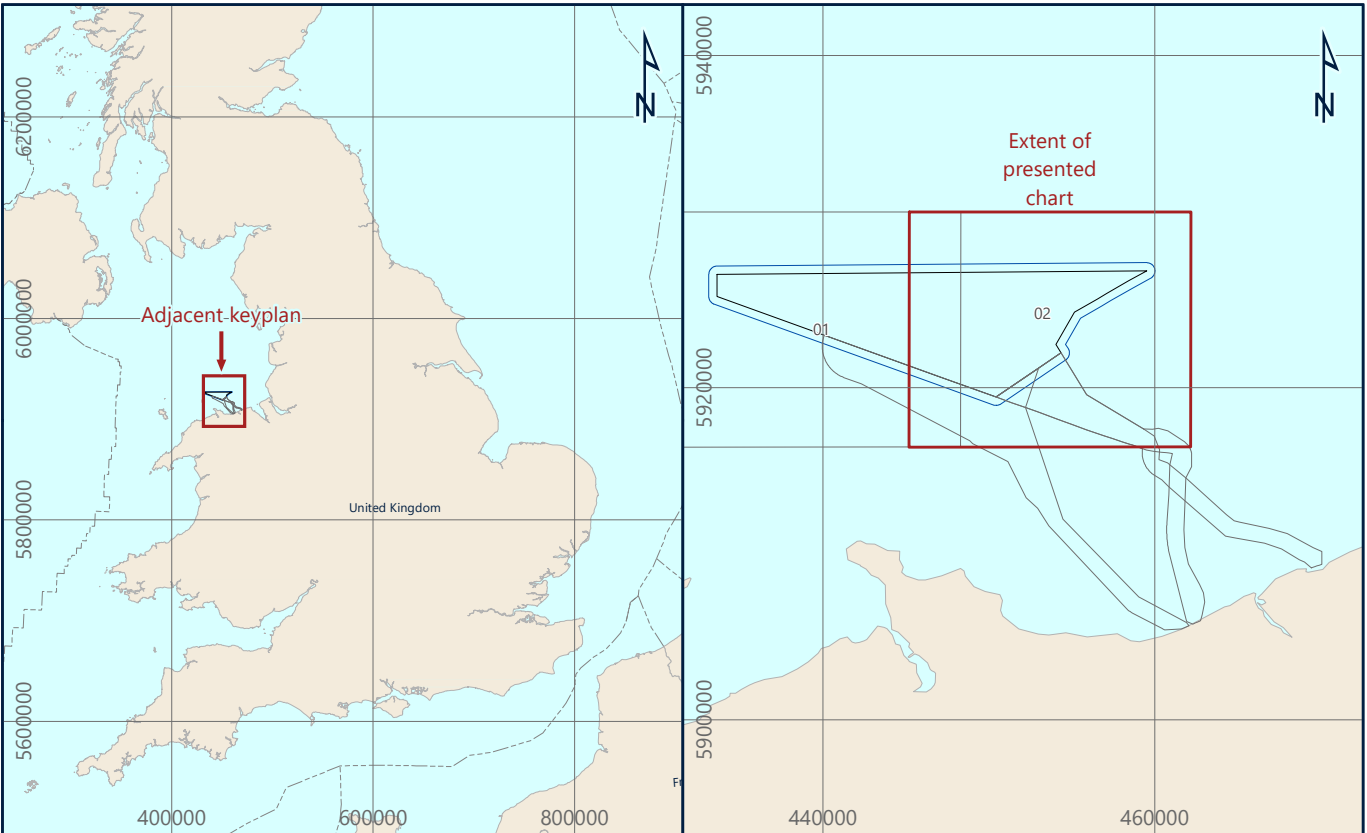
Notes

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Scale factor at CM	0.9996
Vertical datum	Lowest Astronomical Tide (LAT) - calculated using the Vertical Offshore Reference Frame (VORF)



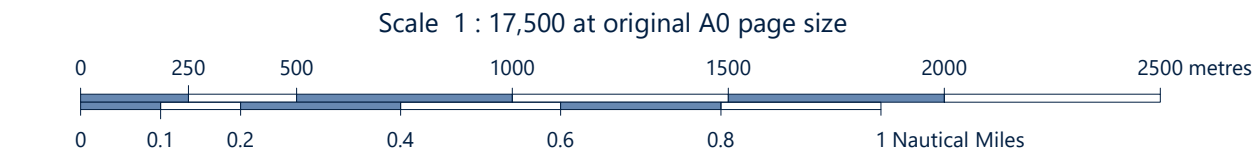
Awel Y Môr Offshore Wind Farm Ltd
Tigwrys Blyg, Wernall Hill Business Park, Wernall Way, Swanton, SWS 6PE, United Kingdom

AWEL Y MÔR

Fugro
Victory House, Trellehar Wharf Unit 161, Hamilton Road, Porchester PO6 4PX
Tel: +44 23 9220 5500

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R04 WEST IRISH SEA LOWER SEDIMENT ISOCHORE (COMBINED SBP AND UHRS) OVERVIEW
AWEL Y MÔR OFFSHORE WIND FARM
GEOPHYSICAL SURVEY 2020
UK IRISH SEA



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01	01 December 2020	Final Issue - Revision 1	OOT	DS	SB	BPT
02	04 February 2021	Final Relissue - Revision 2	OOT	DS	SB	BPT
-	-	-	-	-	-	-
-	-	-	-	-	-	-

Fugro Project No.	Vessel(s)	Survey Date
200655	Fugro Mercator	10 June to 11 August 2020
File Name	Chart No.	
200655_Array_R04_WIS_Lower_SedimentIsochore_Combined_Overview_02	02 of 02	



RWE Renewables UK
Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon