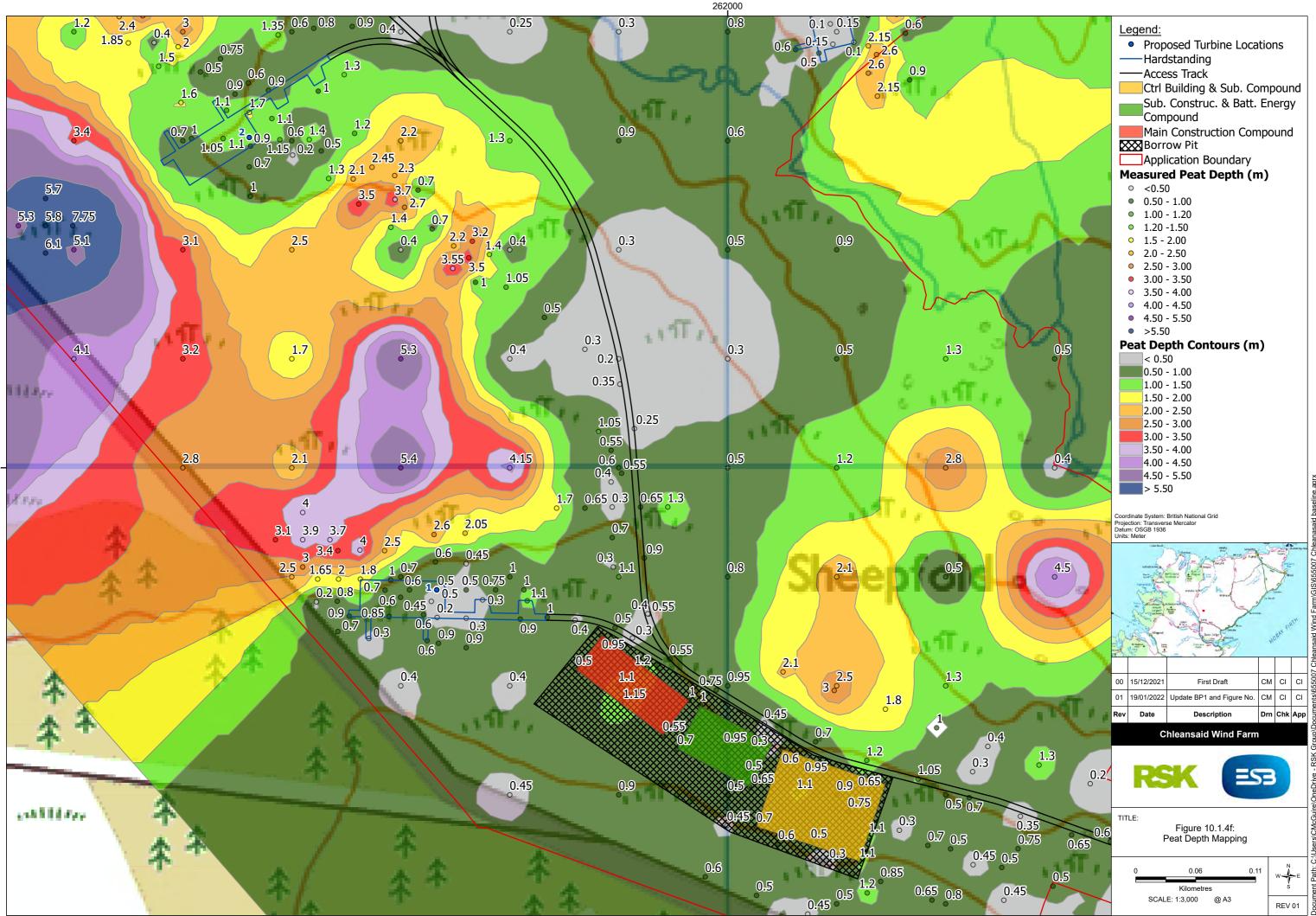
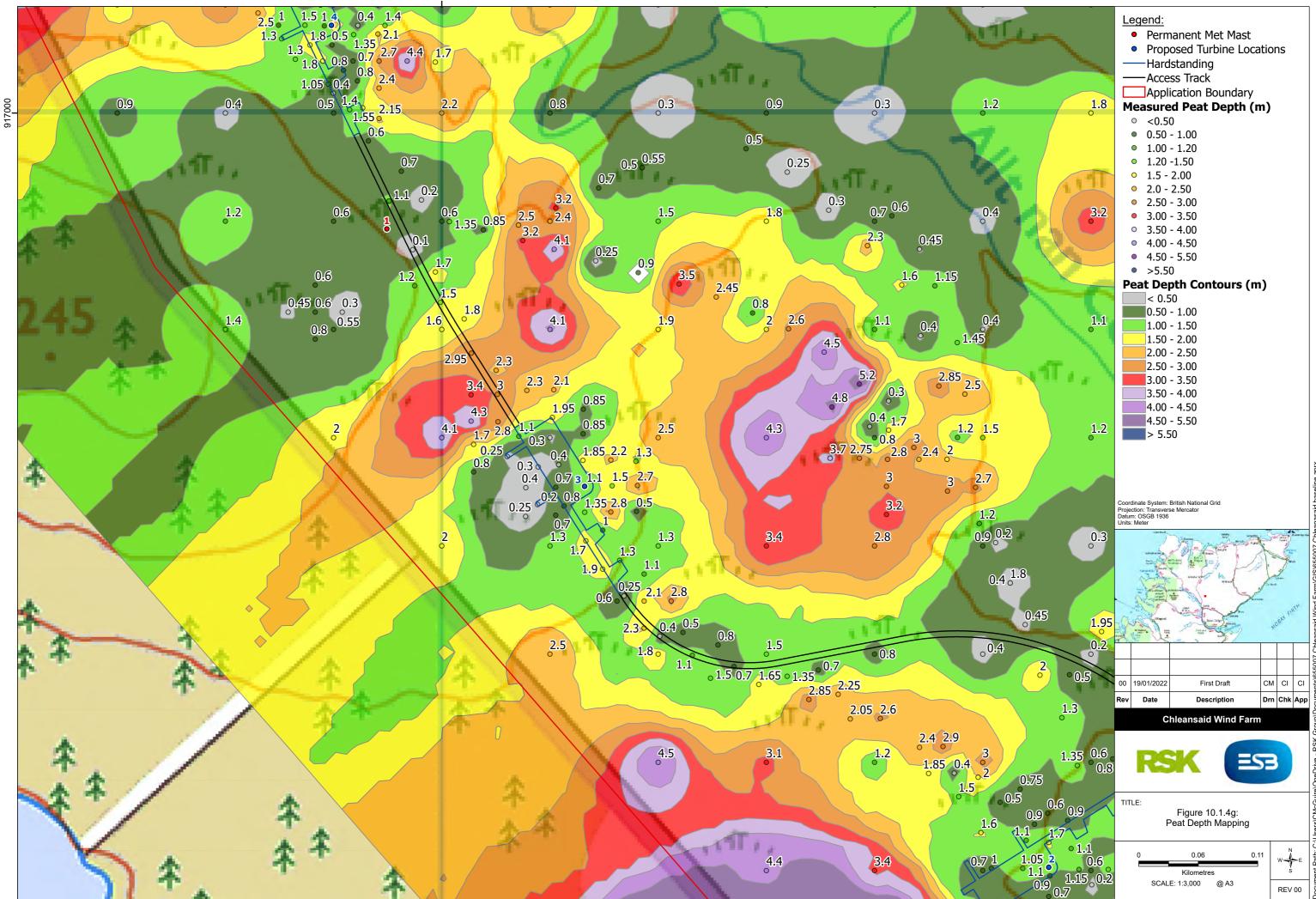
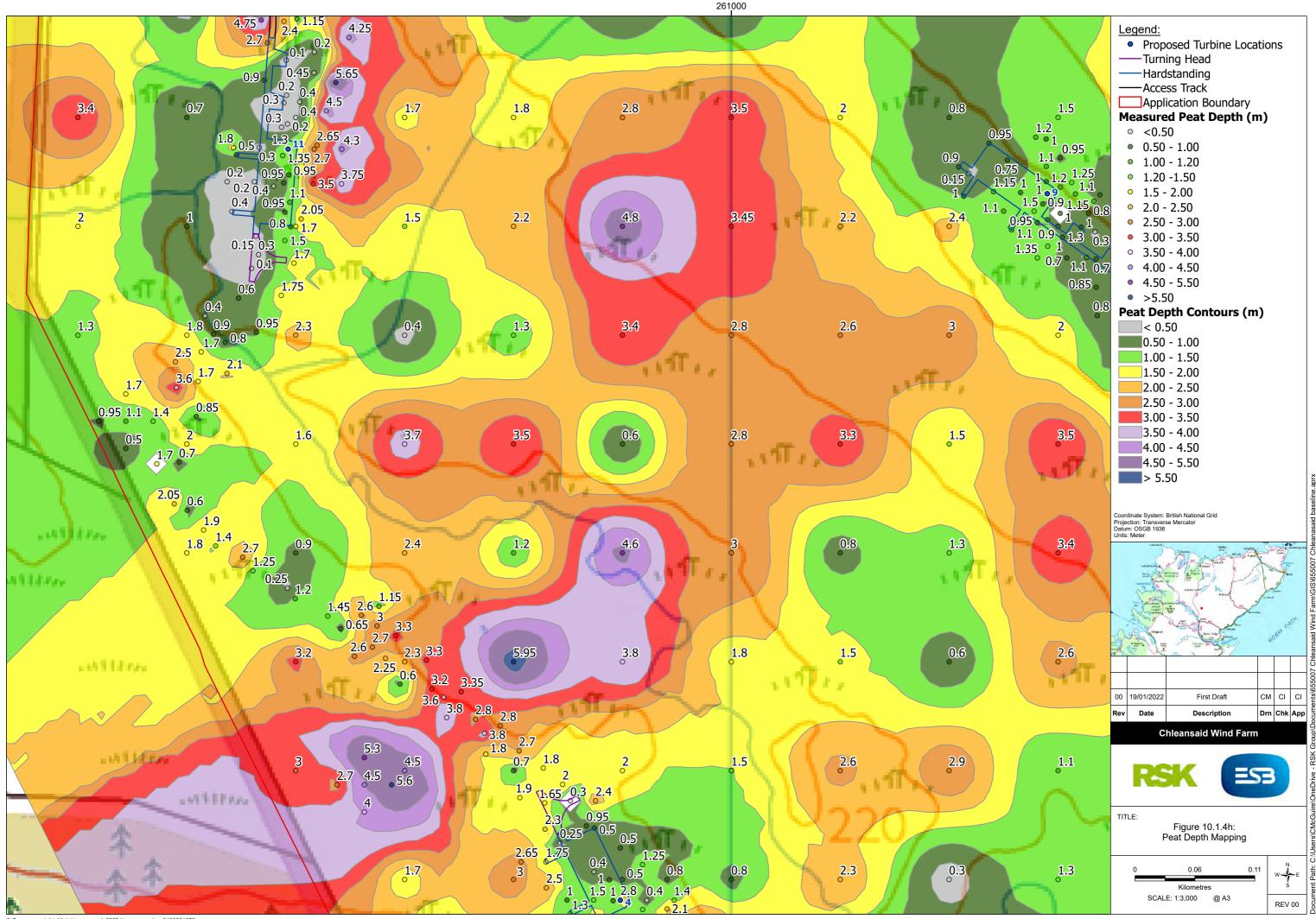
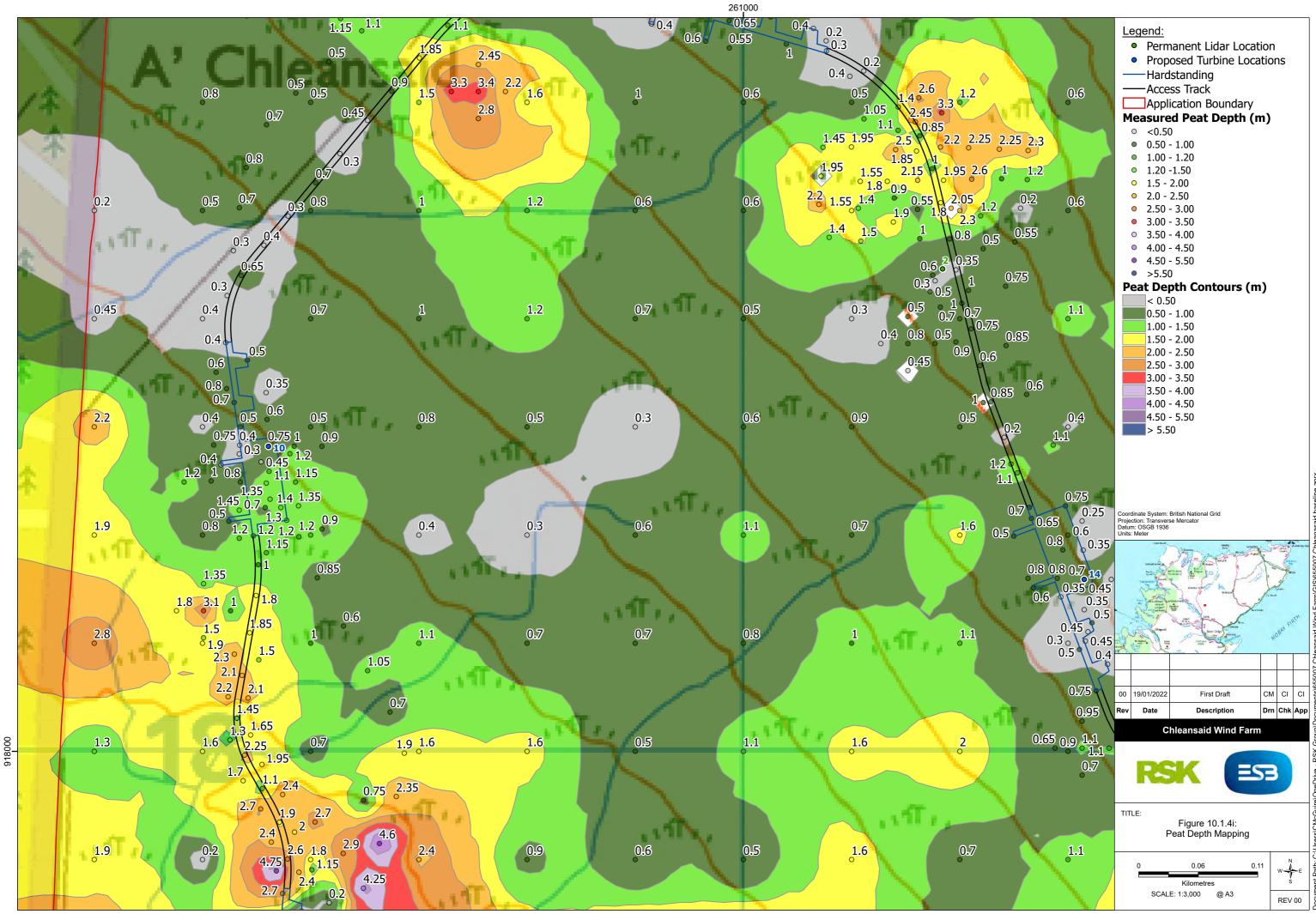


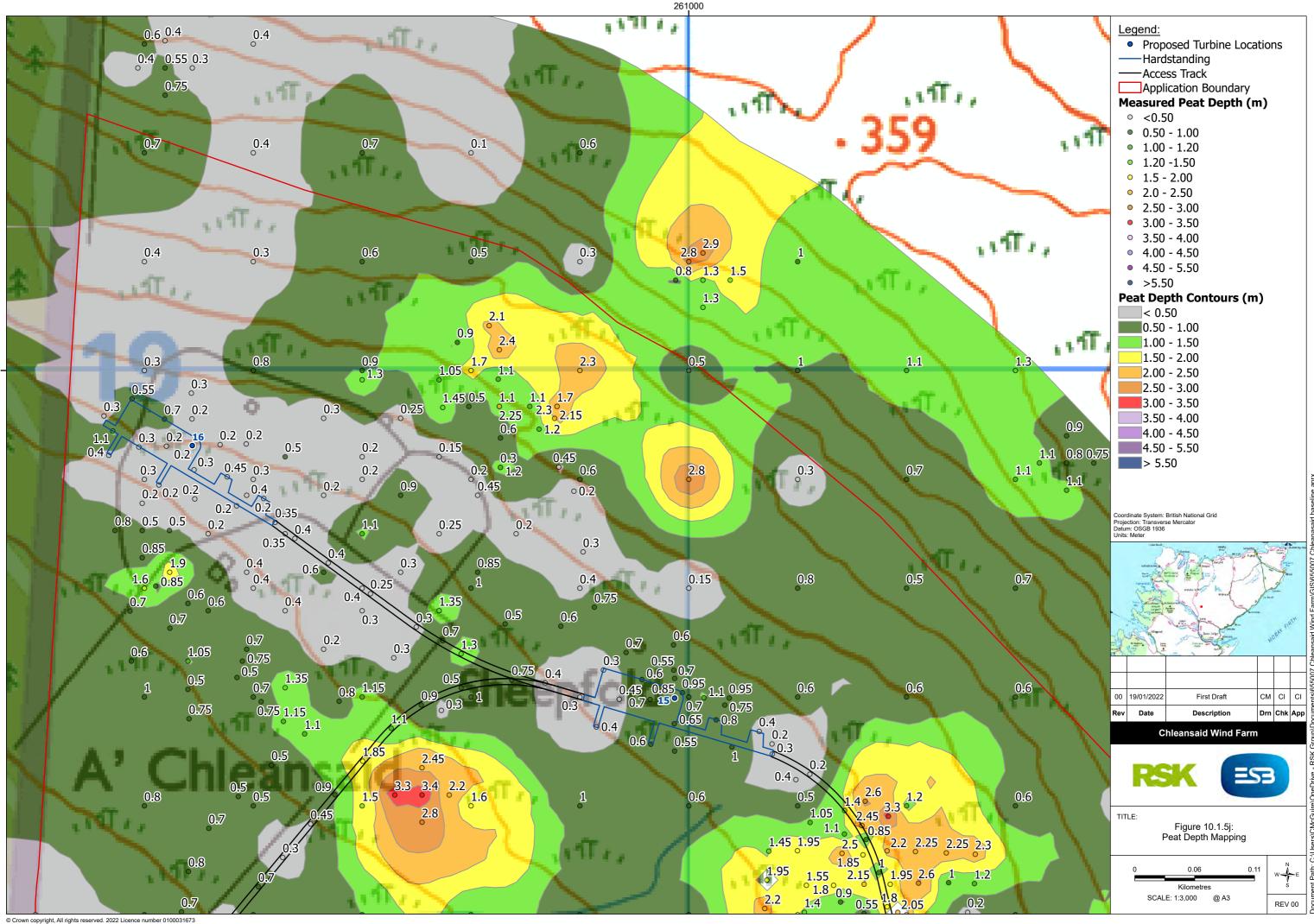
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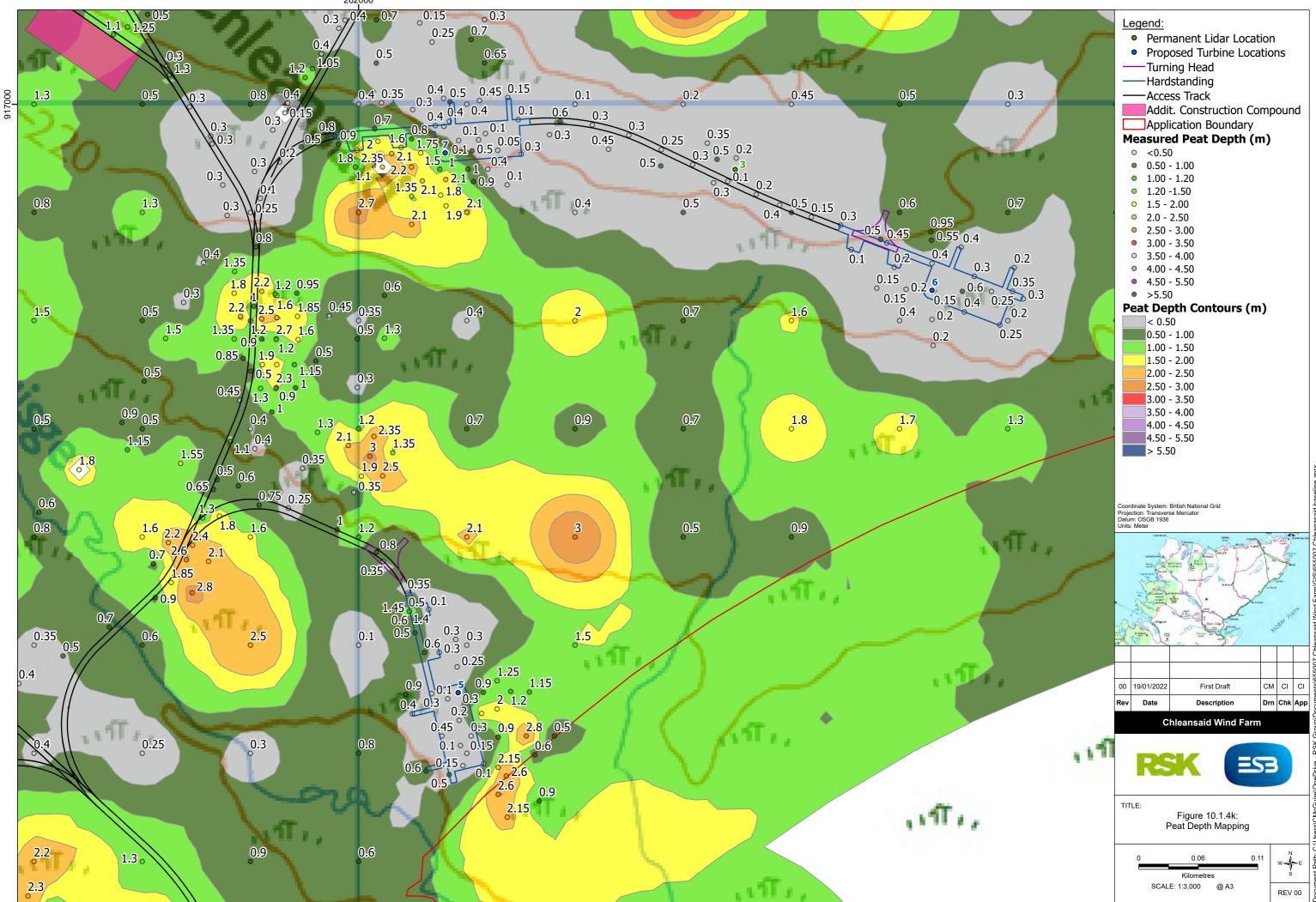




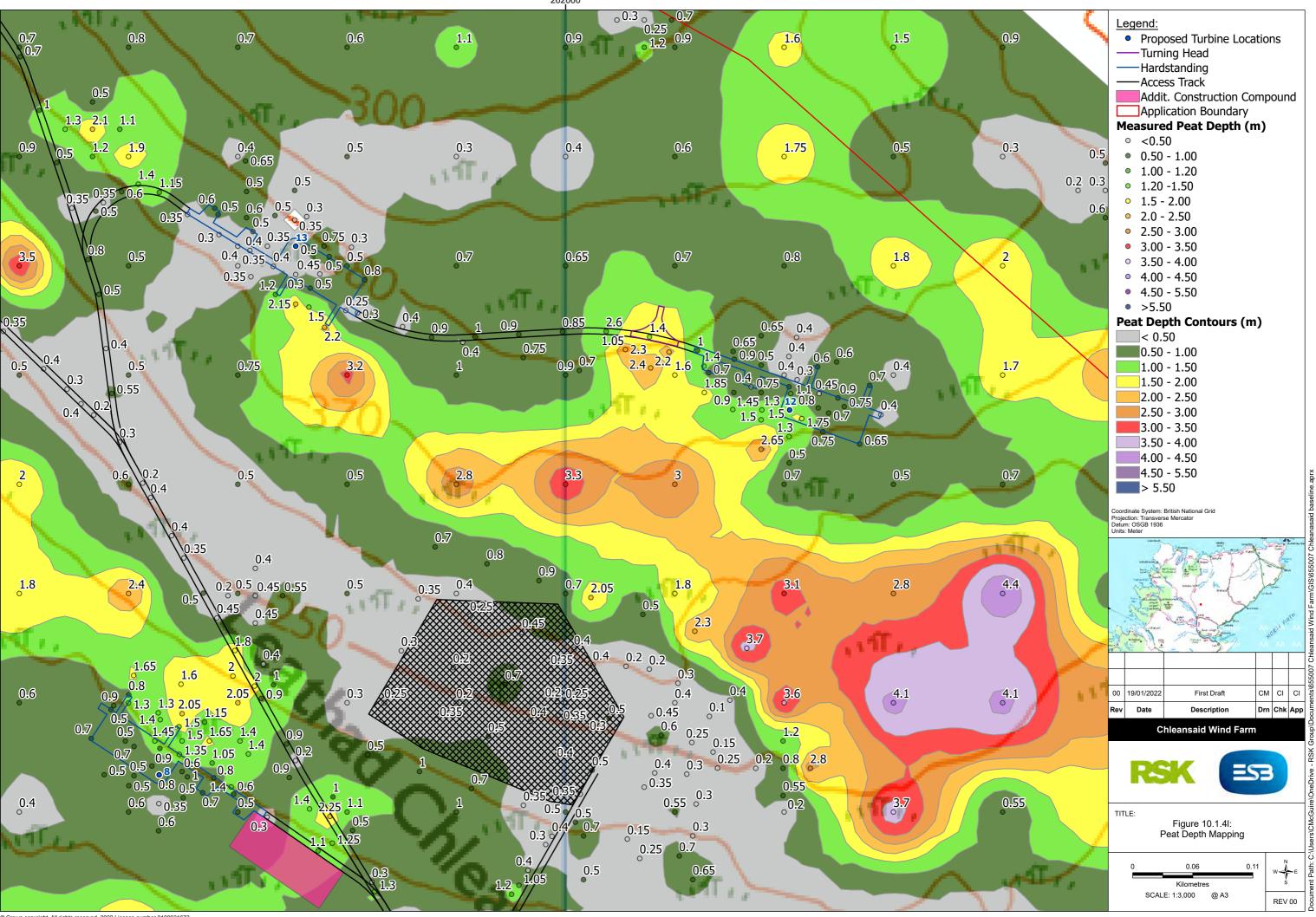




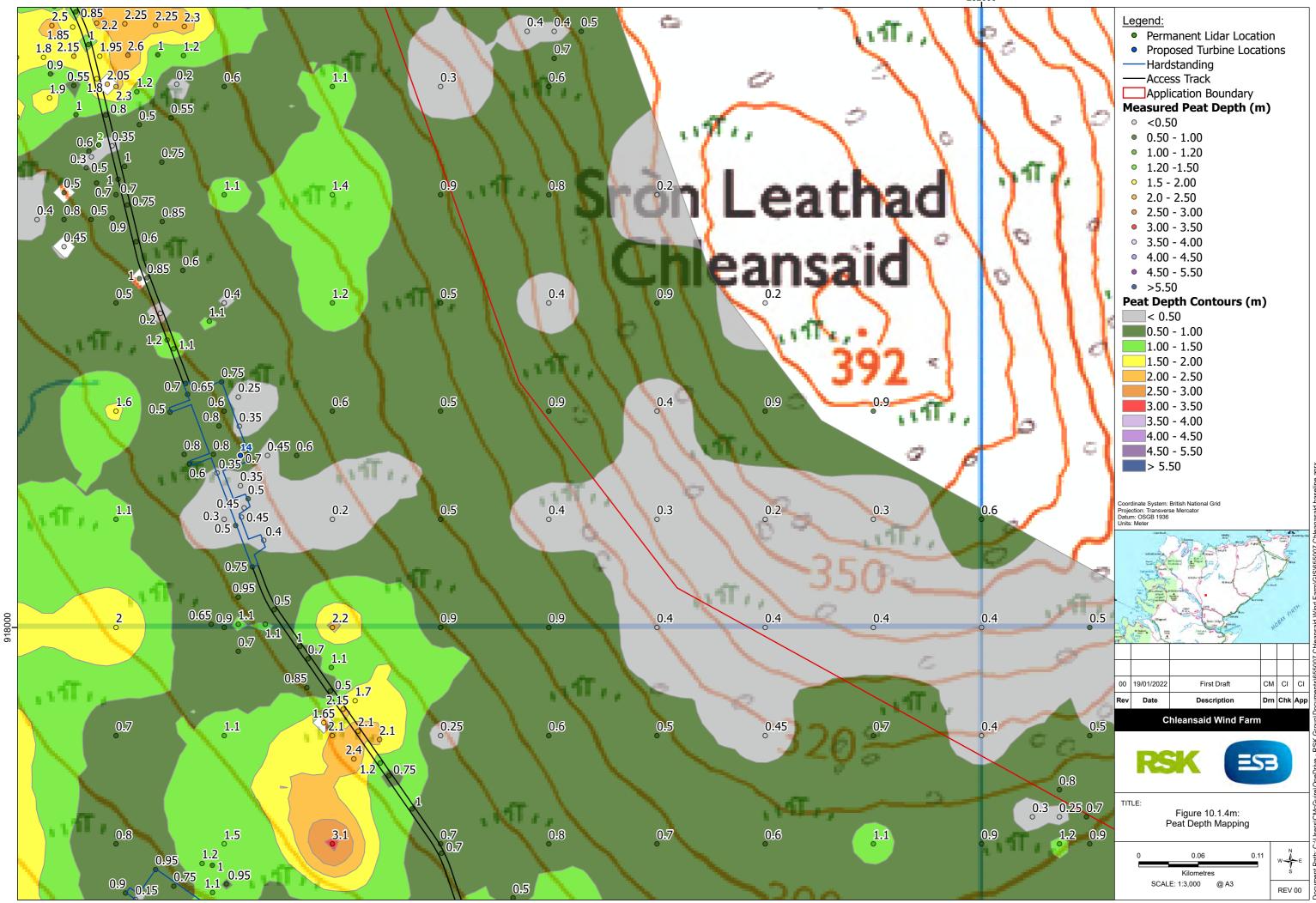




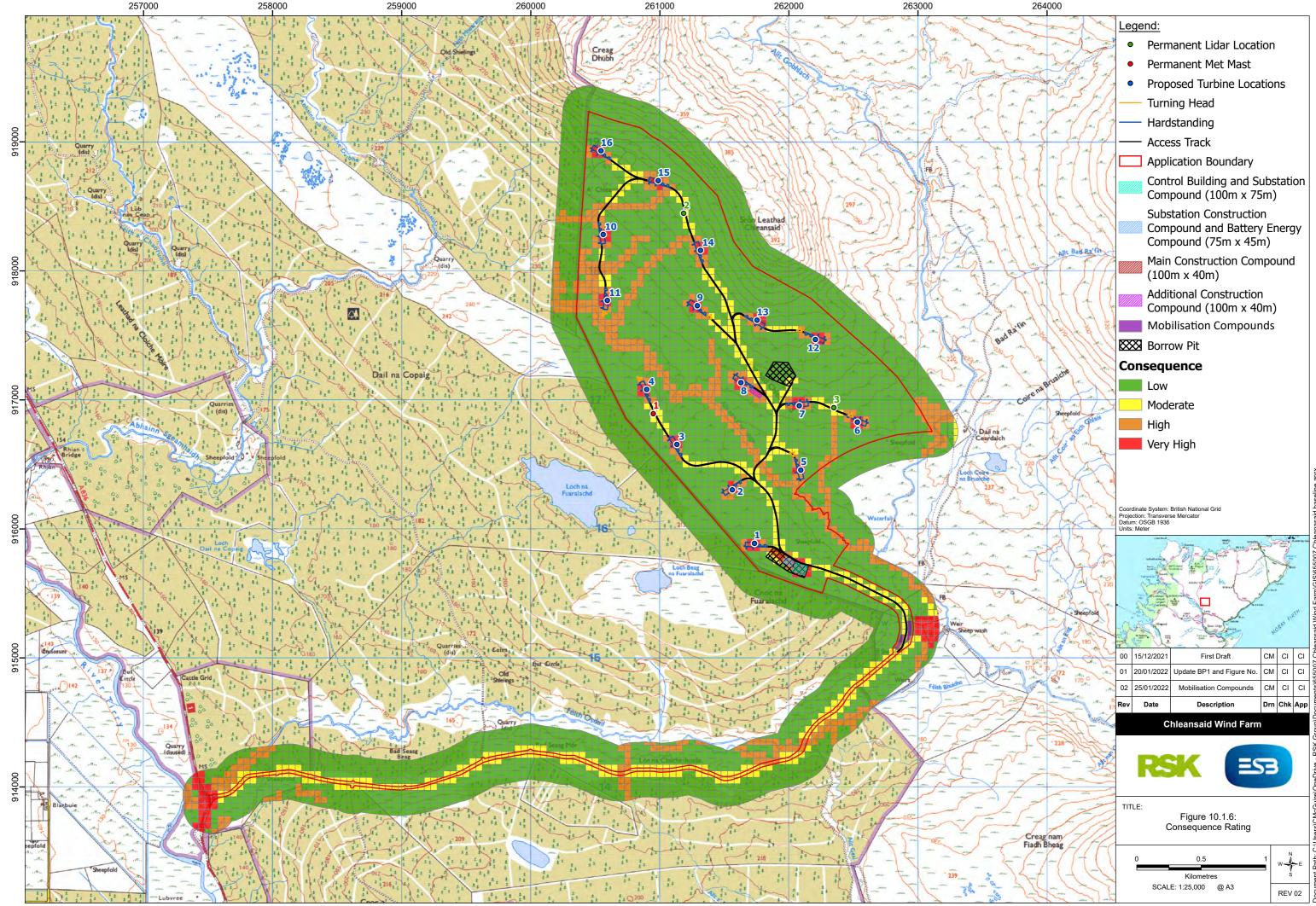




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11 ANNEX 1: PEAT CORE LOGS

Notes to accompany peat coring results

Peat coring was undertaken by RSK on 5 May 2021, during the Phase 3 peat depth surveying. Three locations were identified by RSK to be targeted, prior to the works.

Main findings

Ground conditions were slightly boggy at all locations. All locations were situated in open moorland areas. Vegetation at all locations included rushes and grasses, with bog moss present in varying amounts at all core locations.

Generally, peat was more decomposed at depth. However, at depth, there was fluctuation in decomposition between very highly and completely decomposed peat. Moisture content of cores overwhelmingly ranged from moderate to high.

Core recovery was to shallower depths than was probed due to the tip of the peat corer preventing recovery from the basal 0.2 m.

Cores from C1 returned peat to a depth of 2.00 m bgl. This consisted of a layer of moderately highly decomposed peat at the surface 0.25 m, underlain by peat varying from being very highly decomposed to completely decomposed up to a depth of 2.00 m.

Cores from C2 returned peat to a depth of 1.80 m bgl. Peat was moderately decomposed within the surface 0.15 m. This was underlain by amorphous peat fluctuating between very highly to completely decomposed.

Cores from C3 returned peat to the maximum depth of 3.50 m bgl. This consisted of a 0.50 m layer of very slightly to slightly decomposed fibrous peat at the surface. This was underlain by a thin layer of moderately highly decomposed peat to 0.70 m bgl. Below this depth, peat ranged from highly to practically fully decomposed until 2.90 m, below which was a thin 10 cm layer of completely decomposed peat at the base.

Photographs of all recovered cores are included at the end of this document. Of note, the base of the core is always shown in the right side of the photo.



Peat Core Logs

ID	X	Y	Peat Depth	Notes
C1	260398	918101	(m) 2.00	Sampled 1.75 - 1.90 m.
				0.00 - 0.25 m bgl: H6B3, moderately highly decomposed peat with a very indistinct plant structure. When squeezed, about one-third of the peat escapes between the fingers. The residue is very pasty but shows the plant structure more distinctly than before squeezing. Moderate moisture content.
				0.25 - 0.50 m bgl: H8B4/B3, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. Moderate moisture content.
				0.50 - 1.00 m bgl: H8B4, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. High moisture content.
				1.00 - 1.40 m bgl: H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.
				1.40 - 1.50 m bgl: H10B4, completely decomposed peat with no discernible plant structure. When squeezed, all the wet peat escapes between the fingers. High moisture content.
				1.50 - 1.75 m bgl: H10B5, completely decomposed peat with no discernible plant structure. When squeezed, all the wet peat escapes between the fingers. Very high moisture content.
				1.75 - 1.80 m bgl: H10B4, completely decomposed peat with no discernible plant structure. When squeezed, all the wet peat escapes between the fingers. High moisture content.
				1.80 – 2.00 m bgl: H8B3, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. Moderate moisture content.



ID	x	Y	Peat Depth (m)	Notes
C2	261624	915898	1.80	Sampled 1.20 - 1.40 m bgl
				0.00 - 0.15 m bgl H5B4, moderately decomposed peat which, when squeezed, releases very muddy water with a very small amount of amorphous granular peat escaping between the fingers. The structure of the plant remains is quite indistinct although it is still possible to recognise certain features. The residue is very pasty. High moisture content.
				0.15 - 0.40 m bgl H8B3, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. Moderate moisture content.
				0.40 - 0.50 m bgl H9B3, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. Moderate moisture content.
				0.50 - 0.65 m bgl H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.
				0.65 - 0.75 m bgl H8B3, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. Moderate moisture content.
				0.75 - 1.00 m bgl H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.
				1.00 - 1.10 m bgl H10B4, completely decomposed peat with no discernible plant structure. When squeezed, all the wet peat escapes between the fingers. High moisture content.
				1.10 - 1.25 m bgl H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.
				1.25 - 1.50 m bgl H9B3, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. Moderate moisture content.



ID	x	Y	Peat Depth (m)	Notes
C3	263101	917199	3.50	Sampled 2.70 - 2.90 m bgl.
				0.00 - 0.15 m bgl H3B4, very slightly decomposed peat which, when squeezed, releases muddy brown water, but from which no peat passes between the fingers. Plant remains still identifiable, and no amorphous material present. High moisture content
				0.15 - 0.50 m bgl H4B3, slightly decomposed peat which, when squeezed, releases very muddy brown water. No peat is passed between the fingers, but plant remains are slightly pasty and have lost some of their identifiable features. Moderate moisture content.
				0.50 - 0.70 m bgl H6B3, moderately highly decomposed peat with a very indistinct plant structure. When squeezed, about one-third of the peat escapes between the fingers. The residue is very pasty but shows the plant structure more distinctly than before squeezing. Moderate moisture content.
				0.70 - 0.90 m bgl H7B4, highly decomposed peat. Contains a lot of amorphous material with very faintly recognisable plant structure. The water, if any is released, is very dark and almost pasty. High moisture content.
				0.90 - 1.00 m bgl H8B4, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. High moisture content.
				1.00 - 1.20 m bgl H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.
				1.20 - 1.35 m bgl H7B4, highly decomposed peat. Contains a lot of amorphous material with very faintly recognisable plant structure. The water, if any is released, is very dark and almost pasty. High moisture content.
				1.35 - 1.5 m bgl H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.
				1.50 - 1.80 m bgl H8B4, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. High moisture content.
				1.80 - 2.00 m bgl H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.



ID	x	Y	Peat Depth (m)	Notes
				 2.00 - 2.30 m bgl H8B2, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. Low moisture content. 2.30 - 2.50 m bgl H9B4, practically fully decomposed peat in which there is hardly any recognisable plant structure. When squeezed, it is a fairly uniform paste. High moisture content.
				 2.50 - 2.90 m bgl H8B4, very highly decomposed peat with a large quantity of amorphous material and very indistinct plant structure. When squeezed, about two-thirds of the peat escapes between the fingers. The plant material remaining in the hand consists of residues such as roots and fibres that resist decomposition. 2.9-3.0 m bgl H10B5, completely decomposed peat with no discernible plant structure. When squeezed, all the wet peat escapes between the fingers. Very high moisture content.



Notes: View showing interior of core sections. Moderately highly decomposed peat overlying very highly decomposed peat.

Location: C1 Depth: 0.50 – 1.00 m bgl	Date:05/05/2021
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Notes: View showing interior of core section containing very highly decomposed peat.



Notes: Core interior containing primarily practically fully decomposed overlying completely decomposed peat at the base.



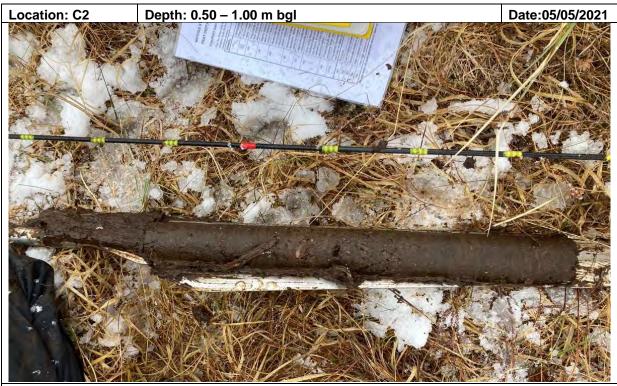


Notes: View showing interior of core sections. Completely decomposed peat overlying very highly decomposed peat. The marks in the core are from handling and designate the location from which the sample was taken.



Notes: Core interior showing moderately decomposed peat with indistinct pant structure overlying very highly decomposed peat, with some practically fully decomposed peat at the base.



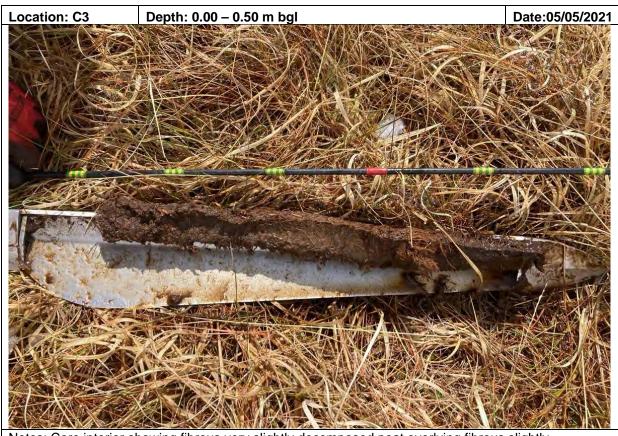


Notes: View showing interior of core sections. Practically fully decomposed peat at the top and base, with very highly decomposed peat in the middle.



Notes: Core of predominantly practically fully decomposed peat.





Notes: Core interior showing fibrous very slightly decomposed peat overlying fibrous slightly decomposed peat.



Notes: Core interior showing moderately highly decomposed peat overlying highly decomposed peat, with a small amount of very highly decomposed peat at the base.





Notes: Core interior showing practically fully decomposed peat at the top and base, with highly decomposed peat in the middle.



Notes: View showing core interior. Very highly decomposed peat overlying practically fully decomposed peat.





Notes: Core interior showing very highly decomposed peat overlying practically fully decomposed peat. The core sliding plate came detached while coring at this depth which is why the core is displayed with hands.



Notes: Very highly decomposed peat overlying completely decomposed peat.

There was an additional core from 2.5 - 3.00.



12 ANNEX 2: AUTHOR EXPERIENCE

This report was produced by Casey McGuire with assistance from Andrew Cunningham, under the supervision of Catherine Isherwood.

Field surveys were undertaken by Casey McGuire and Andrew Cunningham, both Fellows of the Geological Society of London and working towards chartership. They were assisted by Naomi Kean and Iain Storey. Both Andrew and Casey have significant experience of peat surveying and classification from wind farm developments, peatland restoration surveys, overhead line route studies and ground investigation works, and other infrastructure projects including substation development and major road alignments. Andrew has over eight years' experience in environmental consultancy and Casey has over three years' experience in this field.

Catherine Isherwood is a Chartered Geologist with an MA and PhD in Geological Sciences from the University of Cambridge and an MSc in Hydrogeology from Newcastle University. She has over 15 years' experience in environmental impact assessment and the assessment of peat and slope stability.

The report has been reviewed and authorised by Catherine Isherwood.

The assessment method was developed with input from a Chartered Engineer and a Chartered Environmentalist with a combined experience of more than 35 years.