

APPENDIX D – PEAT CORE RECORDS



Background

A series of peat cores were obtained from the proposed electrolyser location at Whitelee Wind Farm on 26th May 2021 to characterise the properties of the peatland in accordance with the *Peatland Survey. Guidance on Developments on Peatland (2017)*. The document, which was published jointly by the Scottish Government, Scottish Natural Heritage and SEPA, defines a consistent sampling methodology to quantify and qualify the peat material on site. It also provides advice on how to publish peat surveys as part of wider site investigations for development management applications, with a particular focus on wind farm developments.

The parameters used to determine the characteristics of the peat materials are outlined below.

i. Surface firmness estimation

An average man standing on one foot applies a pressure to the ground of between 5 and 6 lbs / p.s.i. and this fact is used to estimate the bearing capacity. The following symbols are used to denote the pressure the ground will stand.

Firmness of surface (P)

PO = Surface too soft to walk on

P1 = Surface just passable

P2 = Surface fairly firm

P3 = Surface firm

ii. Observations on the vegetation

Ecological Surveys were undertaken as part of the wider Environmental Impact Assessment, details of which are included in **Chapter 6: Ecology** and the associated Technical Appendices.

iii. Observations on the peat

a. Botanical observations

Ecological Surveys were undertaken as part of the wider Environmental Impact Assessment, details of this are included in Chapter 6: Ecology and the associated Technical Appendices.

b. Degree of humification - von POST SCALE

The degree of humification of peat samples is estimated in the field according to the method devised by the Swedish botanist L. von Post by squeezing a small amount of peat in the hand and the water and / or peat exuded indicates, by its colour and consistency, the degree to which the peat has undergone humification or, more correctly, a type of decomposition which includes breakdown under anaerobic conditions. The von Post scale ranges from 1 to 10, the higher the number the higher the degree of humification. The full scale is as follows:



Von Post Scale (H)	
H1	Completely undecomposed peat free of amorphous material. On squeezing, clear colourless water is pressed out.
H2	Nearly undecomposed peat, free of amorphous material, yielding only yellowish brown water on pressing.
H3	Very slightly decomposed peat, containing a little amorphous material. On squeezing, muddy brown water but no peat passes between the fingers. Residue is not pasty.
H4	Slightly decomposed peat containing some amorphous material. Strongly muddy brown water but no peat passes between the fingers. Residue is somewhat pasty.
H5	Moderately decomposed peat containing a fair amount of amorphous material. Plant structure recognisable though somewhat vague. On squeezing, some peat but mainly muddy water issues. Residue is strongly pasty.
H6	Moderately decomposed peat with a fair amount of amorphous material and indistinct plant structure. On pressing, about one third of the peat passes between the fingers. Residue is strongly pasty, but shows the plant structure more distinctly than in unsqueezed peat.
H7	Strongly decomposed peat with much amorphous material and faintly recognisable plant structure. On squeezing, about one half of the peat is extruded. The water is very dark in colour.
H8	Strongly decomposed peat with much amorphous material and very indistinct plant structure. On squeezing, two thirds of the peat and some water passes between the fingers. Residue consists of plant tissues capable of resisting decomposition (roots, fibres, wood, etc.).
H9	Practically fully decomposed peat with almost no recognisable plant structure. Nearly all the peat squeezed between the fingers as a uniform paste.
H10	Completely decomposed peat with no discernible plant structure. On squeezing, all the peat, without water, passes between the fingers.

iv. Fibre

The fibre content of each peat sample is estimated visually and the amounts of the two types (classified 'fine' or 'coarse') are noted on a scale ranging from 0 to 3 as shown below.

Fine fibres, mainly derived from *Eriophorum spp.* (F)

F0 = Nil

F1 = Low content

F2 = Moderate content

F3 = High content

Coarse fibres, mainly rootlets (R)

R0 = Nil

R1 = Low content

R2 = Moderate content

R3 = High content

v. Wood

Wood remains, especially if they are large and resistant, may conceivably cause a certain amount of difficulty during the exploitation of a bog. An attempt is therefore made when sampling to assess the extent of wood. It is estimated on a scale ranging from 0 to 3 as detailed below.

Appendix D – Peat Coring Records

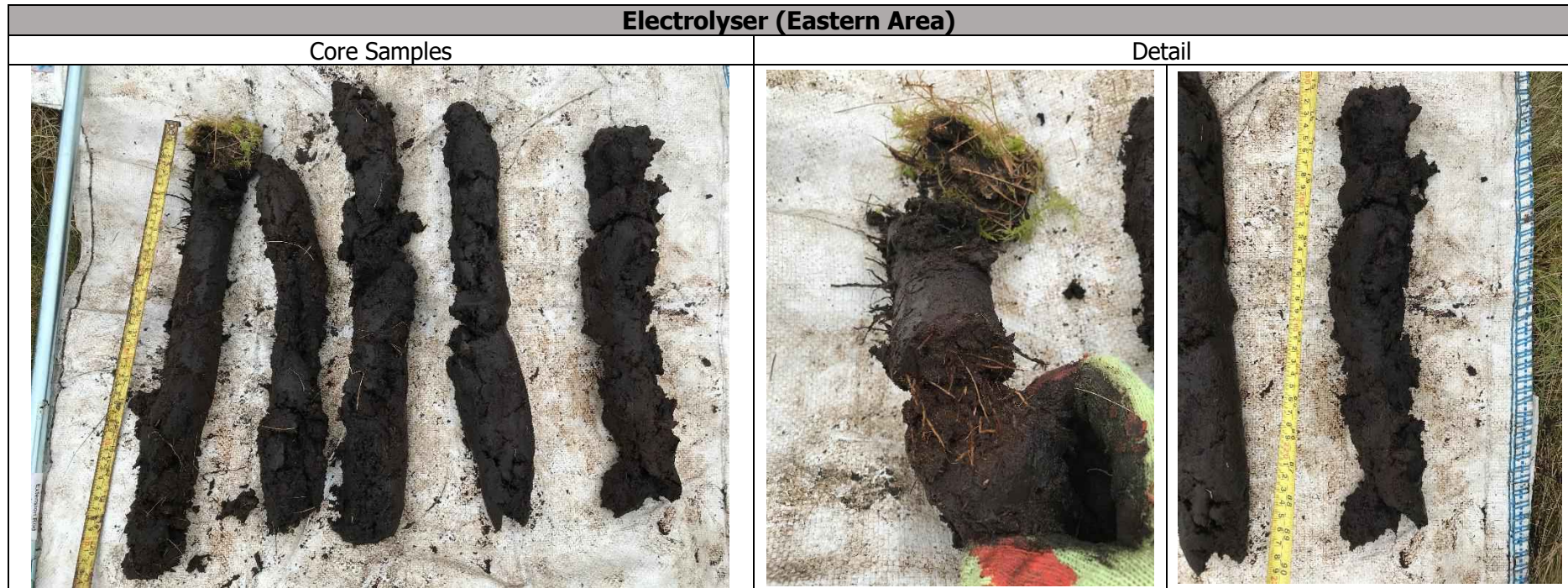


Wood remains (W)
W0= Nil
W1 = Low content
W2 = Moderate content
W3 = High content

vi. Other observations

When peat is freshly sampled and before it darkens by oxidation, note is taken of its colour, stratification, the presence of visible mineral matter and any other features of interest.

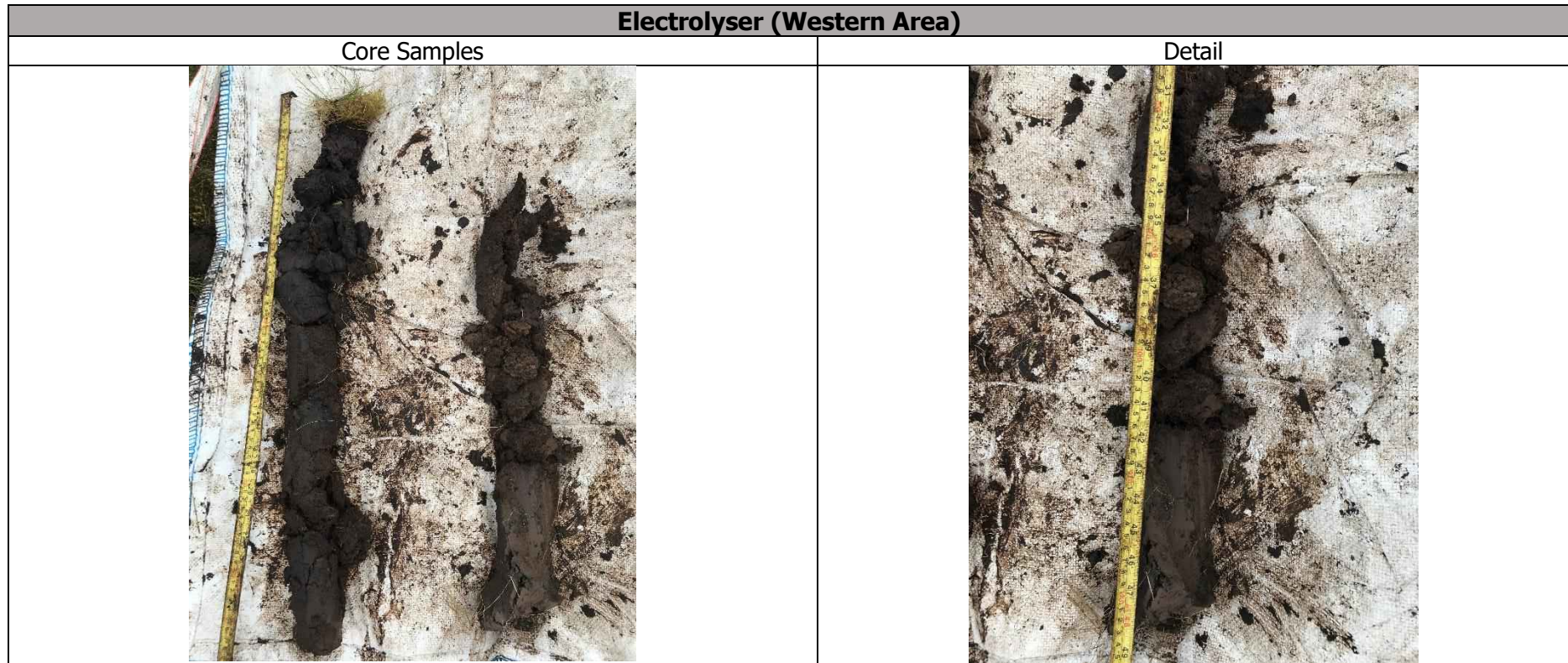
Photographs of the peat cores obtained from Whitelee along with information relating to the parameters outlined above are presented overleaf with a summary of the information gathered during the peat coring process presented in the main body of text of the Peat Slide Risk Assessment (PSRA).



Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
Electrolyser East	0.0-0.5	3	3	3	2	0	Dark brown
	0.5-1.0	3	4	2	1	0	Dark brown
	1.0-1.5	3	7	2	1	0	Dark brown
	1.5-2.0	3	8	2	1	1	Black brown
	2.0-2.3	3	9	2	1	0	Black brown



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Location	Depth (m)	Firmness of Surface (P)	Von Post (H)	Fine Fibres (F)	Coarse Fibres (R)	Wood Remains (W)	Other Observations (Colour)
Electrolyser West	0.0-0.5	3	2	3	2	0	Dark brown
	0.5-0.9	3	4	3	2	0	Dark brown